

September 2018 Monitoring Report
PREFERRED PLATING #152030
32 ALLEN BOULEVARD
FARMINGDALE, NY 11735

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September 2018 Monitoring Report
PREFERRED PLATING
32 ALLEN BOULEVARD, FARMINGDALE, NY

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SECTION 1.0 INTRODUCTION

1.0 Site History

The Preferred Plating Corp site is located on a one-acre property located at 32 Allan Boulevard in Farmingdale, NY. The site is located east of Route 110 approximately one mile east of the Suffolk-Nassau County line. The surrounding businesses are generally light industrial and commercial in use and are serviced by public water. The site is approximately 58 feet above sea level and the general groundwater flow direction is generally south-southeast.

Initial heavy metal contamination was detected in the groundwater as early as 1953 when Suffolk County Department of Health Services (SCDHS) discovered cracked and damaged storage pits used for industrial wastewater containment. The United States Environmental Protection Agency (USEPA) conducted the initial remedial investigation and site feasibility study between June 1987 and June 1989. Heavy metals, mostly cadmium and chromium, along with chlorinated solvents were detected in the groundwater beneath the site. In 1989, a Record of Decision was signed and a site remedy was developed. The remedy involved an extraction and treatment system, and in 1992, the excavation of impacted soils was also recommended. By 1997, significant decreases in metals were observed and the chlorinated solvent concentrations fell below the New York State Groundwater Standards. The groundwater treatment and extraction was stopped and the site was entered into an annual groundwater monitoring program. In 2009, the groundwater monitoring program was changed to a five-year program.

In October 2015, at the behest of the New York State Department of Environmental Conservation (NYSDEC), groundwater sampling was performed in six monitoring wells by C2G Environmental Consultants, LLC. The results of this sampling showed significant increases in concentrations of chromium. Additionally, there was doubt that the low flow sampling methods used were appropriate along with concerns that the sampling method negatively influenced the groundwater sample results.

Therefore, in August of 2018 Enviroscience Consultants was contacted to perform groundwater sampling in nine of the onsite wells. The sampling was performed on September 26 and 27, 2018. All nine wells were sampled for cadmium and chromium using NYSDEC required low flow sampling methods. Mr. Sarken Dressler from the NYSDEC was onsite to observe the second day of groundwater sampling.

SECTION 2.0

GROUNDWATER SAMPLING

2.1 Overview

The groundwater sampling event was conducted on September 26, 2018 and September 27, 2018. All nine wells, known as ERT-1 through ERT-6, MW-6SS, SP-5, and SP-6, were sampled over two days following the methods outlined in the NYSDEC and USEPA guidance for low flow sampling methodology. All nine wells were sampled for cadmium and chromium, which are the contaminants of concern at this site. Figure 1 shows the site location and figure 2 shows the well locations.

2.2 Methods

As required by the NYSDEC low flow sampling methods were utilized for this sampling event. Low flow methods are more effective in minimizing subsurface disturbance and typically result in lower sample turbidity which is essential when sampling for metals. Prior to each sample the cap was removed from the well and the depth to the water surface in the well was measured using the Solinst water level indicator. The measurements were recorded in the field sampling logs provided in Attachment A. The depth to the bottom of the well was measured after sampling to reduce turbidity within the wells.

A sheet of polyethylene was laid on the ground adjacent to the well head to prevent downhole sampling equipment from touching the ground and acquiring contaminants. A length of discharge tubing was attached to the Geotech Geopump II Peristaltic sampling pump sufficient to reach approximately two feet into the water table. Additional lengths of tubing were used to connect the pump to the flow-through cell and to discharge the purge water into five gallon buckets. The tubing was slowly lowered into the well, while disturbance to the water column was minimized.

Pumping water from the well started at the minimum discharge rate of the pump and was adjusted to maintain pump rate. The water level in the 2-inch diameter wells SP-5, SP-6, and MW-6SS was monitored with the water level indicator while pumping to monitor the water level within well and maintain a steady drawdown rate. Based on the high recharge rate of the well the water level remained steady in these wells throughout purging and excessive drawdown was not a concern. The remaining wells (ERT-1 through ERT-6) were 1-inch in diameter therefore, there was no room for the interface probe to measure drawdown. The lack of drawdown measurements did not pose a concern at this site due to high recharge rates within the wells and generally low rate of purging. Table 2.2.1 shows the discharge rate of each well and the total volume of water purged prior to sampling.

Table 2.1.1
Discharge Rates and Purge Volume

Monitoring Well	Discharge rate (sec/500 ml)	Total discharge volume (in liters)
ERT-1	78.18	9.5
ERT-2	52.95	11.33
ERT-3	48.55	21.62
ERT-4	117.56	6.38
ERT-5	96.56	6.21
ERT-6	42.35	14.16
SP-5	36.58	16.40
SP-6	72.30	10.37
MW-6SS	55.94	8.04

While purging the well at a low flow rate, field indicator parameters (pH, temperature, specific conductance, turbidity, and ORP) were monitored periodically (approximately every 5 minutes) with the YSI 556 multi parameter meter connected to the flow-through cell. A second turbidity meter, a HACH 2100Q Portable Turbidimeter, was used for measuring concurrent turbidity readings in wells ERT-1, ERT-3, and ERT-4 after the turbidity portion of the YSI meter displayed suspect readings. All readings were recorded in the field logs provided in Appendix A. Calibration logs for this field equipment is also included in Appendix B.

All purge water was discharged directly into the ground as drumming purge water was not required based on the concentrations and type of the site contaminants.

Purging continued until all parameters stabilized to within the following limits or at least five volumes of water were purged. The water volume was greater than the drawdown rate or estimated drawdown rate and the volume of water in the tubing for all wells.

- Turbidity – below 50 NTUs
- Dissolved oxygen - within 10%
- Specific conductance - within 3%
- Temperature - within 3%
- pH - ± 0.1 pH unit
- ORP/Eh - ± 10 millivolts

Samples were collected directly from the pump discharge tube after disconnecting it from the flow-through cell into one 250 milliliter plastic sample bottle pre-preserved with nitric acid, which was

prepared by the laboratory. While filling sample containers turbulence was kept to a minimum by using the discharge tubing to also collect the sample. All pre-preserved containers were clearly labeled with their contents and the type of sample to be collected in that container, in this case cadmium and chromium.

After the sample container had been filled, the sampling tubing was removed from the well. The tubing was for one-time use and was disposed of after the sampling event. New tubing was utilized for each well. Based on the mechanics of a peristaltic pump only the silicone tubing within the pump was in contact with the groundwater. The silicone tubing was decontaminated using the following steps:

- The silicone tubing was flushed with a non-phosphate detergent solution.
- Sufficient potable water was run through the tubing to remove all detergent.
- The tubing was flushed with distilled or de-ionized water. This liquid was not reused.

Other equipment (water level indicator, etc.) was decontaminated according the Standard Field Procedures for equipment decontamination which involved rinsing in potable water followed by a rinse with the non-phosphate detergent.

All samples placed in an ice-filled cooler for transport. All of the samples were transported to Phoenix Environmental Laboratories (known as Phoenix), an ELAP certified laboratory. Chains of Custody were completed to document sample handling.

2.3 Field Quality Assurance and Quality Control

In addition to the nine groundwater samples collected for analysis several field quality assurance and quality control (QA/QC) samples were also collected. These samples include:

- One Field duplicate
- One Matrix spike
- One Matrix spike duplicate
- One Equipment blank
- No trip blank was provided for this sampling event as no VOC analysis was required.

In general, field QA/QC samples are collected at a frequency of one QA/QC sample per 20 samples. The equipment blank is used to test the effectiveness of decontamination procedures. The field duplicate is used to document the precision of sampling process along with the reproducibility of sample preparation and analysis. Additionally, the matrix spike and matrix spike duplicate assist the lab in performing their QA/QC analysis.

SECTION 3.0 RESULTS

3.1 Overview

All of the results were tabularized according to each regulatory agency that required sampling at the site. The results are included in Tables 3.2.1 and 3.2.2 located at the end of results discussion. The laboratory reports are included in Appendix C. Only detected metals are reported in these tables. If a metal was not detected across all samples it was not included.

All of the groundwater results were compared to the NYSDEC Class GA Ambient Water Quality Standards (Groundwater Standards), which is also shown in the tables. Class GA is the New York State water classification that applies to groundwater used as a drinking water source. Since the aquifer beneath Suffolk County is considered a sole source aquifer for drinking water Class GA is the appropriate standard for these samples.

3.2 Results Discussion

The results show that there were detected levels of cadmium and chromium in all nine samples along with the field duplicate. The equipment blank only showed detections of chromium. However, simply the detection of these compounds is not indicative of groundwater contamination.

The comparison shows that there are exceedances of the Groundwater Standard for cadmium in all nine wells and the field duplicate, and exceedances of chromium in wells SP-6, ERT-2, ERT-3, ERT-4, and ERT-5 along with the field duplicate. Historically, exceedances of these compounds have been found at this site, therefore, to evaluate these results they were compared to previous sampling performed by the USEPA in December 2016 and C2G Consultants in October 2015. These comparisons are shown in Table 3.2.2.

Based on these comparisons our cadmium results show elevated levels of cadmium when compared to the USEPA's 2016 results in MW-6SS, slightly elevated concentrations in wells SP-5, SP-6, ERT-5, and ERT-2, and in wells ERT-6, ERT-3, ERT-1, and ERT-4 our results are very similar to the USEPA concentrations. The C2G results for cadmium are generally similar to both our results and the USEPA results. Although concentrations of cadmium in four wells are slightly elevated above the USEPA concentrations they are within the same order of magnitude as past sampling and are in line with expected deviations from separate sampling events.

One well (MW-6SS) showed a significant increase in cadmium concentrations at 240 micrograms per liter (ug/L). The next highest cadmium result was 53 ug/L in ERT-2. This result appears to be an anomaly as the well was sampled following the same procedure as all others, turbidity was well below 50 NTUs when the sample was collected and the lab data review indicated no significant non-conformities within the data. Taken as a whole, the cadmium results, while slightly elevated, are generally consistent with past sampling.

Chromium results that exceeded water quality standards were also compared to the USEPA's 2016 sampling results and to the C2G 2015 sampling results. In general, our chromium results were very similar to the USEPA's results and in several cases lower in concentration. The results in ERT-3 appear to be slightly elevated but still in line with past sampling by the USEPA. The chromium results collected by C2G Consultants demonstrated a significant increase in chromium concentrations in wells SP-6, MW-6SS, ERT-3, and ERT-4. These concentrations are closer to chromium levels seen in early sample results during the initial stages of the site remediation process. Therefore, it is believed that these results are not representative of the site and should not be used to evaluate the site or to determine future remedial steps.

Table 3.2.1
Groundwater Chemical Analytical Results
Preferred Plating
32 Allen Boulevard, Farmingdale, NY
September 26 & 27, 2018

Sample Location	ERT-6	SP-5	SP-6	MW-6SS	ERT-5	ERT-2	Field Duplicate	ERT-3	ERT-1	ERT-4	Equipment Blank	NYS Class GA Water Quality Standards & Guidance Values
<i>Metals (In micrograms per liter)</i>												
Cadmium	12	22	34	240	43	53	9.0	9.0	8.0	9.0	ND	5.0
Chromium	18	12	52	33	70	58	111	111	11	86	1.0	50.0

Notes:

ND

Bold

=

Not detected

=

Values indicate an exceedance of the New York State (NYS) Ambient Groundwater Quality Class GA Standards and Guidance Values.

Table 3.2.2
Comparison Groundwater Chemical Analytical Results
Preferred Plating
32 Allen Boulevard, Farmingdale, NY
Enviroscience 2018 Sampling, USEPA 2016 Sampling, and C2G 2015 Sampling

Sample Location	ERT-6			SP-5			SP-6			MW-6SS			ERT-5			NYS Class GA Water Quality Standards & Guidance Values
	Enviro-science	USEPA	C2G	Enviro-science	USEPA	C2G	Enviro-science	USEPA	C2G	Enviro-science	USEPA	C2G	Enviro-science	USEPA	C2G	
Metals (in micrograms per liter)																
Cadmium	12	15	20	22	12	NS	34	14	22	240	8.7	13	43	20	NS	5.0
Chromium	18	ND	43	12	35	NS	52	62	176	33	56	404	70	50	NS	50.0

Sample Location	ERT-2			ERT-3			ERT-1			ERT-4			NYS Class GA Water Quality Standards & Guidance Values
	Enviro-science	USEPA	C2G	Enviro-science	USEPA	C2G	Enviro-science	USEPA	C2G	Enviro-science	USEPA	C2G	
Metals (in micrograms per liter)													
Cadmium	53	10	NS	9.0	4.9	10	8.0	5.7	NS	9.0	9.6	14	5.0
Chromium	58	34	NS	111	57	509	11	5	NS	86	26	876	50.0

Notes:

The C2G sample locations for SP-6 and MW-SS6 are not clear as these wells are in a cluster of three that C2G labeled SP-6A, SP-6B, and SP-6C. Enviroscience assumes SP-6A is MW-6SS and SP-6C is SP-6 based on the known depths of the wells.

ND = Not detected
 NS = Not samples

Bold/Shaded = Values indicate an exceedance of the New York State (NYS) Ambient Groundwater Quality Class GA Standards and Guidance Values.

SECTION 4.0

QUALITY ASSURANCE AND QUALITY CONTROL

4.1 Overview

The purpose of the QA/QC program and review is to evaluate whether the samples were collected effectively in the field, to reduce concerns for cross-contamination, and evaluate whether the laboratory analysis shows any anomalies, and determine the usefulness of data. The QA/QC analysis can also highlight areas of improvement for subsequent sampling events. The QA/QC program can be broken into the following two portions:

- field methods and sampling technique and;
- laboratory analysis

Each portion will be discussed and an overall effectiveness of the data will be determined along with any steps necessary to eliminate concerns for the next sampling event.

4.2 Field Sampling Methods QA/QC

In order to determine if the field sampling techniques were effective in reducing cross-contamination and increasing data usability several factors can be reviewed. These factors include, sample holding time, sample preservation, steps taken during sample collection, and QA/QC field samples.

For this sampling event, all samples were received within the appropriate holding time for each metal analyzed. Additionally, all samples were placed in the appropriately preserved containers and transported in coolers on ice.

One of the first steps to reduce cross-contamination was the order of sample collection, from the least contaminated wells to most contaminated wells. Samples were collected from the offsite well ERT-6 first moving onto the site and collecting samples in the direction of the southern wells to the northern wells. This extra step ensures that any failure of the equipment decontamination procedures would not affect less contaminated wells. Currently, there are no concerns with the decontamination procedures.

Another step in the field to increase data usability is following equipment decontamination procedures. Any downhole equipment (sample pump, interface probe, etc.) was decontaminated following the procedures outlined in the sampling methods prior to placement within the well. Additionally, the downhole equipment was never placed directly on the ground and did not have the opportunity to pick up surface soil contaminants. The collection of the equipment blank sample is used to evaluate the effectiveness of decontamination procedures.

The equipment blank sample is one of several field QA/QC samples collected. The equipment blank sample was collected for analysis from the decontamination wastewater after sampling was

completed. The results of this sample is then compared to the groundwater samples results. Based on this comparison it appears that the samples were collected with minimal cross-contamination. The equipment blank result only shows a low level detection of chromium. The equipment blank results do not negatively impact the usability of the results.

The field duplicate sample was collected to determine the accuracy of the laboratory's analysis by allowing the direct comparison of two samples collected from the same location. For this sampling event the field duplicate sample was collected from ERT-3. Based on the comparison between the field duplicate and the appropriate field sample, the laboratory was consistent in their analysis, which increases data integrity.

The matrix spike (MS) and matrix spike duplicate (MSD) were separate samples spiked by the laboratory with known concentrations of the analytes of interest. The samples were collected with the same methods and procedures as the field result samples. They were analyzed to determine, including the matrix interferences, if the analysis procedures are working within established control limits. This is carried through the complete preparation and analytical procedure. The recoveries of the spiked analytes were evaluated to determine accuracy in a given matrix. Comparison of the MS to the MSD will yield a precision measurement in a given matrix. All of the provided QA/QC analysis from Phoenix show that the MS and MSD results were within acceptable criteria.

Based on an analysis of field QA/QC data there were no significant nonconformities that would yield the data unusable for its intended purposes.

4.3 Laboratory QA/QC analysis

Phoenix Labs provided a Category B QA/QC package for this sampling that has been reviewed for data usability. It is not unusual for laboratory reports to contain QC non-conformities. The chance of every analyte passing all the QC criteria is rare. Therefore, it is the purpose of this section to evaluate the laboratory QA/QC data and provide an analysis of result usability.

The first step of evaluating the laboratory data was a review of the method detection or reporting limits. If these limits are values above the groundwater standards used to determine acceptable concentrations of compounds, then non-detect results could conceivably hide exceedances of the groundwater standards. Based on a review of the reporting limits for all compounds none of the limits exceed the groundwater standards.

The QA/QC acceptance criteria was reviewed for each regulatory agency's parameters. In order to evaluate the acceptable QA/QC results the recovery percentages of the MS, MDS, and LCS are compared to the Relative Percent Difference (RPD) specified recovery limits.

Phoenix performed a Category B QA/QC analysis, which demonstrated all QA/QC data was within the acceptance criteria for each compound. Therefore, there are no QC nonconformities that would reduce the usability of this data.

4.4 Data Usability

There were no significant QC nonconformities identified within the QA/QC results submitted by Phoenix or within the sampling procedures outlined within this report. Therefore, based on a review of the QA/QC procedures there is no reason to question the usability of the data for the purposes outlined in this report.

SECTION 5.0

CONCLUSIONS

5.1 Conclusion

The purpose of the groundwater sampling event performed in September 2018 was to evaluate the site's groundwater for concentrations of cadmium and chromium and to determine if past sampling results are representative of the groundwater conditions at this site.

The sampling results showed exceedances of the NYS groundwater quality standards for both cadmium and chromium, which was expected and consistent with past results. Therefore, the sample results were compared to the USEPA 2016 and the C2G 2015 sampling events. The sample results for cadmium and chromium are generally consistent with the previous USEPA sampling events except for one anomalous cadmium result. Based on our 2018 sampling results and the USEPA's 2016 sampling results, the C2G 2015 chromium sample results are significantly elevated and not aligned with groundwater trends at this site. Therefore, these results do not appear to be representative of the overall metal concentrations in groundwater at this site.

Enviroscience recommends not relying on the C2G sampling results to determine future remedial steps and instead utilizing the consistent sampling results present by the USEPA, which show a continual decrease in concentrations of both cadmium and chromium. The USEPA has been monitoring groundwater this site since August 1988. During this time period the USEPA has performed 22 groundwater sampling events, which demonstrate a consistent downward trend in the metals concentrations within groundwater.

The USEPA currently has the site under a five-year groundwater monitoring plan based on the steady decrease in contaminants and minimal offsite migration of contaminants. Considering the generally low level exceedances of cadmium and chromium at this site along with the likelihood that these concentrations will continue to decrease, the USEPA's five-year monitoring program appears sufficient to monitor and assess this site going forward. Enviroscience recommends relying on the USEPA monitoring results and requests that the USEPA monitor be the sole source of monitoring at this site in the future.

This will help maintain the consistency within the sampling results and prevent situations where multiple sets of data are used against each other causing confusion among the involved parties.



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FIGURE 1
Site Location

Preferred Plating
 32 Allen Boulevard
 Farmingdale, NY



Attachment A

Well Sampling Stability

Parameters

Monitoring Well Field Measurement Record

Site Name: Preferred Plating, 32 Allan Blvd, Farmingdale

Date/Time: 9/27/18 11:40am

Field Technician(s) Chris Ortiz , Kathryn Loddengaard

<i>Monitoring Well ID ERT-1</i>	PV: 5 minutes	PV: 10 minutes	PV: 15 minutes	PV: 20 minutes	PV: 25 minutes
Depth to Water (feet) *measured from top of well casing	16.57				
Depth to Bottom (feet) *measured from top of well casing	24.15				
Temp (°C)	21.0	21.0	21.0	20.8	20.9
Conductivity (mS/cm)	0.054	0.055	0.054	0.055	0.056
pH	7.15	6.74	6.52	6.43	6.35
Turbidity (NTU)	45.7	48.3	50.4	41.9	54.3
ORP	267.7	274.5	279.6	286.4	288.5
Dissolved Oxygen (mg/L)	6.94	6.91	6.94	6.91	6.93
<i>Additional Notes</i> Concurrent Turbidity readings from second meter	0.61	0.40	0.53	0.41	0.39

PV: Purge Volume

Monitoring Well Field Measurement Record

Site Name: Preferred Plating, 32 Allan Blvd, Farmingdale

Date/Time: 9/27/18 8:50am

Field Technician(s) Chris Ortiz , Kathryn Loddengaard

<i>Monitoring Well ID</i> <i>ERT-2</i>	PV: 5 minutes	PV: 10 minutes	PV: 15 minutes	PV: 20 minutes
Depth to Water (feet) *measured from top of well casing	16.69			
Depth to Bottom (feet) *measured from top of well casing	25.15			
Temp (°C)	18.7	18.6	18.6	18.5
Conductivity (mS/cm)	294.3	291.6	289.0	289.2
pH	7.08	7.12	7.09	7.20
Turbidity (NTU)	10.6	15.8	7.5	8.1
ORP	90.8	88.9	87.6	87.5
Dissolved Oxygen (mg/L)	6.38	6.43	6.45	6.44
<i>Additional Notes</i>				

PV: Purge Volume

Monitoring Well Field Measurement Record

Site Name: Preferred Plating, 32 Allan Blvd, Farmingdale

Date/Time: 9/27/18 10:15

Field Technician(s) Chris Ortiz , Kathryn Loddengaard

Monitoring Well ID ERT-3	PV: 5 minutes	PV: 10 minutes	PV: 15 minutes	PV: 20 minutes	PV: 25 minutes	PV: 30 minutes	PV: 35 minutes
Depth to Water (feet) *measured from top of well casing	16.71						
Depth to Bottom (feet) *measured from top of well casing	24.15						
Temp (°C)	17.3	17.2	17.2	17.2	17.2	17.3	17.3
Conductivity (mS/cm)	0.421	0.426	0.426	0.427	0.428	0.428	0.429
pH	7.42	7.54	7.35	7.25	6.89	6.75	6.63
Turbidity (NTU)	5.5	9.5	13.3	18.3	0.63	0.58	0.40
ORP	244.2	254.7	266.1	271.4	284.8	292.7	297.1
Dissolved Oxygen (mg/L)	6.19	6.05	6.04	5.92	5.90	6.13	6.15
<i>Additional Notes</i>	Second Turbidity Meter used after 25 minutes due to unusual readings in original meter						

PV: Purge Volume

Monitoring Well Field Measurement Record

Site Name: Preferred Plating, 32 Allan Blvd, Farmingdale

Date/Time: 9/27/18 12:35 pm

Field Technician(s) Chris Ortiz , Kathryn Loddengaard

Monitoring Well ID ERT-4	PV: 5 minutes	PV: 10 minutes	PV: 15 minutes	PV: 20 minutes	PV: 25 minutes
Depth to Water (feet) *measured from top of well casing	16.98				
Depth to Bottom (feet) *measured from top of well casing	25.15				
Temp (°C)	17.7	17.4	17.4	17.3	17.3
Conductivity (mS/cm)	0.473	0.469	0.469	0.468	0.468
pH	6.59	6.48	6.34	6.30	6.25
Turbidity (NTU)	3.1	3.9	3.2	3.4	4.3
ORP	325.6	327.7	329.1	330.0	331.8
Dissolved Oxygen (mg/L)	6.76	6.31	6.06	5.94	5.87
Additional Notes Concurrent Turbidity readings from second meter	0.58	2.73	1.59	0.92	1.28

PV: Purge Volume

Monitoring Well Field Measurement Record

Site Name: Preferred Plating, 32 Allan Blvd, Farmingdale

Date/Time: 9/26/18 10:17

Field Technician(s) Chris Ortiz , Kathryn Loddengaard

Monitoring Well ID ERT-5	PV: 5 minutes	PV: 10 minutes	PV: 15 minutes	PV: 20 minutes
Depth to Water (feet) *measured from top of well casing	20.30			
Depth to Bottom (feet) *measured from top of well casing	28.57			
Temp (°C)	18.6	17.9	18.1	17.9
Conductivity (mS/cm)	0.386	0.376	0.376	0.377
pH	7.13	6.52	6.34	6.31
Turbidity (NTU)	6.7	3.1	2.5	3.4
ORP	305.1	301.7	297.5	293.8
Dissolved Oxygen (mg/L)	1.12	1.07	1.02	1.03
Additional Notes				

PV: Purge Volume

Monitoring Well Field Measurement Record

Site Name: Preferred Plating, 32 Allan Blvd, Farmingdale

Date/Time: 9/26/18 9:15am

Field Technician(s) Chris Ortiz , Kathryn Loddengaard

<i>Monitoring Well ID</i> <i>ERT-6</i>	PV: 5 minutes	PV: 10 minutes	PV: 15 minutes	PV: 20 minutes
Depth to Water (feet) *measured from top of well casing	13.80			
Depth to Bottom (feet) *measured from top of well casing	24.50			
Temp (°C)	21.1	21.1	21.6	21.2
Conductivity (mS/cm)	0.549	0.570	0.574	0.585
pH	6.28	6.20	6.27	6.43
Turbidity (NTU)	17.50	3.5	28.5	4.8
ORP	272.2	276.4	272.6	275.1
Dissolved Oxygen (mg/L)	5.40	5.90	6.11	6.51
<i>Additional Notes</i>				

PV: Purge Volume

Monitoring Well Field Measurement Record

Site Name: Preferred Plating, 32 Allan Blvd, Farmingdale

Date/Time: 9/26/18 12:35 pm

Field Technician(s) Chris Ortiz , Kathryn Loddengaard

Monitoring Well ID MW-6SS	PV: 5 minutes	PV: 10 minutes	PV: 15 minutes
Depth to Water (feet) *measured from top of well casing	16.41		
Depth to Bottom (feet) *measured from top of well casing	26.00		
Temp (°C)	18.3	18.2	18.0
Conductivity (mS/cm)	0.391	0.396	0.387
pH	6.54	6.29	6.22
Turbidity (NTU)	6.4	5.2	4.0
ORP	204.9	204.3	205.8
Dissolved Oxygen (mg/L)	1.63	1.77	1.72
Additional Notes			

PV: Purge Volume

Monitoring Well Field Measurement Record

Site Name: Preferred Plating, 32 Allan Blvd, Farmingdale

Date/Time: 9/26/18 10:17

Field Technician(s) Chris Ortiz , Kathryn Loddengaard

Monitoring Well ID SP-5	PV: 5 minutes	PV: 10 minutes	PV: 15 minutes	PV: 20 minutes
Depth to Water (feet) *measured from top of well casing	16.98			
Depth to Bottom (feet) *measured from top of well casing	27.51			
Temp (°C)	16.6	16.5	16.6	16.6
Conductivity (mS/cm)	0.100	0.104	0.113	0.117
pH	5.42	5.22	5.05	5.02
Turbidity (NTU)	4.0	3.0	2.3	2.6
ORP	305.1	301.7	297.5	293.8
Dissolved Oxygen (mg/L)	1.12	1.07	1.02	1.03
Additional Notes				

PV: Purge Volume

Monitoring Well Field Measurement Record

Site Name: Preferred Plating, 32 Allan Blvd, Farmingdale

Date/Time: 9/26/18 11:20am

Field Technician(s) Chris Ortiz , Kathryn Loddengaard

Monitoring Well ID SP-6	PV: 5 minutes	PV: 10 minutes	PV: 15 minutes	PV: 20 minutes	PV: 25 minutes
Depth to Water (feet) *measured from top of well casing	15.98				
Depth to Bottom (feet) *measured from top of well casing	28.06				
Temp (°C)	18.4	18.4	18.7	18.7	18.6
Conductivity (mS/cm)	0.161	0.163	0.171	0.172	0.176
pH	6.78	6.60	6.38	6.33	6.10
Turbidity (NTU)	162.1	229.3	21.3	28.6	11.4
ORP	286.9	282.0	278.5	277.3	287.6
Dissolved Oxygen	4.57	4.48	4.06	4.07	3.98
Additional Notes					

PV: Purge Volume

Attachment B

Equipment Calibration Sheets



Calibration Certificate

rev 8/9/11

Work Order No.: SE-060364

Date of Service: 9/24/2018 12:00:00 AM

Unit Under Test: YSI ProDSS, 4M with Flow Cell

Asset No.: FA03152

Technician: Joe Baker

Initials: _____

Serial No: 17C105116/17D105932

TEST	Specification	Result
Standard Calibration	Pass/Fail	PASS

TEST STANDARDS USED:

DESCRIPTION	LOT NO./EXPIRATION DATE	QUANTITY
Air Saturated Water		1
7.00 mS Conductivity Standard Solution	Lot No. 8GG249 Exp. 7/19	1
pH 7.00 Standard Solution	Lot No. 8GB386 Exp. 2/20	1
pH 10.00 Standard Solution	Lot No. 8GB506 Exp. 2/20	1
pH 4.00 Standard Solution	Lot No. 8GB644 Exp. 2/20	1
ORP Standard Solution	Lot No. 18283116 Exp. 4/19	1
Turbidity Free Water		1
100 NTU YSI AMCO Turbidity Std.	Lot. 18044011 Exp. 1/19	1

TEST EQUIPMENT USED:

DESCRIPTION	ASSET NO.	SERIAL NO.	DATE OF LAST CAL	DATE CAL DUE

Test Equipment and standards are traceable to National standards.

2150 Smithtown Ave., Suite 3, Ronkonkoma, NY 11779
T: 631.580.3191 • **F:** 631.580.3195 • **W:** envirohealth.org

Preferred Plating

Instrument Calibration Log

Instrument: HACH 2100Q Portable Turbidimeter

Parameters: Turbidity

Date: _____ Time: _____ Initials: _____ Notes: _____

9/26/18 8:05 C.O.

9/27/18 8:00 C.O.

Attachment C

Laboratory Analytical Reports



587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone: 860.645.1102 • Fax: 860.645.0823

NY ANALYTICAL SERVICES PROTOCOL DATA PACKAGE

Enviroscience Consultants
PREFERRED PLATING

GCB61309

Ver 2

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Friday, December 07, 2018

Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Project ID: PREFERRED PLATING
Sample ID#s: CB61309 - CB61318, CB61531

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

Enclosed are revised Analysis Report pages. Please replace and discard the original pages. If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

A handwritten signature in black ink, appearing to read "Phyllis Shiller".

Phyllis Shiller

Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



**NY ANALYTICAL SERVICES PROTOCOL
DATA PACKAGE**

Client: Enviroscience Consultants
Project: PREFERRED PLATING
Laboratory Project: GCB61309



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06040
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NY Analytical Services Protocol Format

December 07, 2018

SDG I.D.: GCB61309

Enviroscience Consultants PREFERRED PLATING

Methodology Summary

1,4 Dioxane in Water

USEPA SW-846 Test Methods for Evaluating Solid Waste Physical/Chemical Methods 3rd Ed. Update III,
Method 8270-MOD (SIM)

EPA method 522 Ver 1 Sept 2008

Massachusetts Compendium of Analytical Procedures (CAM) Method 8270 Appendix IIB

537

DETERMINATION OF SELECTED PERFLUORINATED ALKYL ACIDS IN DRINKING WATER BY
SOLID PHASE EXTRACTION AND LIQUID CHROMATOGRAPHY/TANDEM MASS
SPECTROMETRY (LC/MS/MS)
Version 1.1 September 20009

Metals

ICP :

USEPA SW-846 Test Methods for Evaluating Solid Waste Physical/Chemical Methods 3rd Ed. Update IV,
Method 6010C.

Mercury:

USEPA SW-846 Test Methods for Evaluating Solid Waste Physical/Chemical Methods Update III, 7471



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NY Analytical Services Protocol Format

December 07, 2018

SDG I.D.: GCB61309

Enviroscience Consultants **PREFERRED PLATING**

Sample Id Cross Reference

Client Id	Lab Id	Matrix
ERT-6	CB61309	GROUND WATER
SP-5	CB61310	GROUND WATER
SP-6	CB61311	GROUND WATER
MW-6SS	CB61312	GROUND WATER
ERT-5	CB61313	GROUND WATER
ERT-2	CB61314	GROUND WATER
FIELD DUPLICATE	CB61315	GROUND WATER
ERT-3	CB61316	GROUND WATER
ERT-1	CB61317	GROUND WATER
ERT-4	CB61318	GROUND WATER
EQUIPMENT BLANK	CB61531	GROUND WATER



Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823



NY Analytical Services Protocol Format

December 07, 2018

SDG I.D.: GCB61309

Enviroscience Consultants **PREFERRED PLATING**

Laboratory Chronicle

The samples in this delivery group were received at 2.1°C.

Sample	Analysis	Collection Date	Prep Date	Analysis Date	Analyst	Hold Time Met
CB61309	1,4-dioxane	09/26/18	10/01/18	10/02/18	LA	Y
CB61309	Cadmium	09/26/18	09/28/18	09/30/18	EK	Y
CB61309	Chromium	09/26/18	09/28/18	09/30/18	EK	Y
CB61309	PFOA/PFOS - Water	09/26/18	10/21/18	10/21/18	*	Y
CB61310	Cadmium	09/26/18	09/28/18	09/30/18	EK	Y
CB61310	Chromium	09/26/18	09/28/18	09/30/18	EK	Y
CB61311	Cadmium	09/26/18	09/28/18	09/30/18	EK	Y
CB61311	Chromium	09/26/18	09/28/18	09/30/18	EK	Y
CB61312	1,4-dioxane	09/26/18	10/01/18	10/02/18	LA	Y
CB61312	Cadmium	09/26/18	09/28/18	09/30/18	EK	Y
CB61312	Chromium	09/26/18	09/28/18	09/30/18	EK	Y
CB61312	PFOA/PFOS - Water	09/26/18	10/21/18	10/21/18	*	Y
CB61313	1,4-dioxane	09/26/18	10/01/18	10/02/18	LA	Y
CB61313	Cadmium	09/26/18	09/28/18	09/30/18	EK	Y
CB61313	Chromium	09/26/18	09/28/18	09/30/18	EK	Y
CB61313	PFOA/PFOS - Water	09/26/18	10/21/18	10/21/18	*	Y
CB61314	Cadmium	09/27/18	09/28/18	09/30/18	EK	Y
CB61314	Chromium	09/27/18	09/28/18	09/30/18	EK	Y
CB61315	1,4-dioxane	09/27/18	10/01/18	10/02/18	LA	Y
CB61315	Cadmium	09/27/18	09/28/18	09/30/18	EK	Y
CB61315	Chromium	09/27/18	09/28/18	09/30/18	EK	Y
CB61315	PFOA/PFOS - Water	09/27/18	10/21/18	10/21/18	*	Y
CB61316	1,4-dioxane	09/27/18	10/01/18	10/02/18	LA	Y
CB61316	Cadmium	09/27/18	09/28/18	09/30/18	EK	Y
CB61316	Chromium	09/27/18	09/28/18	09/30/18	EK	Y
CB61316	Client MS/MSD	09/27/18	10/01/18	10/01/18		Y
CB61316	PFOA/PFOS - Water	09/27/18	10/21/18	10/21/18	*	Y
CB61317	Cadmium	09/27/18	09/28/18	09/30/18	EK	Y
CB61317	Chromium	09/27/18	09/28/18	09/30/18	EK	Y
CB61318	Cadmium	09/27/18	09/28/18	09/30/18	EK	Y
CB61318	Chromium	09/27/18	09/28/18	09/30/18	EK	Y
CB61531	1,4-dioxane	09/27/18	10/01/18	10/02/18	LA	Y



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NY Analytical Services Protocol Format

December 07, 2018

SDG I.D.: GCB61309

Enviroscience Consultants PREFERRED PLATING

CB61531	Cadmium	09/27/18	10/01/18	10/02/18	TH	Y
CB61531	Chromium	09/27/18	10/01/18	10/02/18	TH	Y
CB61531	PFOA/PFOS - Water	09/27/18	10/21/18	10/21/18	*	Y



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SDG Comments

December 07, 2018

SDG I.D.: GCB61309

Any compound that is not detected above the MDL/LOD is reported as ND on the report and is reported in the electronic deliverables (EDD) as <RL or U at the RL per state and EPA guidance.

Version 1: Analysis results minus raw data.

Version 2: Complete report with raw data.

Version 3: (Data Package Version 2) Complete report with raw data, removed Vista OL report.



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/26/18	9:15
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61309

Project ID: PREFERRED PLATING
Client ID: ERT-6

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Cadmium	0.012	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C	
Chromium	0.018	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C	
Total Metals Digestion	Completed					09/28/18	AG		
PFOA/PFOS - Water	Pending							E537	C
1,4-dioxane									
1,4-dioxane	ND	0.20	0.20	ug/l	1	10/02/18	LA	SW8270DSIM	1
QA/QC Surrogates									
% 1,4-dioxane-d8	93			%	1	10/02/18	LA	30 - 130 %	
Extraction for 1,4-Dioxane	Completed					10/01/18	S/S		

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
-----------	--------	------------	-------------	-------	----------	-----------	----	-----------

1 = This parameter is not certified by the primary accrediting authority (NY NELAC) for this matrix. NY NELAC does not offer certification for all parameters at this time.

C = This parameter is subcontracted.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

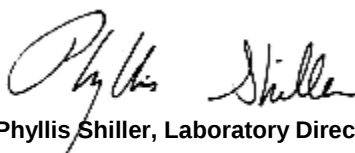
QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

*See attached

If there are any questions regarding this data, please call Phoenix Client Services.

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Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/26/18	10:17
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61310

Project ID: PREFERRED PLATING
Client ID: SP-5

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Cadmium	0.022	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C
Chromium	0.012	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C
Total Metals Digestion	Completed					09/28/18	AG	

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

Comments:

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Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



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Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/26/18	11:20
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61311

Project ID: PREFERRED PLATING
Client ID: SP-6

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Cadmium	0.034	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C
Chromium	0.052	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C
Total Metals Digestion	Completed					09/28/18	AG	

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

Comments:

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Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/26/18	12:35
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61312

Project ID: PREFERRED PLATING
Client ID: MW-6SS

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Cadmium	0.240	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C	
Chromium	0.033	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C	
Total Metals Digestion	Completed					09/28/18	AG		
PFOA/PFOS - Water	Pending							E537	C
1,4-dioxane									
1,4-dioxane	2.3	0.20	0.20	ug/l	1	10/02/18	LA	SW8270DSIM	1
QA/QC Surrogates									
% 1,4-dioxane-d8	96			%	1	10/02/18	LA	30 - 130 %	
Extraction for 1,4-Dioxane	Completed					10/01/18	S/S		

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
-----------	--------	------------	-------------	-------	----------	-----------	----	-----------

1 = This parameter is not certified by the primary accrediting authority (NY NELAC) for this matrix. NY NELAC does not offer certification for all parameters at this time.

C = This parameter is subcontracted.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

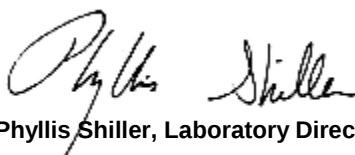
QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

*See attached

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.



Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/26/18	13:50
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61313

Project ID: PREFERRED PLATING
Client ID: ERT-5

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Cadmium	0.043	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C	
Chromium	0.070	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C	
Total Metals Digestion	Completed					09/28/18	AG		
PFOA/PFOS - Water	Pending							E537	C
1,4-dioxane									
1,4-dioxane	ND	0.20	0.20	ug/l	1	10/02/18	LA	SW8270DSIM	1
QA/QC Surrogates									
% 1,4-dioxane-d8	99			%	1	10/02/18	LA	30 - 130 %	
Extraction for 1,4-Dioxane	Completed					10/01/18	S/S		

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
-----------	--------	------------	-------------	-------	----------	-----------	----	-----------

1 = This parameter is not certified by the primary accrediting authority (NY NELAC) for this matrix. NY NELAC does not offer certification for all parameters at this time.

C = This parameter is subcontracted.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

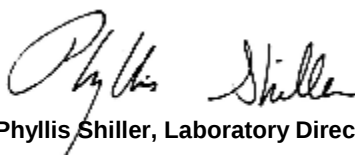
QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

*See attached

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.



Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/27/18	8:50
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61314

Project ID: PREFERRED PLATING
Client ID: ERT-2

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Cadmium	0.053	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C
Chromium	0.058	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C
Total Metals Digestion	Completed					09/28/18	AG	

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
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Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/27/18	10:15
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61315

Project ID: PREFERRED PLATING
Client ID: FIELD DUPLICATE

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Cadmium	0.009	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C	
Chromium	0.111	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C	
Total Metals Digestion	Completed					09/28/18	AG		
PFOA/PFOS - Water	Pending							E537	C
1,4-dioxane									
1,4-dioxane	ND	0.20	0.20	ug/l	1	10/02/18	LA	SW8270DSIM	1
QA/QC Surrogates									
% 1,4-dioxane-d8	97			%	1	10/02/18	LA	30 - 130 %	
Extraction for 1,4-Dioxane	Completed					10/01/18	S/S		

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
-----------	--------	------------	-------------	-------	----------	-----------	----	-----------

1 = This parameter is not certified by the primary accrediting authority (NY NELAC) for this matrix. NY NELAC does not offer certification for all parameters at this time.

C = This parameter is subcontracted.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

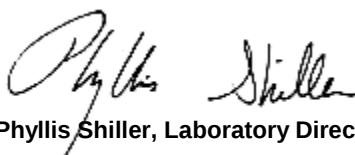
QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

*See attached

If there are any questions regarding this data, please call Phoenix Client Services.

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Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/27/18	10:15
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61316

Project ID: PREFERRED PLATING
Client ID: ERT-3

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Cadmium	0.009	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C	
Chromium	0.111	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C	
Total Metals Digestion	Completed					09/28/18	AG		
PFOA/PFOS - Water	Pending							E537	C
Client MS/MSD	Completed					10/01/18			
1,4-dioxane									
1,4-dioxane	ND	0.20	0.20	ug/l	1	10/02/18	LA	SW8270DSIM	1
QA/QC Surrogates									
% 1,4-dioxane-d8	96			%	1	10/02/18	LA	30 - 130 %	
Extraction for 1,4-Dioxane	Completed					10/01/18	S/S		

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
-----------	--------	------------	-------------	-------	----------	-----------	----	-----------

1 = This parameter is not certified by the primary accrediting authority (NY NELAC) for this matrix. NY NELAC does not offer certification for all parameters at this time.

C = This parameter is subcontracted.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

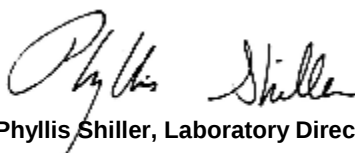
QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

*See attached

If there are any questions regarding this data, please call Phoenix Client Services.

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Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/27/18	11:40
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61317

Project ID: PREFERRED PLATING
Client ID: ERT-1

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Cadmium	0.008	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C
Chromium	0.011	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C
Total Metals Digestion	Completed					09/28/18	AG	

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
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Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: SW
Analyzed by: see "By" below

Date	Time
09/27/18	12:35
09/28/18	17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61318

Project ID: PREFERRED PLATING
Client ID: ERT-4

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Cadmium	0.009	0.004	0.0005	mg/L	1	09/30/18	EK	SW6010C
Chromium	0.086	0.001	0.001	mg/L	1	09/30/18	EK	SW6010C
Total Metals Digestion	Completed					09/28/18	AG	

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.
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Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Report

December 07, 2018

FOR: Attn: Chris Ortiz
Enviroscience Consultants
2150 Smithtown Ave
Ronkonkoma, NY 11779

Sample Information

Matrix: GROUND WATER
Location Code: ENV-SCI
Rush Request: 72 Hour
P.O.#:

Custody Information

Collected by:
Received by: CP
Analyzed by: see "By" below

Date Time
09/27/18
09/28/18 17:00

Laboratory Data

SDG ID: GCB61309
Phoenix ID: CB61531

Project ID: PREFERRED PLATING
Client ID: EQUIPMENT BLANK

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Cadmium	ND	0.001	0.0005	mg/L	1	10/02/18	TH	SW6010C	
Chromium	0.001	0.001	0.001	mg/L	1	10/02/18	TH	SW6010C	
Total Metals Digestion	Completed					10/01/18	AG		
PFOA/PFOS - Water	Pending							E537	C
<u>1,4-dioxane</u>									
1,4-dioxane	0.39	0.20	0.20	ug/l	1	10/02/18	LA	SW8270DSIM	1
<u>QA/QC Surrogates</u>									
% 1,4-dioxane-d8	99			%	1	10/02/18	LA	30 - 130 %	
Extraction for 1,4-Dioxane	Completed					10/01/18	S/S		

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
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1 = This parameter is not certified by the primary accrediting authority (NY NELAC) for this matrix. NY NELAC does not offer certification for all parameters at this time.

C = This parameter is subcontracted.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level L=Biased Low LOD=Limit of Detection MDL=Method Detection Limit1

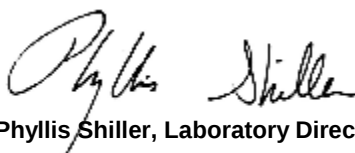
QA/QC Surrogates: Surrogates are compounds (preceded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

*See attached

If there are any questions regarding this data, please call Phoenix Client Services.

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Phyllis Shiller, Laboratory Director

December 07, 2018

Reviewed and Released by: Jon Carlson, Project Manager



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Tel. (860) 645-1102 Fax (860) 645-0823



QA/QC Report

December 07, 2018

QA/QC Data

SDG I.D.: GCB61309

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 449756 (mg/L), QC Sample No: CB61091 (CB61531)													
<u>ICP Metals - Aqueous</u>													
Cadmium	BRL	0.001	<0.001	<0.001	NC	105			104			80 - 120	20
Chromium	BRL	0.001	<0.001	<0.001	NC	105			104			80 - 120	20
QA/QC Batch 449562 (mg/L), QC Sample No: CB61316 (CB61309, CB61310, CB61311, CB61312, CB61313, CB61314, CB61315, CB61316, CB61317, CB61318)													
<u>ICP Metals - Aqueous</u>													
Cadmium	BRL	0.001	0.009	0.009	NC	108			102			80 - 120	20
Chromium	BRL	0.001	0.111	0.110	0.90	105			102			80 - 120	20



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Tel. (860) 645-1102 Fax (860) 645-0823



QA/QC Report

December 07, 2018

QA/QC Data

SDG I.D.: GCB61309

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 449743 (ug/l), QC Sample No: CB61316 (CB61309, CB61312, CB61313, CB61315, CB61316, CB61531)										
<u>1,4dioxane - Ground Water</u>										
1,4-dioxane	ND	0.25	107	102	4.8	102	107	4.8	30 - 130	20
% 1,4-dioxane-d8	102	%	97	95	2.1	96	91	5.3	30 - 130	20

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
December 07, 2018

Sample Criteria Exceedances Report

Criteria: None

GCB61309 - ENV-SCI

State: NY

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
--------	-------	-----------------	----------	--------	----	----------	----------------	-------------------

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



NY Temperature Narration

December 07, 2018

SDG I.D.: GCB61309

The samples in this delivery group were received at 2.1°C.
(Note acceptance criteria for relevant matrices is above freezing up to 6°C)



NY/NJ CHAIN OF CUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Customer: Enviroscience Consultants
Address: _____

Project: Preferred Plating
Report to: Chris Ortiz / Kathryn Loddengard
Invoice to: Judy Buenter

Project P.O.:

This section MUST be completed with Bottle Quantities.

Sampler's Signature	Client Sample - Information - Identification			Analysis Request
	Signature	Date	Time	
Matrix Code: DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe OIL=Oil B=Bulk L=Liquid	Signature	Date	Time	
	Signature	Date	Time	
	Signature	Date	Time	
	Signature	Date	Time	
	Signature	Date	Time	
	Signature	Date	Time	
	Signature	Date	Time	
	Signature	Date	Time	
	Signature	Date	Time	
	Signature	Date	Time	
PHOENIX USE ONLY				Analysis Request
SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	
601309	ERT-6	GW	9/26/18	9:15
601310	SP-5		10:17	
601311	SP-6		11:20	
601312	MW-6SS		12:35	
601313	ERT-5		1:50	
601314	ERT-2		8:50	
601315	Field Duplicate		10:15	
601316	ERT-3 Matrix Spike		10:15	
601317	ERT-3 Matrix Spike		10:15	
601318	ERT-3		10:15	
601319	ERT-1		11:40	

Relinquished by: _____	Accepted by: _____	Date: 9-28-18	Time: 9:30
Comments, Special Requirements or Regulations: <u>Category B</u>			
Turnaround: ☐ 1 Day ☐ 2 Days ☐ 3 Days ☒ 5 Days ☐ 10 Days ☐ Other * SURCHARGE APPLIES	NJ ☐ Res. Criteria ☐ Non-Res. Criteria ☐ Impact to GW Soil ☐ Cleanup Criteria ☐ Impact to GW soil screen ☐ GW Criteria	NY ☐ TOGS GW ☐ CP-51 SOIL ☐ 375SSCO ☐ Unrestricted Soil ☐ Residential Soil ☐ 375SSCO ☐ Residential ☐ 375SSCO ☐ Commercial Soil ☐ 375SSCO ☐ Industrial Soil ☐ Subpart 5 DW	Data Format ☐ Phoenix Std Report ☐ Excel ☐ PDF ☐ GIS/Key ☐ EQUIS ☐ NJ Hazsite EDD ☒ NY EZ EDD (ASP) ☐ Other
What State were samples collected? <u>NY</u>			

Sarah Bell

From: Kathryn Loddengaard <kloddengaard@envirohealth.org>
Sent: Friday, November 16, 2018 1:40 PM
To: Sarah Bell
Cc: buddy.phoenixlabs@twc.com; Inez Birbiglia
Subject: Re: PFOA GCB61309

Sarah,

Have the lab run the samples at the standard turnaround time.

Kathryn Loddengaard
Project Scientist
2150 Smithtown Avenue
Ronkonkoma, NY 11779
631-580-3191 Office
631-793-1485 Cell
kloddengaard@envirohealth.org

On Nov 16, 2018, at 12:31 PM, Kathryn Loddengaard <kloddengaard@envirohealth.org> wrote:

I am waiting to hear from the DEC I hope to have an answer shortly.

Kathryn Loddengaard
Project Scientist
2150 Smithtown Avenue
Ronkonkoma, NY 11779
631-580-3191 Office
631-793-1485 Cell
kloddengaard@envirohealth.org

On Nov 16, 2018, at 10:00 AM, Sarah Bell <sarah@phoenixlabs.com> wrote:

Just get back to me so I can tell Vista

Sarah Bell
Client Services - Project Manager
Accounts Receivable
Phoenix Environmental Laboratories
587 East Middle Turnpike
Manchester, CT 06040
Ph: 1-860-645-1102

From: Kathryn Loddengaard [<mailto:kloddengaard@envirohealth.org>]
Sent: Friday, November 16, 2018 8:50 AM
To: Sarah Bell

Cc: buddy.phoenixlabs@twc.com; Inez Birbiglia
Subject: Re: PFOA GCB61309

So Just to clarify regular price is \$385 a sample and the rush price is \$770 a sample. Correct?

On Nov 16, 2018, at 7:30 AM, Sarah Bell
<sarah@phoenixlabs.com> wrote:

Ok that is the list they gave me, so that is good,
We have two options.
Standard TAT is 22+ with the holidays.

They offered Rush TAT for for Level IV data and the NY EQUIS
EDD for a 5 day TAT is base price
\$350+\$35 for the EDD Package. + 100% mark up on both for the 5
day but that would put it out by End of November since there is the
holiday next week.

Get back to me with the TAT you wish to do.

Thanks
Sarah

Sarah Bell
Client Services - Project Manager
Accounts Receivable
Phoenix Environmental Laboratories
587 East Middle Turnpike
Manchester, CT 06040
Ph: 1-860-645-1102

From: Kathryn Loddengaard [<mailto:kloddengaard@envirohealth.org>]
Sent: Thursday, November 15, 2018 4:23 PM
To: Sarah Bell
Cc: buddy.phoenixlabs@twc.com; Inez Birbiglia
Subject: Re: PFOA GCB61309

This is the list from the NYSDEC.

Kathryn Loddengaard
Project Scientist
2150 Smithtown Avenue
Ronkonkoma, NY 11779
631-580-3191 Office
631-793-1485 Cell
kloddengaard@envirohealth.org
> On Nov 15, 2018, at 4:13 PM, Sarah Bell <sarah@phoenixlabs.com>
wrote:
>

> Kathryn
> Please confirm this is the list
>
> Sarah Bell
> Client Services - Project Manager
> Accounts Receivable
> Phoenix Environmental Laboratories
> 587 East Middle Turnpike
> Manchester, CT 06040
> Ph: 1-860-645-1102
>
> -----Original Message-----
> From: Kathryn Loddengaard [<mailto:kloddengaard@envirohealth.org>]
> Sent: Thursday, November 15, 2018 3:33 PM
> To: Sarah Bell
> Cc: buddy.phoenixlabs@twc.com; Inez Birbiglia
> Subject: Re: PFOA GCB61309
>
> Thanks,
>
> You're the best!
>
> Kathryn Loddengaard
> Project Scientist
> 2150 Smithtown Avenue
> Ronkonkoma, NY 11779
> 631-580-3191 Office
> 631-793-1485 Cell
> kloddengaard@envirohealth.org
>
>
>> On Nov 15, 2018, at 3:30 PM, Sarah Bell <sarah@phoenixlabs.com>
wrote:
>>
>> Ill let you know
>>
>> Sarah Bell
>> Client Services - Project Manager
>> Accounts Receivable
>> Phoenix Environmental Laboratories
>> 587 East Middle Turnpike
>> Manchester, CT 06040
>> Ph: 1-860-645-1102
>>
>>
>> -----Original Message-----
>> From: Kathryn Loddengaard
>> [<mailto:kloddengaard@envirohealth.org>]
>> Sent: Thursday, November 15, 2018 3:29 PM
>> To: Sarah Bell
>> Cc: buddy.phoenixlabs@twc.com; Inez Birbiglia
>> Subject: Re: PFOA GCB61309
>> Importance: High
>>
>> Ok have them rerun the samples for the full 21 list. Do you know
what turn around time we are looking at?

>>
>> Kathryn Loddengaard
>> Project Scientist
>> 2150 Smithtown Avenue
>> Ronkonkoma, NY 11779
>> 631-580-3191 Office
>> 631-793-1485 Cell
>> kloddengaard@envirohealth.org
>>
>>> On Nov 15, 2018, at 3:23 PM, Kathryn Loddengaard
<kloddengaard@envirohealth.org> wrote:
>>>
>>> I am asking the NYSDEC if samples run outside hold time are
acceptable.
>>> I'll let you know their answer as soon as I have one.
>>>
>>> Thanks
>>>
>>> Kathryn Loddengaard
>>> Project Scientist
>>> 2150 Smithtown Avenue
>>> Ronkonkoma, NY 11779
>>> 631-580-3191 Office
>>> 631-793-1485 Cell
>>> kloddengaard@envirohealth.org
>>>
>>>
>>>> On Nov 15, 2018, at 3:11 PM, Sarah Bell
<sarah@phoenixlabs.com> wrote:
>>>>
>>>> Kathryn
>>>> I talked to the OL , They can't report the 21 List unless they rerun
>>>> apparently they still have the samples. They offered to rerun them
>>>> but they are past holding time as of October and there will be
>>>> further fee's which they are getting me but I don't have to pass
>>>> along just yet. Let me know Sarah
>>>>
>>>> Sarah Bell
>>>> Client Services - Project Manager
>>>> Accounts Receivable
>>>> Phoenix Environmental Laboratories
>>>> 587 East Middle Turnpike
>>>> Manchester, CT 06040
>>>> Ph: 1-860-645-1102
>>>>
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> <1803209 analyte list.pdf>

Kathryn Loddengaard
Project Scientist
2150 Smithtown Avenue
Ronkonkoma, NY 11779
631-580-3191 Office
631-793-1485 Cell
kloddengaard@envirohealth.org

Sarah Bell

From: Kathryn Loddengaard <kloddengaard@envirohealth.org>
Sent: Monday, December 03, 2018 2:28 PM
To: Sarah Bell
Subject: Preferred Plating Lab report CB61309 - CB61318, CB61531

Sarah,

Can we have a PDF lab package that only includes Phoenix's results and cat B data?

Thanks

Kathryn Loddengaard
Project Scientist
2150 Smithtown Avenue
Ronkonkoma, NY 11779
631-580-3191 Office
631-793-1485 Cell
kloddengaard@envirohealth.org



587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone: 860.645.1102 • Fax: 860.645.0823

NY ANALYTICAL SERVICES PROTOCOL
DATA PACKAGE

Client: Enviroscience Consultants

PREFERRED PLATING

Laboratory Project: GCB61309

Metals (Water)

Ver 1

Inorganic Data Flags

- C (Concentration) Qualifiers:

- J – The reported value was obtained from a reading that was less than the Reporting Level (RL) but greater than or equal to the Instrument Detection Limit (IDL)
- U – The analyte was analyzed for but not detected at or above the IDL

- Q Qualifiers:

- E - The reported value is estimated because of the presence of interference. An explanatory note shall be included in the project narrative (if the problem applies to all samples) or on the specific FORM I-IN (if it is an isolated problem).
- M- Duplicate injection precision not met.
- N - Spiked sample recovery not within control limits.
- S - The reported value was determined by the Method of Standard Additions (MSA).
- W - Post-digestion spike for Furnace AA analysis is out of control limits (85-115%), while sample absorbance is less than 50% of spike absorbance.
- * - Duplicate analysis not within control limits.
- + - Correlation coefficient for the MSA is less than 0.995.

- M (Method) Qualifiers:

- "P" - ICP
- "A" - Flame AA
- "F" - Furnace AA
- "PM" - ICP when Microwave Digestion is used
- "AM" - Flame AA when Microwave Digestion is used
- "FM" - Furnace AA when Microwave Digestion is used
- "CV" - Manual Cold Vapor AA
- "AV" - Automated Cold Vapor AA
- "CA" - Midi-Distillation Spectrophotometric
- "AS" - Semi-Automated Spectrophotometric
- "C" - Manual Spectrophotometric
- "T" - Titrimetric
- " " - where no data have been entered
- "NR" - the analyte is not required to be analyzed
- "G" - Gravimetric

SDG: GCB61309

Metals Water Conformance / Non-Conformance Summary

Project ID / Client ID: PREFERRED PLATING, Enviroscience Consultants

Form 1 (Analysis):

The following samples/analytes were flagged for non-compliance: None.

Form 2A (Initial & Continuing Calibration Verification):

All Initial and Continuing Calibrations met criteria with the following exceptions: None.

Form 2B (CRDL):

All CRDLs met criteria with the following exceptions: None.

Form 3 (Continuing and Preparation Blanks):

All Continuing and Preparation Blanks were Non-Detect with the following exceptions: None.

Form 4 (ICP Interference Check):

All ICP Interference Checks met criteria with the following exceptions: None.

Form 5 (Matrix Spikes):

All Matrix Spikes met criteria with the following exceptions: None.
Note that the laboratory performs a MS and MSD; only the MS is reported on Form 5.

Form 6 (Duplicates):

All Sample Duplicates met criteria with the following exceptions: None.

Form 7 (Laboratory Control Samples):

All Laboratory Control Samples met criteria with the following exceptions: None.
Note that the laboratory performs a LCS and LCSD; only the LCS is reported on Form 7.

Form 9 (Serial Dilution):

All Serial Dilutions met criteria with the following exceptions:
CB61316: Chromium (13.5% [10])



10/24/18

Jon Carlson
Project Manager

Client Id

ERT-6

Lab Name: Phoenix Environmental Labs Client: ENV-SCI

Lab Code: Phoenix SDG No.: GCB61309

Lab Sample Id: CB61309 Sample Matrix: GROUND WATER

Date Received: 9/28/2018 Percent Solids: n.a.

Concentration Units (mg/L or mg/kg dry weight): mg/L

[illegible]

Client Id

SP-5

Lab Name: Phoenix Environmental Labs Client: ENV-SCI

Lab Code: Phoenix SDG No.: GCB61309

Lab Sample Id: CB61310 Sample Matrix: GROUND WATER

Date Received: 9/28/2018 Percent Solids: n.a.

Concentration Units (mg/L or mg/kg dry weight): mg/L

[illegible]

ERT-2

Lab Name: Phoenix Environmental Labs Client: ENV-SCI

Lab Code: Phoenix SDG No.: GCB61309

Lab Sample Id: CB61314 Sample Matrix: GROUND WATER

Date Received: 9/28/2018 Percent Solids: n.a.

Concentration Units (mg/L or mg/kg dry weight): mg/L

[illegible]

Client Id

EQUIPMENT BLANK

Lab Name: Phoenix Environmental Labs Client: ENV-SCI

Lab Code: Phoenix SDG No.: GCB61309

Lab Sample Id: CB61531 Sample Matrix: GROUND WATER

Date Received: 9/28/2018 Percent Solids: n.a.

Concentration Units (mg/L or mg/kg dry weight): mg/L

[illegible]

Lab Name:	<u>Phoenix Environmental Labs</u>	Client:	<u>ENV-SCI</u>
Lab Code:	<u>Phoenix</u>	SDG:	<u>GCB61309</u>
Initial Calibration Source:	<u>Absolute Standard (CVS)</u>		
Continuing Calibration Source:	<u>Inorganic Ventures (IPC1+2)</u>		
Instrument:	<u>BLUE</u>		

[illegible]

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Lab Name:	<u>Phoenix Environmental Labs</u>	Client:	<u>ENV-SCI</u>
Lab Code:	<u>Phoenix</u>	SDG:	<u>GCB61309</u>
Initial Calibration Source:	<u>Absolute Standard (CVS)</u>		
Continuing Calibration Source:	<u>Inorganic Ventures (IPC1+2)</u>		
Instrument:	<u>BLUE</u>		

[illegible]

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Lab Name:	<u>Phoenix Environmental Labs</u>	Client:	<u>ENV-SCI</u>
Lab Code:	<u>Phoenix</u>	SDG:	<u>GCB61309</u>
Initial Calibration Source:	<u>Absolute Standard (CVS)</u>		
Continuing Calibration Source:	<u>Inorganic Ventures (IPC1+2)</u>		
Instrument:	<u>BLUE</u>		

[illegible]

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Lab Name:	<u>Phoenix Environmental Labs</u>	Client:	<u>ENV-SCI</u>
Lab Code:	<u>Phoenix</u>	SDG:	<u>GCB61309</u>
Initial Calibration Source:	<u>Absolute Standard (CVS)</u>		
Continuing Calibration Source:	<u>Inorganic Ventures (IPC1+2)</u>		
Instrument:	<u>BLUE</u>		

[illegible]

Page 58 of 217

Lab Name: Phoenix Environmental Labs Client: ENV-SCI

Lab Code: Phoenix SDG: GCB61309

Instrument: BLUE

CRDL Standard Source: Environmental Express

Concentration Units: mg/L

[illegible]

FORM II - IN (PART 2) - 2

Lab Name: Phoenix Environmental Labs **Client:** ENV-SCI
Lab Code: Phoenix **SDG No.:** GCB61309
Preparation Blank Matrix (soil/water): CB61316 (Water)
Preparation Blank Concentration Units (ug/L or mg/kg): ug/L
Instrument: BLUE

FORM III - IN

3
BLANKS

Client: ENV-SCI

SDG No.: GCB61309

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Instrument: BLUE

[illegible]

FORM III - IN

3
BLANKS

Client: ENV-SCI

SDG No.: GCB61309

Preparation Blank Concentration Units (ug/L or mg/kg): ug/L

Instrument: BLUE

[illegible]

FORM III - IN

Lab Name: Phoenix Environmental Labs Client: ENV-SCI
Lab Code: Phoenix SDG No.: GCB61309
Preparation Blank Matrix (soil/water): _____
Preparation Blank Concentration Units (ug/L or mg/kg): _____
Instrument: BLUE

FORM III - IN

ICS Source: Inorganic Ventures, Inc.

Concentration Units: mg/L

[illegible]

ICS Source: Inorganic Ventures, Inc.

Concentration Units: mg/L

[illegible]

Client: ENV-SCI

SDG No.: GCB61309

Sample Matrix: GROUND WATER

Percent Solids: n.a.

Concentration Units (mg/L or mg/kg dry weight): mg/L

* No criteria if either result is less than 5x the reporting level.

Client: ENV-SCI

SDG No.: GCB61309

Sample Matrix: GROUND WATER

Percent Solids: n.a.

Concentration Units (mg/L or mg/kg dry weight): mg/L

* No criteria if either result is less than 5x the reporting level.

Client: ENV-SCI

SDG No.: GCB61309

QC Batch Id: 449562

QC Sample Id: CB61316

[illegible]

Client: ENV-SCI

SDG No.: GCB61309

QC Batch Id: 449756

QC Sample Id: CB61091

[illegible]

FORM VII - IN

Client Id

ERT-3

Lab Name: Phoenix Environmental Labs

Client: ENV-SCI

Lab Code: Phoenix

SDG No.: GCB61309

Lab Sample Id: CB61316

Sample Matrix: GROUND WATER

Date Received: 9/28/2018

Percent Solids: n.a.

Concentration Units (mg/L or mg/kg dry weight): mg/L

[illegible]

* No criteria (NC) if either result is less than 5x the reporting level.

Client: ENV-SCI

SDG No.: GCB61309

Date: 03/16/17

[illegible]

11A

Lab Name: Phoenix Environmental Labs

Client: ENV-SCI

Lab Code: Phoenix

SDG No.: GCB61309

Instrument: BLUE

[illegible]

Comments:

Client: ENV-SCI

SDG No.: GCB61309

Instrument: Blue

[illegible]

Comments:

A linear range study is performed annually. The concentrations above reflect the highest calibration point which is lower than the linear range concentration.

FORM XII - IN

Client: ENV-SCI

SDG No.: GCB61309

Batch Id: 449562

[illegible]

Client: ENV-SCI

SDG No.: GCB61309

Batch Id: 449756

[illegible]

14
ANALYSIS RUN LOG

Lab Name: Phoenix Environmental Labs

Client: ENV-SCI

Lab Code: Phoenix

SDG: GCB61309

Instrument: BLUE

Method: P (ICP)

Start Date: 09/30/18

End Date: 10/01/18

Lab Sample Id	Client Sample Id	D/F	Time	Analytes																	
				C D	C R																
ICV		1	09:09	X	X																
ICB		1	09:32	X	X																
I-CRDL		1	20:52	X	X																
I-ICSA		1	20:57	X	X																
I-ICSAB		1	21:00	X	X																
CCV		1	22:01	X	X																
CCB		1	22:04	X	X																
-		1	22:07																		
-		1	22:09																		
-		1	22:12																		
-		1	22:15																		
-		1	22:17																		
CB61316 - BLK	ERT-3 - BLK	1	22:20	X	X																
CB61316 - LCS	ERT-3 - LCS	1	22:23	X	X																
CB61316	ERT-3	1	22:25	X	X																
CB61316 - DUP	ERT-3 - DUP	1	22:28	X	X																
CB61316 - MS	ERT-3 - MS	1	22:31	X	X																
CCV		1	22:33	X	X																
CCB		1	22:36	X	X																
CB61316 - DIL	ERT-3 - DIL	5	22:39	X	X																
CB61316 - PS	ERT-3 - PS	1	22:41	X	X																
-		1	22:44																		
-		1	22:46																		
-		1	22:49																		
CB61309	ERT-6	1	22:52	X	X																
CB61310	SP-5	1	22:54	X	X																
CB61311	SP-6	1	22:57	X	X																
CB61312	MW-6SS	1	23:00	X	X																
CB61313	ERT-5	1	23:02	X	X																
CCV		1	23:05	X	X																
CCB		1	23:08	X	X																
CB61314	ERT-2	1	23:10	X	X																
CB61315	FIELD DUPLICATE	1	23:13	X	X																
CB61317	ERT-1	1	23:16	X	X																
CB61318	ERT-4	1	23:18	X	X																
-		1	23:21																		
-		1	23:24																		
-		1	23:26																		

FORM XIV - IN - 1

Client:

SDG: GCB61309

Method: P (ICP)

End Date: 10/01/18

[illegible]

14
ANALYSIS RUN LOG

Lab Name: Phoenix Environmental Labs

Client: _____

Lab Code: Phoenix

SDG: _____ GCB61309

Instrument: BLUE

Method: P (ICP)

Start Date: 10/02/18

End Date: 10/02/18

Lab Sample Id	Client Sample Id	D/F	Time	Analytes																			
				C D	C R																		
ICV		1	12:41	X	X																		
ICB		1	12:49	X	X																		
I-CRDL		1	17:31	X	X																		
I-ICSA		1	17:37	X	X																		
I-ICSAB		1	17:39	X	X																		
CCB		1	20:29	X	X																		
CCV		1	20:58	X	X																		
-		1	21:04																				
-		1	21:06																				
-		1	21:09																				
-		1	21:12																				
CB61091 - BLK	CB61091 - BLK	1	21:14	X	X																		
CB61091 - LCS	CB61091 - LCS	1	21:17	X	X																		
-		1	21:20																				
CB61091 - DUP	CB61091 - DUP	1	21:22	X	X																		
CB61091 - MS	CB61091 - MS	1	21:25	X	X																		
CB61091 - DIL	CB61091 - DIL	5	21:28	X	X																		
CCV		1	21:30	X	X																		
CCB		1	21:33	X	X																		
CB61091 - PS	CB61091 - PS	1	21:36	X	X																		
-		1	21:38																				
-		1	21:41																				
-		1	21:44																				
-		1	21:46																				
-		1	21:49																				
-		1	21:52																				
-		1	21:54																				
-		1	21:57																				
-		1	22:00																				
CCV		1	22:02	X	X																		
CCB		1	22:05	X	X																		
-		1	22:08																				
-		1	22:10																				
-		1	22:13																				
-		1	22:16																				
CB61531	EQUIPMENT BLANK	1	22:18	X	X																		
-		1	22:21																				
-		1	22:24																				

FORM XIV - IN - 3

Client:

SDG: GCB61309

Method: P (ICP)

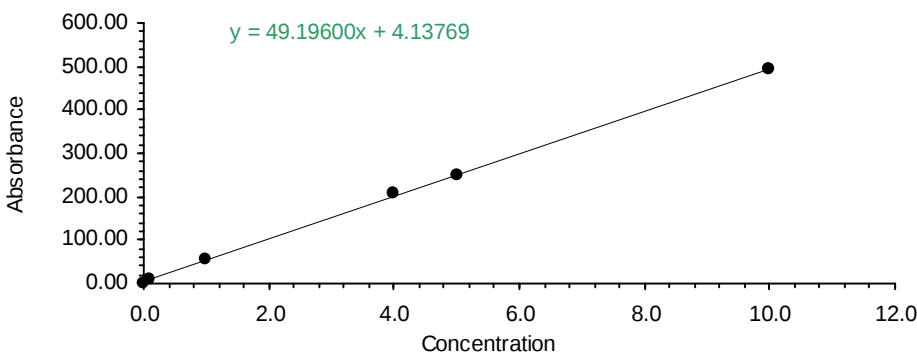
End Date: 10/02/18

Analytes

HG Data Transfer Log

Analyst: RS

File: P:\avalon\dailycopy\results\2018\100118hg.txt

Sample Date	Sample	Type	Pk Height	Inst Factor	Raw Result	%Sol	Result	RL	Acode																												
Calibration: (Linear Calculated Intercept)			Correlation Coefficient: 0.999847			Slope: 49.19600		Intercept: 4.13769																													
						<table><tr><th>Id</th><th>Signal</th><th>Conc</th><th>Calc Conc</th></tr><tr><td>STD1</td><td>0.8535</td><td>0.0</td><td>-0.0668</td></tr><tr><td>STD2</td><td>8.1186</td><td>0.1</td><td>0.0809</td></tr><tr><td>STD3</td><td>53.6357</td><td>1.0</td><td>1.0061</td></tr><tr><td>STD4</td><td>206.8595</td><td>4.0</td><td>4.1207</td></tr><tr><td>STD5</td><td>250.8756</td><td>5.0</td><td>5.0154</td></tr><tr><td>STD6</td><td>493.3228</td><td>10.0</td><td>9.9436</td></tr></table>				Id	Signal	Conc	Calc Conc	STD1	0.8535	0.0	-0.0668	STD2	8.1186	0.1	0.0809	STD3	53.6357	1.0	1.0061	STD4	206.8595	4.0	4.1207	STD5	250.8756	5.0	5.0154	STD6	493.3228	10.0	9.9436
Id	Signal	Conc	Calc Conc																																		
STD1	0.8535	0.0	-0.0668																																		
STD2	8.1186	0.1	0.0809																																		
STD3	53.6357	1.0	1.0061																																		
STD4	206.8595	4.0	4.1207																																		
STD5	250.8756	5.0	5.0154																																		
STD6	493.3228	10.0	9.9436																																		
10/01/18 7:45 AM	STD1	CAL	0.8535	----	0.0000				-----																												
10/01/18 7:48 AM	STD2	CAL	8.1186	----	0.1000				-----																												
10/01/18 7:50 AM	STD3	CAL	53.6357	----	1.0000				-----																												
10/01/18 7:52 AM	STD4	CAL	206.8595	----	4.0000				-----																												
10/01/18 7:54 AM	STD5	CAL	250.8756	----	5.0000				-----																												
10/01/18 7:57 AM	STD6	CAL	493.3228	----	10.0000				-----																												
10/01/18 8:01 AM	CCAL	NOTAG	213.3571	----	4.2528		106		-----																												
10/01/18 8:04 AM	CCAL	NOTAG	211.7833	----	4.2208		106		-----																												
10/01/18 8:07 AM	CCAL	NOTAG	200.9805	----	4.0012		100		-----																												
10/01/18 8:11 AM	BLANK	NOTAG	3.8791	----	-0.0053				-----																												
10/01/18 8:13 AM	CRA1	NOTAG	13.4268	----	0.1888				-----																												
10/01/18 8:16 AM	CB59733 BLK	HGWM	1.6262	1.2500	-0.0638		BRL	0.2	B_HG-WM																												
10/01/18 8:18 AM	CB59733 LCS	HGWM	85.6163	1.2500	2.0703		82.8		L_HG-WM																												
10/01/18 8:21 AM	CB60041	TCLP	1.4163	1.2500	-0.0691		BRL	0.2	TCLPHG																												
10/01/18 8:23 AM	CB60042	TCLP	0.6512	1.2500	-0.0886		BRL	0.2	TCLPHG																												
10/01/18 8:25 AM	CB60264	TCLP	0.9488	1.2500	-0.0810		BRL	0.2	TCLPHG																												
10/01/18 8:27 AM	CB60265	TCLP	2.1023	1.2500	-0.0517		BRL	0.2	TCLPHG																												
10/01/18 8:29 AM	CB60266	TCLP	2.7415	1.2500	-0.0355		BRL	0.2	TCLPHG																												
10/01/18 8:32 AM	CB60267	TCLP	2.3357	1.2500	-0.0458		BRL	0.2	TCLPHG																												
10/01/18 8:34 AM	CB60268	TCLP	1.9372	1.2500	-0.0559		BRL	0.2	TCLPHG																												
10/01/18 8:36 AM	CB60269	TCLP	1.4954	1.2500	-0.0671		BRL	0.2	TCLPHG																												
10/01/18 8:38 AM	CB59732	HGWM	10.6116	1.2500	0.1645		BRL	0.2	HG-WM																												
10/01/18 8:40 AM	CB59733	HGWM	3.1674	1.2500	-0.0247		BRL	0.2	HG-WM																												
10/01/18 8:43 AM	CCAL	NOTAG	184.9048	----	3.6744		91.9		-----																												
10/01/18 8:45 AM	BLANK	NOTAG	1.2595	----	-0.0585				-----																												
10/01/18 8:47 AM	CB59734	HGWM	13.2047	1.2500	0.2304		0.230	0.2	HG-WM																												
10/01/18 8:49 AM	CB59963	TCLP	2.8050	50.0000	-1.3545		BRL	8	TCLPHG																												
10/01/18 8:52 AM	CB59964	TCLP	0.9619	50.0000	-3.2277		BRL	8	TCLPHG																												
10/01/18 8:54 AM	CB59965	TCLP	2.2902	50.0000	-1.8776		BRL	8	TCLPHG																												
10/01/18 8:56 AM	CB59966	TCLP	1.9786	50.0000	-2.1944		BRL	8	TCLPHG																												
10/01/18 8:58 AM	CB59967	TCLP	2.3524	1.2500	-0.0454		BRL	0.2	TCLPHG																												
10/01/18 9:00 AM	CB60005	TCLP	2.5558	1.2500	-0.0402		BRL	0.2	TCLPHG																												
10/01/18 9:03 AM	CB60230	HGWM	1.7070	1.2500	-0.0618		BRL	0.2	HG-WM																												
10/01/18 9:05 AM	CB61415	HGWM	1.9364	1.2500	-0.0559		BRL	0.2	HG-WM																												
10/01/18 9:07 AM	CB61269	HGWM	5.4429	1.2500	0.0332		BRL	0.2	HG-WM																												
10/01/18 9:09 AM	CB59733 DUP	HGWM	2.0214	1.2500	-0.0538		BRL	0.2	D_HG-WM																												
10/01/18 9:11 AM	CB59733 MS	HGWM	77.2857	1.2500	1.8586		74.3		R_HG-WM																												
10/01/18 9:14 AM	CCAL	NOTAG	178.5238	----	3.5447		88.6		-----																												
10/01/18 9:17 AM	CCAL	NOTAG	200.4744	----	3.9909		99.8		-----																												
10/01/18 9:20 AM	BLANK	NOTAG	3.3071	----	-0.0169				-----																												

Aqueous raw results reported in ug/L, soil raw results reported in mg/kg (wet).

HG Data Transfer Log

Analyst: RS

File: P:\avalon\dailycopy\results\2018\100118hg.txt

Sample Date	Sample	Type	Pk Height	Inst Factor	Raw Result	%Sol	Result	RL	Acode
10/01/18 9:23 AM	CB60796 BLK (2X)	HGSM	1.1071	0.1176	-0.0072		BRL	0.02	B_HG-SM
10/01/18 9:25 AM	CB60796 LCS (20X)	HGSM	436.7024	1.1594	10.1944		88.6		L_HG-SM
10/01/18 9:28 AM	CB60796 LCSD (20X)	HGSM	438.8419	1.1594	10.2448		89.1		L4HG-SM
10/01/18 9:30 AM	CB60570 (2X)	HGSM	4.8767	0.1290	0.0019	85	BRL	0.03	HG-SM
10/01/18 9:32 AM	CB60586 (2X)	HGSM	24.1643	0.1143	0.0465	88	0.05	0.03	HG-SM
10/01/18 9:34 AM	CB60587 (2X)	HGSM	37.2881	0.1127	0.0759	88	0.09	0.03	HG-SM
10/01/18 9:36 AM	CB60588 (2X)	HGSM	8.7190	0.1231	0.0115	88	BRL	0.03	HG-SM
10/01/18 9:39 AM	CB60796 (2X)	HGSM	23.1619	0.1270	0.0491	86	0.06	0.03	HG-SM
10/01/18 9:41 AM	CB61035 (2X)	HGSM	15.9857	0.1311	0.0316	94	0.03	0.03	HG-SM
10/01/18 9:43 AM	CB61052 (2X)	HGSM	18.9405	0.1290	0.0388	90	0.04	0.03	HG-SM
10/01/18 9:45 AM	CB61061 (2X)	HGSM	3.8714	0.1356	-0.0007	88	BRL	0.03	HG-SM
10/01/18 9:47 AM	CB61324 (10X)	HGSM	33.2048	0.6250	0.3693	83	0.44	0.15	HG-SM
10/01/18 9:50 AM	CB61325 (10X)	HGSM	12.4326	0.5714	0.0963	81	BRL	0.14	HG-SM
10/01/18 9:52 AM	CCAL	NOTAG	212.4122	----	4.2336		106		-----
10/01/18 9:54 AM	BLANK	NOTAG	1.9049	----	-0.0454				-----
10/01/18 9:56 AM	CB61326 (10X)	HGSM	9.5409	0.5882	0.0646	82	BRL	0.14	HG-SM
10/01/18 9:59 AM	CB61327 (10X)	HGSM	8.9909	0.6452	0.0636	85	BRL	0.15	HG-SM
10/01/18 10:01 AM	CB61328 (10X)	HGSM	12.2659	0.5714	0.0944	81	BRL	0.14	HG-SM
10/01/18 10:03 AM	CB61329 (10X)	HGSM	19.6773	0.5556	0.1755	85	0.21	0.13	HG-SM
10/01/18 10:05 AM	CB61330 (10X)	HGSM	18.0455	0.6349	0.1795	90	0.20	0.14	HG-SM
10/01/18 10:07 AM	CB61510 (2X)	HGSM	24.0814	0.1250	0.0507	87	0.06	0.03	HG-SM
10/01/18 10:10 AM	CB61511 (2X)	HGSM	17.4419	0.1194	0.0323	87	0.04	0.03	HG-SM
10/01/18 10:12 AM	CB61512 (2X)	HGSM	17.0864	0.1333	0.0351	87	0.04	0.03	HG-SM
10/01/18 10:14 AM	CB61513 (2X)	HGSM	19.0841	0.1176	0.0357	88	0.04	0.03	HG-SM
10/01/18 10:16 AM	CB61514 (2X)	HGSM	19.0364	0.1194	0.0362	72	0.05	0.03	HG-SM
10/01/18 10:18 AM	CB60796 DUP (2X)	HGSM	21.0591	0.1231	0.0423	86	0.05	0.03	D_HG-SM
10/01/18 10:21 AM	CB60796 MS (2X)	HGSM	83.4232	0.1231	0.1984	86	97.0		R_HG-SM
10/01/18 10:23 AM	CCAL	NOTAG	202.4000	----	4.0301		101		-----
10/01/18 10:25 AM	BLANK	NOTAG	2.4786	----	-0.0337				-----
10/01/18 10:28 AM	CB60556 BLK (2X)	HGSM	2.3186	0.1176	-0.0044		BRL	0.02	B_HG-SM
10/01/18 10:31 AM	CB60556 LCS (20X)	HGSM	438.6070	1.2121	10.7047		93.1		L_HG-SM
10/01/18 10:33 AM	CB60556 LCSD (20X)	HGSM	425.6744	1.2698	10.8807		94.6		L4HG-SM
10/01/18 10:35 AM	CB39295 (2X)	HGSM	414.7396	0.1250	1.0433	80	1.30	0.03	HG-SM
10/01/18 10:37 AM	CB39296 (2X)	HGSM	1.4930	0.1333	-0.0072	76	BRL	0.04	HG-SM
10/01/18 10:39 AM	CB60005 (2X)	HGSM	47.7767	0.1176	0.1044	65	0.16	0.04	HG-SM
10/01/18 10:42 AM	CB60212 (2X)	HGSM	73.9488	0.1026	0.1455	87	0.17	0.02	HG-SM
10/01/18 10:44 AM	CB60556 (2X)	HGSM	24.4366	0.1176	0.0485	90	0.05	0.03	HG-SM
10/01/18 10:46 AM	CB60603 (2X)	HGSM	2.8837	0.1311	-0.0033	90	BRL	0.03	HG-SM
10/01/18 10:48 AM	CB61066 (2X)	HGSM	20.6465	0.1290	0.0433	93	0.05	0.03	HG-SM
10/01/18 10:51 AM	CB61114 (2X)	HGSM	2.1186	0.1538	-0.0063	97	BRL	0.03	HG-SM
10/01/18 10:53 AM	CB61115 (2X)	HGSM	2.4535	0.1212	-0.0042	100	BRL	0.02	HG-SM
10/01/18 10:55 AM	CB61116 (2X)	HGSM	18.9442	0.1311	0.0395	85	0.05	0.03	HG-SM
10/01/18 10:57 AM	CCAL	NOTAG	202.1857	----	4.0257		101		-----
10/01/18 10:59 AM	BLANK	NOTAG	0.7561	----	-0.0687				-----
10/01/18 11:02 AM	CB61117 (2X)	HGSM	17.9561	0.1290	0.0362	90	0.04	0.03	HG-SM
10/01/18 11:04 AM	CB61331 (2X)	HGSM	54.5325	0.1311	0.1343	81	0.17	0.03	HG-SM
10/01/18 11:06 AM	CB61332 (2X)	HGSM	70.2558	0.1212	0.1629	87	0.19	0.03	HG-SM
10/01/18 11:08 AM	CB61333 (2X)	HGSM	80.1512	0.1311	0.2026	82	0.25	0.03	HG-SM
10/01/18 11:11 AM	CB61334 (2X)	HGSM	68.6256	0.1231	0.1613	85	0.19	0.03	HG-SM
10/01/18 11:13 AM	CB61338 (2X)	HGSM	35.3953	0.1159	0.0737	86	0.09	0.03	HG-SM
10/01/18 11:15 AM	CB61339 (2X)	HGSM	51.6136	0.1333	0.1287	84	0.15	0.03	HG-SM
10/01/18 11:17 AM	CB61340 (2X)	HGSM	12.8293	0.1270	0.0224	89	BRL	0.03	HG-SM
10/01/18 11:19 AM	CB61341 (2X)	HGSM	17.0605	0.1270	0.0334	85	0.04	0.03	HG-SM

HG Data Transfer Log

Analyst: RS

File: P:\avalon\dailycopy\results\2018\100118hg.txt

Sample Date	Sample	Type	Pk Height	Inst Factor	Raw Result	%Sol	Result	RL	Acode
10/01/18 11:22 AM	CB61491 (2X)	HGSM	3.3372	0.1250	-0.0020	91	BRL	0.03	HG-SM
10/01/18 11:24 AM	CB60556 DUP (2X)	HGSM	29.5116	0.1250	0.0645	90	0.07	0.03	D_HG-SM
10/01/18 11:26 AM	CB60556 MS (2X)	HGSM	95.6256	0.1159	0.2156	90	115		R_HG-SM
10/01/18 11:28 AM	CCAL	NOTAG	204.1881	----	4.0664		102		-----
10/01/18 11:30 AM	BLANK	NOTAG	2.0143	----	-0.0432				-----
10/01/18 11:34 AM	CB61091 BLK	HGWM	1.1591	1.2500	-0.0757		BRL	0.2	B_HG-WM
10/01/18 11:36 AM	CB61091 LCS	HGWM	87.2795	1.2500	2.1125		84.5		L_HG-WM
10/01/18 11:39 AM	CB60578	HGWM	0.7000	1.2500	-0.0873		BRL	0.2	HG-WM
10/01/18 11:41 AM	CB60779	HGWM	2.4833	1.2500	-0.0420		BRL	0.2	HG-WM
10/01/18 11:43 AM	CB60780	HGWM	1.5905	1.2500	-0.0647		BRL	0.2	HG-WM
10/01/18 11:45 AM	CB60781	HGWM	1.4163	1.2500	-0.0691		BRL	0.2	HG-WM
10/01/18 11:48 AM	CB60782	HGWM	1.8512	1.2500	-0.0581		BRL	0.2	HG-WM
10/01/18 11:50 AM	CB60783	HGWM	1.0791	1.2500	-0.0777		BRL	0.2	HG-WM
10/01/18 11:52 AM	CB61031	HGWM	2.5023	1.2500	-0.0416		BRL	0.2	HG-WM
10/01/18 11:54 AM	CB61089	HGWM	2.5159	1.2500	-0.0412		BRL	0.2	HG-WM
10/01/18 11:56 AM	CB61090	HGWM	4.9095	1.2500	0.0196		BRL	0.2	HG-WM
10/01/18 11:59 AM	CB61091	HGWM	1.5881	1.2500	-0.0648		BRL	0.2	HG-WM
10/01/18 12:01 PM	CCAL	NOTAG	203.1048	----	4.0444		101		-----
10/01/18 12:03 PM	BLANK	NOTAG	1.0857	----	-0.0620				-----
10/01/18 12:10 PM	CB61144	HGWM	3.2535	1.2500	-0.0225		BRL	0.2	HG-WM
10/01/18 12:12 PM	CB61244	HGWM	3.0857	1.2500	-0.0267		BRL	0.2	HG-WM
10/01/18 12:15 PM	CB61245	HGWM	2.3524	1.2500	-0.0454		BRL	0.2	HG-WM
10/01/18 12:17 PM	CB61246	HGWM	0.9163	1.2500	-0.0819		BRL	0.2	HG-WM
10/01/18 12:19 PM	CB61247	HGWM	1.7488	1.2500	-0.0607		BRL	0.2	HG-WM
10/01/18 12:21 PM	CB61248	HGWM	5.9714	1.2500	0.0466		BRL	0.2	HG-WM
10/01/18 12:23 PM	CB61411	HGWM	1.8667	1.2500	-0.0577		BRL	0.2	HG-WM
10/01/18 12:26 PM	CB61412	HGWM	1.7310	1.2500	-0.0612		BRL	0.2	HG-WM
10/01/18 12:28 PM	CB61414	HGWM	1.9167	1.2500	-0.0564		BRL	0.2	HG-WM
10/01/18 12:30 PM	CB61091 DUP	HGWM	3.6952	1.2500	-0.0112		BRL	0.2	D_HG-WM
10/01/18 12:32 PM	CB61091 MS	HGWM	91.6333	1.2500	2.2231		88.9		R_HG-WM
10/01/18 12:34 PM	CCAL	NOTAG	208.4810	----	4.1537		104		-----
10/01/18 12:37 PM	BLANK	NOTAG	2.8857	----	-0.0254				-----
10/01/18 12:40 PM	CB59523 BLK	HGWM	5.8698	1.2500	0.0440		BRL	0.2	B_HG-WM
10/01/18 12:45 PM	CB59523 LCS	HGWM	102.0186	1.2500	2.4870		99.5		L_HG-WM
10/01/18 12:47 PM	CB39560	HGDW	1.4227	1.2500	-0.0690		BRL	0.2	HG-DW
10/01/18 12:49 PM	CB59513	HGDW	2.7409	1.2500	-0.0355		BRL	0.2	HG-DW
10/01/18 12:51 PM	CB59523	HGDW	4.9682	1.2500	0.0211		BRL	0.2	HG-DW
10/01/18 12:53 PM	CB59524	HGDW	1.5364	1.2500	-0.0661		BRL	0.2	HG-DW
10/01/18 12:56 PM	CB59525	HGDW	2.5000	1.2500	-0.0416		BRL	0.2	HG-DW
10/01/18 12:58 PM	CB59526	HGDW	3.2477	1.2500	-0.0226		BRL	0.2	HG-DW
10/01/18 1:00 PM	CB59527	HGDW	1.7558	1.2500	-0.0605		BRL	0.2	HG-DW
10/01/18 1:02 PM	CB59758	HGDW	2.6256	1.2500	-0.0384		BRL	0.2	HG-DW
10/01/18 1:05 PM	CCAL	NOTAG	207.0238	----	4.1240		103		-----
10/01/18 1:07 PM	BLANK	NOTAG	1.1000	----	-0.0617				-----
10/01/18 1:09 PM	CB59763	HGDW	5.5841	1.2500	0.0368		BRL	0.2	HG-DW
10/01/18 1:11 PM	CB59878	HGDW	1.3227	1.2500	-0.0715		BRL	0.2	HG-DW
10/01/18 1:13 PM	CB60022 MS	HGDW	101.2886	1.2500	2.4685		98.7		R_HG-WM
10/01/18 1:16 PM	CB60003	HGDW	2.0209	1.2500	-0.0538		BRL	0.2	HG-DW
10/01/18 1:18 PM	CB60004	HGDW	2.2814	1.2500	-0.0472		BRL	0.2	HG-DW
10/01/18 1:20 PM	CB60021	HGDW	1.8571	1.2500	-0.0579		BRL	0.2	HG-DW
10/01/18 1:22 PM	CB60022	HGDW	2.9070	1.2500	-0.0313		BRL	0.2	HG-DW
10/01/18 1:25 PM	CB60356	HGDW	3.0907	1.2500	-0.0266		BRL	0.2	HG-DW
10/01/18 1:27 PM	CB60357	HGDW	4.9954	1.2500	0.0218		BRL	0.2	HG-DW

HG Data Transfer Log

Analyst: RS

File: P:\avalon\dailycopy\results\2018\100118hg.txt

Sample Date	Sample	Type	Pk Height	Inst Factor	Raw Result	%Sol	Result	RL	Acode
10/01/18 1:29 PM	CB60358	HGDW	2.7837	1.2500	-0.0344		BRL	0.2	HG-DW
10/01/18 1:31 PM	CB59523 DUP	HGWM	4.6628	1.2500	0.0133		BRL	0.2	D_HG-WM
10/01/18 1:34 PM	CB59523 MS	HGWM	92.9093	1.2500	2.2556		90.2		R_HG-WM
10/01/18 1:36 PM	CCAL	NOTAG	200.9119	----	3.9998		100		-----
10/01/18 1:38 PM	BLANK	NOTAG	0.9262	----	-0.0653				-----
10/01/18 1:41 PM	CB61413 BLK	HGWM	0.9195	1.2500	-0.0818		BRL	0.2	B_HG-WM
10/01/18 1:43 PM	CB61413 LCS	HGWM	93.0116	1.2500	2.2582		90.3		L_HG-WM
10/01/18 1:46 PM	CB60559	TCLP	2.3581	1.2500	-0.0452		BRL	0.2	TCLPHG
10/01/18 1:48 PM	CB60602	TCLP	2.0419	1.2500	-0.0533		BRL	0.2	TCLPHG
10/01/18 1:50 PM	CB60605	TCLP	1.5279	1.2500	-0.0663		BRL	0.2	TCLPHG
10/01/18 1:52 PM	CB60796	TCLP	4.2047	1.2500	0.0017		BRL	0.2	TCLPHG
10/01/18 1:55 PM	CB61023	TCLP	1.1024	2.5000	-0.1542		BRL	0.4	TCLPHG
10/01/18 1:57 PM	CB61052	TCLP	4.6659	1.2500	0.0134		BRL	0.2	TCLPHG
10/01/18 1:59 PM	CB61061	TCLP	4.8953	1.2500	0.0193		BRL	0.2	TCLPHG
10/01/18 2:01 PM	CB61066	TCLP	1.2884	1.2500	-0.0724		BRL	0.2	TCLPHG
10/01/18 2:03 PM	CCAL	NOTAG	200.1905	----	3.9851		99.6		-----
10/01/18 2:06 PM	BLANK	NOTAG	1.8119	----	-0.0473				-----
10/01/18 2:08 PM	CB61067	TCLP	5.5000	1.2500	0.0346		BRL	0.2	TCLPHG
10/01/18 2:10 PM	CB61114	TCLP	1.9186	25.0000	-1.1277		BRL	4	TCLPHG
10/01/18 2:12 PM	CB61319	TCLP	1.7886	1.2500	-0.0597		BRL	0.2	TCLPHG
10/01/18 2:14 PM	CB61413	HGWM	5.8341	1.2500	0.0431		BRL	0.2	HG-WM
10/01/18 2:17 PM	CB61498	TCLP	1.1512	1.2500	-0.0759		BRL	0.2	TCLPHG
10/01/18 2:19 PM	CB61413 DUP	HGWM	2.9405	1.2500	-0.0304		BRL	0.2	D_HG-WM
10/01/18 2:21 PM	CB61413 MS	HGWM	86.9095	1.2500	2.1031		84.1		R_HG-WM
10/01/18 2:23 PM	CCAL	NOTAG	203.1927	----	4.0462		101		-----
10/01/18 2:26 PM	BLANK	NOTAG	1.4595	----	-0.0544				-----

Lab Id: **ICV**Measure Date: **9/30/2018 9:09:57 AM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2481	0.9890	1.020	0.9993	1.022	1.016	0.9945
	0.0024	0.0056	0.0057	0.0045	0.0136	0.0116	0.0060
	0.9	0.6	0.6	0.4	1.3	1.1	0.6
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.004	1.028	0.9994	0.9909	1.024	5.057	1.019
	0.0081	0.0103	0.0133	0.0083	0.0116	0.1243	0.0087
	0.8	1.0	1.3	0.8	1.1	2.5	0.9
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.000	0.9945	5.117	1.030	1.020	1.014	1.002
	0.0079	0.0110	0.1195	0.0087	0.0032	0.0111	0.0055
	0.8	1.1	2.3	0.8	0.3	1.1	0.5
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	1.008	0.9942	1.017		0.9971	0.2542	0.9989
	0.0104	0.0138	0.0055		0.0090	0.0014	0.0048
	1.0	1.4	0.5		0.9	0.6	0.5

Lab Id: **ICB**Measure Date: **9/30/2018 9:32:28 AM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag -0.0004	Al # -0.0005	As -0.0016	B -0.0009	Ba -0.0008	Be -0.0007	Ca -0.0008
	0.0004	0.0002	0.0003	0.0002	0	0	0.0003
	108.5	46.3	16.1	17.6	3.9	0.8	36.1
Conc Mean Std Dev RSD %	Cd -0.0003	Co -0.0009	Cr -0.0001	Cu -0.0004	Fe -0.0010	K -0.0027	Mg -0.0008
	0	0.0002	0.0001	0.0001	0.0001	0.0002	0
	6.9	28.2	87.4	20.9	13.8	7.1	0.7
Conc Mean Std Dev RSD %	Mn -0.0002	Mo -0.0001	Na -0.0031	Ni -0.0006	Pb -0.0001	Sb # -0.0013	Se -0.0002
	0	0.0001	0.0001	0.0003	0.0002	0.0009	0.0003
	3.9	122.6	4.0	52.8	193.0	66.6	204.8
Conc Mean Std Dev RSD %	Sn -0.0012	Ti -0.0004	Tl -0.0004	U	V 0.0005	W # -0.0019	Zn -0.0001
	0.0002	0.0001	0.0002		0.0013	0.0002	0
	14.9	24.9	41.5		291.1	11.9	43.0

Lab Id: **I-CRDL**

Measure Date: **9/30/2018 8:52:21 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0047	0.0550	0.0199	0.0593	0.0096	0.0047	0.0558
	0.0002	0.0010	0.0002	0.0003	0	0	0.0008
	4.7	1.9	0.8	0.6	0.5	0.7	1.5
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0047	0.0046	0.0053	0.0044	0.0251	0.4923	0.0547
	0	0.0001	0.0001	0.0001	0.0003	0.0076	0.0004
	1.0	1.7	1.0	3.3	1.0	1.5	0.8
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0050	0.0511	0.4974	0.0052	0.0103	0.0266	0.0496
	0	0.0002	0.0062	0.0001	0.0005	0.0002	0.0004
	0.6	0.4	1.2	2.2	4.9	0.9	0.8
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.1004	0.0514	0.0204		0.0121	# -0.0020	0.0087
	0.0013	0.0004	0.0005		0.0007	0.0003	0.0001
	1.3	0.9	2.4		5.7	15.4	1.0

Lab Id: **I-ICSA**

Measure Date: **9/30/2018 8:57:41 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0006	29.79	-0.0040	0.0004	-0.0007	-0.0007	> 156.3
	0.0005	0.1068	0.0005	0.0005	0	0	0.7774
	88.3	0.4	11.6	138.7	3.4	0.4	0.5
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0011	0.0004	0.0001	-0.0008	> 127.8	0.0026	> 75.88
	0.0001	0.0003	0.0004	0.0002	0.5628	0.0002	0.2879
	8.3	79.1	280.4	28.0	0.4	6.8	0.4
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0005	-0.0018	24.15	-0.0002	0.0080	0.0086	-0.0068
	0	0.0001	0.0822	0.0003	0.0010	0.0011	0.0013
	3.4	3.8	0.3	118.5	12.7	12.3	18.9
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0033	-0.0045	-0.0098		# -0.0081	# -0.0245	0.0058
	0.0003	0.0002	0.0002		0.0009	0.0013	0.0004
	8.2	3.5	2.2		11.2	5.1	6.3

Lab Id: **I-ICSAB**Measure Date: **9/30/2018 9:00:21 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.3113	29.66	1.038	0.4889	0.3017	0.1013	> 156.2
	0.0018	0.2348	0.0074	0.0049	0.0030	0.0011	1.097
	0.6	0.8	0.7	1.0	1.0	1.1	0.7
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.2984	0.2964	0.3036	0.3053	> 126.5	19.16	> 74.92
	0.0030	0.0024	0.0030	0.0011	0.6694	0.2338	0.4533
	1.0	0.8	1.0	0.3	0.5	1.2	0.6
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.1992	0.2940	23.84	0.2950	1.008	1.021	0.4931
	0.0019	0.0023	0.1351	0.0014	0.0109	0.0043	0.0066
	1.0	0.8	0.6	0.5	1.1	0.4	1.3
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0043	1.003	0.9604		0.2975	# -0.0231	0.3056
	0.0003	0.0082	0.0111		0.0015	0.0008	0.0028
	7.9	0.8	1.2		0.5	3.7	0.9

Lab Id: **CCV**Measure Date: **9/30/2018 10:01:45 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2557	1.009	1.037	1.039	1.036	1.016	> 1.125
	0.0025	0.0105	0.0203	0.0090	0.0133	0.0068	0.0175
	1.0	1.0	2.0	0.9	1.3	0.7	1.6
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.035	1.047	1.013	1.009	1.037	5.503	1.068
	0.0096	0.0083	0.0078	0.0132	0.0071	0.0720	0.0077
	0.9	0.8	0.8	1.3	0.7	1.3	0.7
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.022	1.013	> 5.899	1.049	1.038	1.000	0.9949
	0.0104	0.0087	0.0193	0.0071	0.0126	0.0281	0.0195
	1.0	0.9	0.3	0.7	1.2	2.8	2.0
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	1.029	1.017	1.029		1.024	0.2554	1.025
	0.0080	0.0134	0.0120		0.0117	0.0026	0.0092
	0.8	1.3	1.2		1.1	1.0	0.9

Lab Id: **CCB**Measure Date: **9/30/2018 10:04:26 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag -0.0003	Al # 0.0003	As -0.0008	B > 0.0207	Ba -0.0006	Be -0.0005	Ca > 0.0153
	0.0004	0.0006	0.0001	0.0011	0	0	0.0013
	146.4	189.2	12.7	5.5	6.3	5.1	8.6
Conc Mean Std Dev RSD %	Cd -0.0002	Co -0.0007	Cr 0.0001	Cu -0.0007	Fe -0.0007	K > 0.3724	Mg > 0.0165
	0.0001	0.0001	0	0.0005	0	0.0097	0.0018
	25.4	11.0	52.2	72.7	4.1	2.6	10.7
Conc Mean Std Dev RSD %	Mn -0.0002	Mo 0.0013	Na > 0.2302	Ni -0.0003	Pb -0.0002	Sb 0.0044	Se -0.0006
	0	0.0003	0.0033	0.0001	0.0006	0.0010	0.0006
	21.0	25.3	1.4	33.8	300.5	23.3	107.4
Conc Mean Std Dev RSD %	Sn -0.0014	Ti 0.0010	Tl -0.0001	U	V -0.0007	W # -0.0009	Zn -0.0021
	0.0007	0.0002	0.0001		0.0005	0.0005	0.0001
	46.6	16.1	102.9		67.6	57.5	3.7

Lab Id: **CB61316 - BLK**Measure Date: **9/30/2018 10:20:23 PM**Client Id: **ERT-3 - BLK**

Matrix		Weight	Volume	Pct Solid	Dilution	Factor	Units
449562-WQ-BLK		50	50	100	1	1.000	ppm
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0005	# 0.0012	-0.0018	0.0107	-0.0008	-0.0007	0.0255
	0.0005	0.0008	0.0006	0.0006	0	0	0.0012
	90.7	63.0	33.4	6.0	5.8	5.3	4.7
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	-0.0003	-0.0007	0.0000	-0.0008	0.0044	0.1749	0.0044
	0	0	0.0001	0.0002	0.0005	0.0048	0.0005
	2.6	6.1	292.0	26.4	11.1	2.7	11.6
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	-0.0002	0.0000	0.2286	-0.0010	-0.0004	# -0.0013	-0.0009
	0.0001	0	0.0092	0.0003	0.0002	0.0004	0.0006
	27.1	100.0	4.0	31.9	42.3	31.0	65.9
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0033	-0.0008	-0.0002		0.0004	# -0.0019	0.0042
	0.0002	0.0002	0.0005		0.0008	0.0002	0.0004
	6.6	19.6	244.0		194.9	11.4	9.2

Lab Id: **CB61316 - LCS**Measure Date: **9/30/2018 10:23:02 PM**Client Id: **ERT-3 - LCS**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WQ-SPK	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2559	1.011	> 2.107	1.054	1.062	1.053	1.072
	0.0007	0.0026	0.0408	0.0217	0.0055	0.0030	0.0009
	0.3	0.3	1.9	2.1	0.5	0.3	0.1
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.076	1.096	1.054	1.034	1.089	4.881	1.075
	0.0301	0.0235	0.0227	0.0018	0.0246	0.0536	0.0101
	2.8	2.1	2.1	0.2	2.3	1.1	0.9
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.071	1.053	1.056	1.095	> 2.108	> 2.160	1.022
	0.0306	0.0260	0.0078	0.0236	0.0494	0.0302	0.0303
	2.9	2.5	0.7	2.2	2.3	1.4	3.0
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	> 5.472	1.035	> 5.307		1.036	0.0020	1.063
	0.1160	0.0061	0.1097		0.0017	0.0003	0.0331
	2.1	0.6	2.1		0.2	15.3	3.1

Lab Id: **CB61316**Measure Date: **9/30/2018 10:25:41 PM**Client Id: **ERT-3**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S11	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0002	0.0344	-0.0012	0.0507	0.0552	-0.0005	48.38
	0.0002	0.0031	0.0003	0.0006	0.0002	0	0.4420
	93.3	8.9	24.4	1.1	0.4	5.8	0.9
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0090	-0.0005	0.1107	0.0018	0.0539	3.198	5.381
	0.0001	0.0001	0.0011	0.0002	0.0007	0.0111	0.0432
	1.6	31.8	1.0	11.6	1.2	0.3	0.8
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0020	0.0011	35.24	0.0001	-0.0002	# 0.0000	0.0001
	0	0.0002	0.0824	0.0002	0.0004	0.0005	0.0001
	1.1	19.7	0.2	142.3	207.5	1641	230.2
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0004	0.0002	0.0007		-0.0002	# -0.0018	0.0074
	0.0008	0.0003	0.0003		0.0003	0.0004	0.0001
	188.4	127.5	35.5		191.9	19.4	1.8

Lab Id: **CB61316 - DUP**Measure Date: **9/30/2018 10:28:21 PM**Client Id: **ERT-3 - DUP**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WQ-DUP	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0001	0.0408	-0.0011	0.0492	0.0547	-0.0007	48.01
	0.0004	0.0051	0.0003	0.0004	0.0004	0	0.7088
	529.6	12.6	32.0	0.8	0.7	1.0	1.5
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0090	-0.0005	0.1101	0.0018	0.0532	3.197	5.356
	0.0002	0.0002	0.0009	0.0008	0.0004	0.0084	0.0637
	1.7	30.7	0.9	41.8	0.8	0.3	1.2
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0018	0.0005	35.69	0.0000	-0.0002	# -0.0005	0.0006
	0	0.0001	0.1201	0.0003	0.0002	0.0003	0.0010
	1.5	16.9	0.3	763.6	116.7	62.6	172.1
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0024	-0.0011	-0.0002		-0.0002	# -0.0020	0.0071
	0.0002	0	0.0006		0.0013	0.0003	0.0001
	6.5	2.6	259.3		560.1	16.0	1.0

Lab Id: **CB61316 - MS**Measure Date: **9/30/2018 10:31:00 PM**Client Id: **ERT-3 - MS**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WQ-MSX	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2570	1.051	> 2.067	1.066	1.103	1.020	49.64
	0.0013	0.0092	0.0122	0.0017	0.0059	0.0028	0.2269
	0.5	0.9	0.6	0.2	0.5	0.3	0.5
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.027	1.043	1.127	1.035	1.101	8.213	6.414
	0.0061	0.0021	0.0010	0.0043	0.0013	0.0219	0.0109
	0.6	0.2	0.1	0.4	0.1	0.3	0.2
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.021	1.026	37.03	1.042	> 2.017	> 2.120	0.9860
	0.0068	0.0050	0.0845	0.0023	0.0059	0.0189	0.0120
	0.7	0.5	0.2	0.2	0.3	0.9	1.2
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	> 5.267	1.023	> 5.076		1.021	0.0019	1.032
	0.0212	0.0052	0.0099		0.0028	0.0002	0.0086
	0.4	0.5	0.2		0.3	12.2	0.8

Lab Id: **CCV**Measure Date: **9/30/2018 10:33:40 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2519	0.9992	1.036	1.005	1.035	1.011	1.034
	0.0046	0.0166	0.0108	0.0098	0.0088	0.0086	0.0162
	1.8	1.7	1.0	1.0	0.8	0.8	1.6
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.034	1.042	1.006	1.002	1.029	4.983	1.029
	0.0131	0.0094	0.0047	0.0125	0.0075	0.0541	0.0086
	1.3	0.9	0.5	1.2	0.7	1.1	0.8
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.020	1.011	5.052	1.047	1.035	1.006	0.9963
	0.0131	0.0057	0.0530	0.0087	0.0169	0.0146	0.0131
	1.3	0.6	1.0	0.8	1.6	1.4	1.3
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	1.023	1.017	1.033		1.014	0.2566	1.026
	0.0097	0.0090	0.0123		0.0163	0.0048	0.0122
	0.9	0.9	1.2		1.6	1.9	1.2

Lab Id: **CCB**Measure Date: **9/30/2018 10:36:20 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0005	# -0.0002	-0.0008	0.0073	-0.0006	-0.0005	0.0028
	0.0005	0.0007	0.0005	0.0001	0	0	0.0002
	87.8	395.2	59.4	1.1	4.6	1.6	7.0
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	-0.0002	-0.0007	0.0001	-0.0004	-0.0013	0.0758	-0.0004
	0	0.0004	0	0.0001	0.0002	0.0006	0
	11.9	58.9	69.6	31.3	12.2	0.9	11.5
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	-0.0002	0.0014	0.0309	-0.0006	0.0002	> 0.0054	0.0002
	0	0.0003	0	0.0002	0.0002	0.0013	0.0005
	10.9	23.9	0.1	25.5	84.2	23.4	223.9
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0004	0.0014	0.0004		-0.0002	# -0.0011	-0.0020
	0.0003	0.0002	0.0003		0.0009	0.0004	0
	61.6	15.8	83.2		485.5	33.0	1.7

Lab Id: **CB61316 - DIL**Measure Date: **9/30/2018 10:39:00 PM**Client Id: **ERT-3 - DIL**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WQ-DIL	50	50	100	5	5.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0002	0.0812	-0.0042	0.0566	0.0494	-0.0032	46.22
	0.0033	0.0088	0.0025	0.0038	0.0007	0.0001	0.1731
	1495	10.9	60.4	6.7	1.4	2.4	0.4
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0081	-0.0029	0.0960	0.0022	0.0505	3.463	5.242
	0.0001	0.0007	0.0013	0.0031	0.0002	0.0626	0.0751
	1.5	25.9	1.3	140.4	0.3	1.8	1.4
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0015	0.0022	33.36	-0.0008	0.0005	0.0034	-0.0022
	0.0001	0.0003	0.3795	0.0018	0.0006	0.0037	0.0008
	7.5	13.1	1.1	234.1	120.1	108.2	34.9
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0080	-0.0010	-0.0020		0.0003	# -0.0086	0.0086
	0.0010	0.0009	0.0028		0.0065	0.0010	0.0010
	12.4	93.1	136.2		2147	11.2	11.8

Lab Id: **CB61316 - PS**Measure Date: **9/30/2018 10:41:40 PM**Client Id: **ERT-3 - PS**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WQ-PSX	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag 0.2464	Al 1.002	As 1.954	B 1.007	Ba 1.057	Be 1.004	Ca 48.21
	0.0027	0.0080	0.0207	0.0157	0.0040	0.0086	0.2383
	1.1	0.8	1.1	1.6	0.4	0.9	0.5
Conc Mean Std Dev RSD %	Cd 0.9788	Co 0.9873	Cr 1.067	Cu 0.9911	Fe 1.037	K 7.859	Mg 6.087
	0.0153	0.0120	0.0135	0.0083	0.0146	0.0346	0.0783
	1.6	1.2	1.3	0.8	1.4	0.4	1.3
Conc Mean Std Dev RSD %	Mn 0.9771	Mo 0.9703	Na 35.32	Ni 0.9870	Pb 1.897	Sb > 2.017	Se 0.9427
	0.0153	0.0129	0.0206	0.0111	0.0178	0.0307	0.0093
	1.6	1.3	0.1	1.1	0.9	1.5	1.0
Conc Mean Std Dev RSD %	Sn > 4.985	Ti 0.9867	Tl > 4.801	U	V 0.9841	W 0.0021	Zn 0.9919
	0.0666	0.0042	0.0572		0.0094	0.0002	0.0123
	1.3	0.4	1.2		1.0	11.0	1.2

Lab Id: **CB61309**Measure Date: **9/30/2018 10:52:17 PM**Client Id: **ERT-6**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S04	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0010	0.1880	-0.0016	0.0527	0.0731	-0.0007	31.93
	0.0005	0.0068	0.0002	0.0004	0.0007	0	0.2652
	46.9	3.6	12.8	0.7	1.0	1.5	0.8
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0115	0.0007	0.0180	0.0055	0.3169	3.740	6.906
	0.0002	0.0003	0.0002	0.0004	0.0021	0.0408	0.0418
	1.5	39.5	1.1	7.1	0.7	1.1	0.6
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0068	0.0009	> 77.36	0.0014	0.0004	# -0.0003	-0.0004
	0	0.0001	0.6056	0.0003	0.0001	0.0003	0.0014
	0.3	7.2	0.8	19.4	13.9	94.9	312.2
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0024	0.0074	-0.0010		0.0021	# -0.0017	0.0305
	0.0001	0.0002	0.0004		0.0008	0.0001	0.0003
	2.8	2.6	39.5		36.3	4.8	0.9

Lab Id: **CB61310**Measure Date: **9/30/2018 10:54:57 PM**Client Id: **SP-5**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S05	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0004	0.0165	-0.0011	0.0220	0.0172	-0.0007	9.335
	0.0004	0.0011	0.0002	0.0003	0.0001	0	0.0419
	102.8	6.6	14.3	1.5	0.6	2.3	0.4
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0223	-0.0004	0.0122	0.0033	0.0510	0.9775	1.623
	0.0004	0.0001	0.0001	0.0004	0	0.0017	0.0068
	1.6	22.8	1.1	10.8	0	0.2	0.4
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.1032	0	13.13	0.0030	-0.0005	# -0.0010	-0.0006
	0.0011	0.0001	0.0580	0.0002	0.0001	0.0001	0.0016
	1.0	3250	0.4	5.6	13.2	13.6	260.6
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0031	-0.0008	-0.0007		0.0009	# -0.0016	0.0265
	0.0002	0.0002	0.0002		0.0005	0.0001	0.0005
	6.0	19.4	29.5		57.2	7.7	1.8

Lab Id: **CB61311**Measure Date: **9/30/2018 10:57:36 PM**Client Id: **SP-6**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S06	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0003	1.296	0.0001	0.0523	0.0232	-0.0005	14.78
	0.0001	0.0107	0.0003	0.0009	0.0001	0	0.1211
	28.8	0.8	376.9	1.7	0.6	7.2	0.8
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0339	0.0001	0.0520	0.0956	0.6769	4.154	1.513
	0.0004	0.0001	0.0008	0.0007	0.0111	0.0371	0.0240
	1.3	119.3	1.6	0.8	1.6	0.9	1.6
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0197	0.0046	20.23	0.0202	0.0013	0.0194	-0.0005
	0.0003	0.0001	0.0876	0.0004	0.0001	0.0003	0.0002
	1.5	2.8	0.4	2.0	5.9	1.5	33.4
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0021	0.0016	-0.0008		0.0027	# 0.0003	0.2068
	0.0002	0.0001	0		0.0019	0	0.0035
	8.5	3.1	2.8		70.4	1.6	1.7

Lab Id: **CB61312**Measure Date: **9/30/2018 11:00:15 PM**Client Id: **MW-6SS**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S07	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0002	0.0496	-0.0013	0.0587	0.0240	-0.0007	42.00
	0.0004	0.0078	0.0008	0.0008	0.0001	0	0.0622
	181.3	15.8	62.5	1.3	0.4	2.9	0.1
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.2397	0.0018	0.0329	0.0184	0.1507	3.460	4.635
	0.0017	0.0002	0.0004	0.0007	0.0019	0.0224	0.0455
	0.7	12.9	1.2	3.7	1.3	0.6	1.0
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.2767	0.0003	32.48	0.2025	0.0002	# -0.0014	-0.0004
	0.0032	0.0001	0.1697	0.0022	0.0003	0.0009	0.0013
	1.2	17.7	0.5	1.1	195.2	70.3	315.4
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0031	-0.0016	-0.0005		-0.0002	# -0.0015	0.0216
	0.0001	0.0001	0.0005		0.0003	0.0001	0.0003
	4.4	3.1	106.0		194.4	3.7	1.6

Lab Id: **CB61313**Measure Date: **9/30/2018 11:02:55 PM**Client Id: **ERT-5**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S08	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0004	0.0481	-0.0010	0.0310	0.0574	-0.0007	33.73
	0.0007	0.0017	0.0003	0.0004	0.0005	0	0.4432
	150.7	3.6	36.0	1.3	0.9	1.7	1.3
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0434	-0.0004	0.0697	0.0039	0.0111	2.278	4.212
	0.0004	0.0003	0.0006	0.0002	0.0001	0.0335	0.0480
	1.0	72.9	0.9	4.4	1.0	1.5	1.1
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0091	0.0002	39.87	0.0018	-0.0006	# -0.0012	0.0001
	0.0001	0.0001	0.3454	0	0.0006	0.0005	0.0003
	0.8	49.8	0.9	1.4	90.9	41.7	478.9
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0031	-0.0015	-0.0011		-0.0007	# -0.0016	0.0361
	0.0001	0	0.0005		0.0003	0.0001	0.0003
	4.5	3.1	49.3		40.5	5.2	0.9

Lab Id: **CCV**Measure Date: **9/30/2018 11:05:36 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2565	1.011	1.058	1.019	1.040	1.031	1.048
	0.0047	0.0133	0.0216	0.0150	0.0069	0.0040	0.0109
	1.8	1.3	2.0	1.5	0.7	0.4	1.0
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.051	1.062	1.029	1.009	1.051	4.824	1.050
	0.0109	0.0114	0.0113	0.0136	0.0121	0.1086	0.0135
	1.0	1.1	1.1	1.3	1.2	2.3	1.3
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.038	1.030	4.921	1.066	1.065	1.022	1.021
	0.0047	0.0097	0.1131	0.0128	0.0160	0.0093	0.0200
	0.5	0.9	2.3	1.2	1.5	0.9	2.0
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	1.045	1.019	1.060		1.027	0.2632	1.040
	0.0136	0.0090	0.0175		0.0140	0.0047	0.0055
	1.3	0.9	1.6		1.4	1.8	0.5

Lab Id: **CCB**Measure Date: **9/30/2018 11:08:16 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag -0.0010	Al # -0.0006	As -0.0017	B 0.0033	Ba -0.0006	Be -0.0005	Ca 0.0021
	0.0006	0.0004	0.0002	0.0002	0.0001	0	0.0006
	64.4	72.4	12.8	7.5	9.6	5.7	29.8
Conc Mean Std Dev RSD %	Cd -0.0002	Co -0.0007	Cr 0.0001	Cu -0.0008	Fe -0.0018	K 0.0341	Mg -0.0006
	0.0001	0.0003	0	0.0006	0.0002	0.0001	0.0001
	40.6	43.4	87.5	78.5	12.8	0.4	22.4
Conc Mean Std Dev RSD %	Mn -0.0003	Mo 0.0013	Na 0.0183	Ni -0.0009	Pb 0.0001	Sb > 0.0052	Se 0.0006
	0	0.0004	0.0004	0.0002	0.0001	0.0017	0.0002
	8.9	31.1	2.5	18.2	93.8	33.5	34.8
Conc Mean Std Dev RSD %	Sn -0.0012	Ti 0.0012	Tl -0.0006	U	V 0.0001	W # -0.0011	Zn -0.0020
	0.0007	0.0002	0.0003		0.0004	0.0002	0.0001
	59.4	13.2	59.9		620.3	18.4	5.3

Lab Id: **CB61314**Measure Date: **9/30/2018 11:10:56 PM**Client Id: **ERT-2**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S09	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0002	0.0266	-0.0005	0.0467	0.0260	-0.0006	25.66
	0.0002	0.0050	0.0005	0.0001	0.0001	0	0.1239
	161.8	19.0	92.2	0.3	0.3	0.6	0.5
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0531	0.0000	0.0584	0.0090	0.8284	2.653	3.327
	0.0003	0.0003	0.0002	0.0003	0.0020	0.0164	0.0193
	0.6	5720	0.3	3.2	0.2	0.6	0.6
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0056	0.0011	20.94	0.0051	0.0042	0.0022	0.0001
	0	0	0.2625	0.0003	0.0001	0.0009	0.0004
	0.8	4.0	1.3	5.8	1.9	42.3	280.8
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0018	-0.0001	-0.0010		0.0012	# -0.0010	0.0598
	0.0002	0	0.0007		0.0008	0.0001	0.0006
	10.6	26.7	76.3		66.2	10.3	1.0

Lab Id: **CB61315**Measure Date: **9/30/2018 11:13:36 PM**Client Id: **FIELD DUPLICATE**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S10	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0001	0.0369	-0.0006	0.0439	0.0563	-0.0007	49.31
	0.0008	0.0078	0.0009	0.0007	0.0002	0	0.2709
	695.5	21.3	155.6	1.5	0.3	1.0	0.5
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0091	-0.0007	0.1108	0.0017	0.0442	3.169	5.398
	0.0001	0.0004	0.0018	0.0002	0.0008	0.0116	0.0340
	1.5	54.2	1.7	14.5	1.8	0.4	0.6
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0016	0.0004	35.75	0.0005	0.0000	0.0006	0.0000
	0.0001	0.0001	0.2344	0.0001	0.0006	0.0003	0.0006
	4.1	20.6	0.7	21.3	1508	56.2	2422
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0028	-0.0016	-0.0005		-0.0003	# -0.0017	0.0062
	0.0002	0.0001	0.0006		0.0009	0.0001	0.0002
	7.4	5.3	111.9		293.0	5.4	3.3

Lab Id: **CB61317**Measure Date: **9/30/2018 11:16:15 PM**Client Id: **ERT-1**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S12	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0001	0.0181	-0.0015	0.0099	0.0075	-0.0007	6.571
	0.0007	0.0016	0.0006	0.0003	0	0	0.0503
	789.7	8.6	39.9	3.3	0.6	0.3	0.8
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0085	-0.0006	0.0108	0.0037	0.0111	0.5207	1.509
	0.0001	0.0002	0.0001	0.0002	0.0001	0.0045	0.0134
	1.4	30.2	1.0	6.0	1.1	0.9	0.9
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0027	0.0003	2.090	0.0000	-0.0001	# -0.0003	-0.0002
	0.0001	0.0002	0.0051	0.0002	0.0004	0.0007	0.0008
	2.1	48.9	0.2	454.5	475.6	200.3	377.0
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0029	-0.0007	-0.0010		0.0003	# -0.0014	0.0189
	0.0003	0.0001	0.0005		0.0012	0.0003	0.0003
	10.3	16.4	47.8		422.7	24.5	1.7

Lab Id: **CB61318**Measure Date: **9/30/2018 11:18:55 PM**Client Id: **ERT-4**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449562-WS-S13	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0005	0.0492	-0.0008	0.0367	0.0646	-0.0007	55.05
	0.0010	0.0021	0.0006	0.0001	0.0002	0	0.1157
	212.4	4.3	72.6	0.4	0.3	2.8	0.2
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0093	-0.0006	0.0860	0.0032	0.0306	2.329	5.994
	0	0.0003	0.0004	0.0003	0.0003	0.0069	0.0534
	0.4	44.0	0.5	10.0	0.9	0.3	0.9
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0019	0.0004	40.70	0.0003	-0.0008	# -0.0003	-0.0008
	0.0001	0.0001	0.0947	0.0002	0.0002	0.0002	0.0014
	3.8	12.8	0.2	65.9	25.4	82.8	189.1
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0028	-0.0018	-0.0006		0	# -0.0020	0.0105
	0.0002	0.0002	0.0002		0.0003	0.0002	0.0001
	7.3	8.9	35.4		12850	11.1	0.9

Lab Id: **CCV**Measure Date: **9/30/2018 11:37:31 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2546	1.002	0.9492	0.9189	1.033	1.004	1.046
	0.0022	0.0121	0.0076	0.0046	0.0087	0.0093	0.0121
	0.9	1.2	0.8	0.5	0.8	0.9	1.2
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.9581	0.9645	0.9350	1.004	0.9527	4.912	0.9622
	0.0082	0.0037	0.0035	0.0161	0.0041	0.0362	0.0152
	0.9	0.4	0.4	1.6	0.4	0.7	1.6
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.9439	0.9346	4.988	0.9682	0.9609	0.9158	0.9162
	0.0044	0.0077	0.0378	0.0053	0.0039	0.0174	0.0043
	0.5	0.8	0.8	0.5	0.4	1.9	0.5
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.9447	1.012	0.9583		1.015	0.2381	0.9530
	0.0059	0.0084	0.0079		0.0165	0.0031	0.0054
	0.6	0.8	0.8		1.6	1.3	0.6

Lab Id: **CCB**Measure Date: **9/30/2018 11:40:11 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	-0.0005	# -0.0003	-0.0010	0.0025	-0.0006	-0.0005	0.0056
	0.0007	0.0004	0.0004	0.0002	0	0	0.0005
	156.8	161.3	45.1	10.1	6.7	7.6	8.8
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	-0.0002	-0.0005	0.0001	-0.0007	-0.0019	0.0175	0.0001
	0	0.0004	0	0.0002	0.0002	0	0.0001
	18.9	66.2	41.9	30.5	10.8	0.2	168.7
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	-0.0003	0.0012	0.0105	-0.0005	-0.0003	> 0.0059	-0.0002
	0	0.0004	0.0001	0.0004	0.0004	0.0014	0.0004
	9.0	30.4	0.9	66.7	124.4	24.2	205.7
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0010	0.0012	-0.0004		0.0003	# -0.0008	-0.0021
	0.0004	0.0001	0.0004		0.0010	0.0002	0
	41.3	7.2	86.1		307.0	25.3	1.8

Lab Id: **CRDL**Measure Date: **10/1/2018 2:33:11 AM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0055	0.0584	0.0202	0.0587	0.0095	0.0047	> 0.1150
	0.0006	0.0012	0.0004	0.0017	0.0001	0	0.0019
	11.2	2.1	2.0	2.9	1.2	0.8	1.7
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0046	0.0048	0.0053	0.0045	0.0261	0.4922	0.0582
	0.0002	0.0004	0.0001	0.0004	0.0002	0.0057	0.0013
	4.5	7.8	1.3	8.1	0.7	1.2	2.3
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0052	0.0511	0.5059	0.0046	0.0103	0.0280	0.0498
	0.0001	0.0006	0.0045	0.0004	0.0006	0.0005	0.0007
	2.5	1.1	0.9	8.4	5.8	1.7	1.4
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.1003	0.0513	0.0203		0.0115	# -0.0015	> 0.0132
	0.0028	0.0006	0.0005		0.0009	0	0.0001
	2.8	1.2	2.7		7.8	2.0	0.9

Lab Id: **ICSA**Measure Date: **10/1/2018 2:38:31 AM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0002	29.44	-0.0036	-0.0002	-0.0007	-0.0007	> 155.1
	0.0005	0.2225	0.0004	0.0005	0.0001	0	1.354
	313.3	0.8	9.8	235.6	9.1	2.2	0.9
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0015	-0.0002	0.0002	-0.0007	123.7	0.0034	73.14
	0.0001	0.0001	0.0004	0.0002	1.113	0.0004	0.6545
	5.8	40.9	188.0	33.0	0.9	12.8	0.9
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0005	-0.0017	23.98	-0.0006	0.0083	0.0079	-0.0090
	0	0.0001	0.1202	0.0004	0.0004	0.0009	0.0043
	2.3	7.4	0.5	59.7	4.3	11.7	47.4
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0037	-0.0047	-0.0094		# -0.0086	# -0.0230	0.0056
	0	0.0001	0.0003		0.0010	0.0012	0.0002
	0.8	2.9	2.7		11.3	5.0	4.3

Lab Id: **ICSAB**Measure Date: **10/1/2018 2:41:10 AM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.3092	29.47	1.035	0.4874	0.3008	0.1016	> 155.7
	0.0008	0.2717	0.0130	0.0033	0.0025	0.0005	1.101
	0.3	0.9	1.3	0.7	0.8	0.5	0.7
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.2974	0.2952	0.3026	0.2999	> 126.3	18.97	> 74.72
	0.0003	0.0011	0.0014	0.0015	1.123	0.2259	0.6988
	0.1	0.4	0.5	0.5	0.9	1.2	0.9
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.1986	0.2946	23.43	0.2937	1.003	1.014	0.4926
	0.0005	0.0007	0.0838	0.0003	0.0038	0.0059	0.0075
	0.2	0.3	0.4	0.1	0.4	0.6	1.5
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0042	0.9996	0.9603		0.2958	# -0.0239	0.3052
	0.0003	0.0073	0.0021		0.0014	0.0012	0.0005
	7.3	0.7	0.2		0.5	4.9	0.2

Lab Id: **ICV**Measure Date: **10/2/2018 12:41:12 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2546	1.002	1.025	0.9924	1.037	1.038	1.015
	0.0005	0.0074	0.0192	0.0139	0.0047	0.0076	0.0092
	0.2	0.7	1.9	1.4	0.5	0.7	0.9
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.010	1.018	0.9912	1.000	1.005	4.933	1.025
	0.0108	0.0198	0.0189	0.0094	0.0180	0.0645	0.0073
	1.1	1.9	1.9	0.9	1.8	1.3	0.7
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.9956	0.9841	4.990	1.006	1.028	1.017	1.011
	0.0131	0.0208	0.0578	0.0205	0.0195	0.0191	0.0257
	1.3	2.1	1.2	2.0	1.9	1.9	2.5
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.9914	1.013	1.016		1.015	0.2508	0.9879
	0.0180	0.0027	0.0201		0.0073	0.0068	0.0095
	1.8	0.3	2.0		0.7	2.7	1.0

Lab Id: **ICB**Measure Date: **10/2/2018 12:49:11 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag 0.0000	Al # -0.0007	As -0.0010	B -0.0007	Ba -0.0011	Be -0.0007	Ca 0.0002
	0.0002	0.0002	0.0001	0.0002	0	0	0.0002
	514.3	21.3	12.4	21.2	2.1	6.5	124.5
Conc Mean Std Dev RSD %	Cd -0.0002	Co -0.0006	Cr -0.0001	Cu -0.0005	Fe -0.0002	K -0.0076	Mg -0.0007
	0	0.0001	0	0.0003	0.0002	0.0002	0.0001
	11.6	16.7	69.4	54.8	86.1	2.3	9.0
Conc Mean Std Dev RSD %	Mn -0.0002	Mo 0.0002	Na -0.0069	Ni -0.0002	Pb -0.0004	Sb 0.0009	Se 0.0000
	0	0.0001	0.0001	0.0004	0.0007	0.0001	0.0009
	0.8	49.5	1.6	172.0	193.4	15.0	5788
Conc Mean Std Dev RSD %	Sn 0.0014	Ti 0.0000	Tl -0.0011	U	V -0.0001	W # -0.0004	Zn 0.0000
	0.0002	0	0.0004		0.0010	0.0002	0
	11.8	275.0	33.4		1315	58.0	100.0

Lab Id: I-CRDL

Measure Date: 10/2/2018 5:31:59 PM

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0062	0.0551	0.0191	0.0569	0.0096	0.0045	0.0556
	0.0006	0.0020	0.0024	0.0076	0.0004	0.0001	0.0018
	9.4	3.7	12.3	13.3	4.5	2.8	3.3
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0046	0.0045	0.0053	0.0044	0.0262	0.4785	0.0514
	0.0007	0.0007	0.0005	0.0005	0.0030	0.0123	0.0086
	14.3	16.6	9.2	11.7	11.4	2.6	16.8
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0048	0.0504	0.5261	0.0048	0.0102	0.0278	0.0491
	0.0006	0.0055	0.0196	0.0006	0.0015	0.0035	0.0060
	12.4	11.0	3.7	11.8	14.5	12.7	12.2
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.0995	0.0527	0.0199		0.0116	# -0.0002	0.0107
	0.0105	0.0012	0.0029		0.0011	0.0002	0.0016
	10.5	2.3	14.5		9.1	119.6	15.1

Lab Id: **I-ICSA**

Measure Date: **10/2/2018 5:37:18 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0009	29.80	-0.0028	-0.0014	-0.0009	-0.0007	> 158.7
	0.0001	0.0910	0.0008	0.0005	0	0	0.2126
	15.0	0.3	29.4	33.3	3.2	3.0	0.1
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0020	0.0001	0.0000	-0.0005	> 128.2	-0.0064	> 76.39
	0.0001	0.0002	0.0003	0.0007	2.779	0.0001	1.694
	3.7	199.1	2073	143.5	2.2	1.8	2.2
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0007	-0.0016	24.16	-0.0002	0.0078	0.0068	-0.0067
	0	0.0001	0.1005	0.0003	0.0010	0.0023	0.0047
	3.3	3.4	0.4	176.9	13.3	33.1	69.3
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.0003	-0.0041	# -0.0101		# -0.0091	# -0.0208	0.0082
	0.0001	0.0002	0.0008		0.0005	0.0002	0.0002
	29.1	4.4	8.2		5.7	1.0	2.1

Lab Id: **I-ICSAB**Measure Date: **10/2/2018 5:39:58 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.3189	> 29.95	1.050	0.5101	0.3074	0.1049	> 158.6
	0.0030	0.0940	0.0100	0.0050	0.0007	0.0009	0.3633
	0.9	0.3	0.9	1.0	0.2	0.8	0.2
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.3082	0.3046	0.3109	0.3107	> 129.9	18.20	> 77.51
	0.0015	0.0018	0.0011	0.0022	1.035	0.1629	0.7170
	0.5	0.6	0.4	0.7	0.8	0.9	0.9
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.2050	0.3036	23.89	0.2994	1.040	1.055	0.5096
	0.0014	0.0024	0.1668	0.0022	0.0062	0.0076	0.0033
	0.7	0.8	0.7	0.7	0.6	0.7	0.7
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0004	1.027	1.004		0.3003	# -0.0210	0.3131
	0.0003	0.0011	0.0041		0.0025	0.0009	0.0027
	68.7	0.1	0.4		0.8	4.2	0.9

Lab Id: **CCB**Measure Date: **10/2/2018 8:29:35 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag 0.0000	Al # -0.0003	As -0.0011	B -0.0009	Ba -0.0010	Be -0.0005	Ca -0.0014
	0.0003	0.0012	0.0007	0.0001	0	0.0001	0.0007
	1367	424.6	57.9	11.4	3.6	9.7	50.3
Conc Mean Std Dev RSD %	Cd -0.0001	Co -0.0006	Cr 0.0001	Cu -0.0005	Fe -0.0003	K -0.0083	Mg -0.0006
	0	0.0001	0	0.0003	0.0002	0.0002	0.0001
	26.1	14.3	41.4	56.4	66.9	3.0	9.4
Conc Mean Std Dev RSD %	Mn -0.0002	Mo 0.0011	Na 0.0160	Ni -0.0005	Pb -0.0011	Sb > 0.0085	Se 0.0007
	0	0.0004	0.0005	0.0001	0.0005	0.0017	0.0015
	9.6	35.7	2.9	23.9	44.1	19.9	211.7
Conc Mean Std Dev RSD %	Sn 0.0034	Ti 0.0015	Tl -0.0008	U	V -0.0003	W # 0.0002	Zn -0.0005
	0.0009	0.0003	0.0006		0.0009	0.0008	0
	26.7	17.2	78.3		307.7	311.9	2.6

Lab Id: **CCV**Measure Date: **10/2/2018 8:58:55 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2523	0.9984	0.9881	0.9751	1.027	1.036	1.015
	0.0017	0.0084	0.0063	0.0056	0.0001	0.0026	0.0085
	0.7	0.8	0.6	0.6	0	0.2	0.8
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.9798	1.001	0.9782	0.9944	0.9899	4.922	1.009
	0.0379	0.0104	0.0115	0.0065	0.0065	0.0951	0.0169
	3.9	1.0	1.2	0.7	0.7	1.9	1.7
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.9780	0.9708	4.986	0.9859	1.008	0.9844	0.9745
	0.0192	0.0088	0.0888	0.0096	0.0128	0.0140	0.0101
	2.0	0.9	1.8	1.0	1.3	1.4	1.0
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.9687	1.002	1.004		1.003	0.2479	0.9829
	0.0149	0.0015	0.0049		0.0126	0.0025	0.0122
	1.5	0.1	0.5		1.3	1.0	1.2

Lab Id: **CB61091 - BLK**

Measure Date: **10/2/2018 9:14:56 PM**

Client Id: **CB61091 - BLK**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449756-WQ-BLK	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0004	# 0.0010	-0.0013	-0.0015	-0.0011	-0.0007	-0.0007
	0.0001	0.0001	0.0005	0.0002	0	0	0.0004
	20.5	7.6	40.7	13.2	2.1	2.7	55.1
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	-0.0002	-0.0007	0.0001	-0.0007	0.0009	-0.0083	0.0012
	0.0001	0.0001	0	0.0002	0.0003	0.0002	0.0001
	31.3	16.7	71.2	22.6	36.9	1.9	4.9
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	-0.0002	0.0000	0.0134	-0.0006	0.0001	0.0002	-0.0011
	0	0	0.0003	0.0002	0.0002	0.0004	0.0006
	6.3	166.7	2.0	30.4	129.7	242.8	55.2
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.0011	-0.0001	-0.0009		0.0002	# -0.0002	0.0000
	0.0002	0.0001	0.0002		0.0009	0.0004	0
	17.2	82.4	26.8		396.1	204.4	90.0

Lab Id: **CB61091 - LCS**

Measure Date: **10/2/2018 9:17:36 PM**

Client Id: **CB61091 - LCS**

Matrix		Weight	Volume	Pct Solid	Dilution	Factor	Units	
449756-WQ-SPK		50	50	100	1	1.000	ppm	
Conc Mean	Ag	Al	As	B	Ba	Be	Ca	
	0.2531	1.018	> 2.037	1.037	1.058	1.068	1.052	
	0.0039	0.0066	0.0838	0.0437	0.0034	0.0073	0.0096	
RSD %		1.6	0.6	4.1	4.2	0.3	0.7	0.9
Conc Mean	Cd	Co	Cr	Cu	Fe	K	Mg	
	1.048	1.073	1.046	1.025	1.062	4.871	1.086	
	0.0405	0.0429	0.0364	0.0067	0.0423	0.1947	0.0321	
RSD %		3.9	4.0	3.5	0.7	4.0	4.0	3.0
Conc Mean	Mn	Mo	Na	Ni	Pb	Sb	Se	
	1.047	1.040	1.006	1.054	> 2.096	> 2.180	1.011	
	0.0424	0.0428	0.0377	0.0404	0.0831	0.0727	0.0379	
RSD %		4.1	4.1	3.7	3.8	4.0	3.3	3.7
Conc Mean	Sn	Ti	Tl	U	V	W	Zn	
	> 5.340	1.035	> 5.264		1.021	0.0032	1.046	
	0.2136	0.0047	0.2272		0.0029	0.0006	0.0361	
RSD %		4.0	0.5	4.3		0.3	19.8	3.5

Lab Id: **CB61091 - DUP**Measure Date: **10/2/2018 9:22:56 PM**Client Id: **CB61091 - DUP**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449756-WQ-DUP	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0003	0.0847	-0.0004	0.0359	0.0688	-0.0006	31.66
	0.0004	0.0024	0.0006	0.0013	0.0011	0	0.3681
	123.7	2.8	147.2	3.5	1.6	3.1	1.2
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	-0.0001	-0.0003	0.0003	0.0017	0.2423	3.041	8.287
	0	0.0004	0.0001	0.0008	0.0067	0.1003	0.2236
	3.6	120.8	20.2	48.0	2.8	3.3	2.7
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.1530	0.0003	45.04	-0.0002	-0.0007	0.0004	-0.0007
	0.0042	0	0.8117	0.0001	0.0001	0.0007	0.0001
	2.8	7.6	1.8	47.7	10.5	166.9	11.0
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.0016	0.0011	-0.0014		0.0001	# -0.0003	0.0007
	0.0002	0.0002	0.0001		0.0012	0.0001	0.0001
	14.9	20.9	3.6		1414	20.8	12.2

Lab Id: **CB61091 - MS**Measure Date: **10/2/2018 9:25:36 PM**Client Id: **CB61091 - MS**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449756-WQ-MSX	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2556	1.101	> 2.022	1.069	1.107	1.068	32.36
	0.0029	0.0060	0.0392	0.0168	0.0029	0.0007	0.0701
	1.1	0.5	1.9	1.6	0.3	0.1	0.2
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.037	1.055	1.037	1.023	1.292	7.450	9.177
	0.0214	0.0225	0.0192	0.0025	0.0253	0.1203	0.1868
	2.1	2.1	1.9	0.2	2.0	1.6	2.0
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.182	1.049	44.72	1.037	> 2.068	> 2.173	0.9956
	0.0261	0.0201	0.1135	0.0205	0.0406	0.0409	0.0189
	2.2	1.9	0.3	2.0	2.0	1.9	1.9
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	> 5.354	1.039	> 5.205		1.022	0.0035	1.041
	0.1069	0.0023	0.0948		0.0059	0.0002	0.0187
	2.0	0.2	1.8		0.6	5.9	1.8

Lab Id: **CB61091 - DIL**Measure Date: **10/2/2018 9:28:15 PM**Client Id: **CB61091 - DIL**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449756-WQ-DIL	50	50	100	5	5.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0044	0.1101	-0.0013	0.0360	0.0631	-0.0027	30.73
	0.0048	0.0183	0.0021	0.0012	0.0003	0.0003	0.3199
	109.0	16.6	161.0	3.5	0.5	10.6	1.0
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	-0.0002	-0.0022	0.0007	-0.0015	0.2730	2.931	8.552
	0.0001	0.0010	0.0004	0.0030	0.0098	0.0360	0.2633
	39.5	47.2	66.8	201.6	3.6	1.2	3.1
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.1573	0.0044	39.67	-0.0004	-0.0016	0.0014	-0.0027
	0.0063	0.0010	0.5930	0.0007	0.0005	0.0030	0.0045
	4.0	22.0	1.5	172.4	32.6	205.8	170.3
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.0163	0.0072	0.0054		0.0048	# -0.0019	0.0056
	0.0029	0.0010	0.0007		0.0042	0.0013	0.0003
	17.6	13.4	13.8		86.8	67.3	5.5

Lab Id: **CCV**Measure Date: **10/2/2018 9:30:56 PM**

Client Id:

Matrix		Weight	Volume	Pct Solid	Dilution	Factor	Units
		1	1	100	1	1.000	ppm
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2549	1.011	1.004	0.9941	1.036	1.044	1.029
	0.0029	0.0071	0.0286	0.0410	0.0034	0.0125	0.0025
	1.1	0.7	2.8	4.1	0.3	1.2	0.2
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.030	1.031	1.005	1.004	1.014	4.923	1.041
	0.0288	0.0377	0.0345	0.0090	0.0381	0.0548	0.0441
	2.8	3.7	3.4	0.9	3.8	1.1	4.2
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.012	0.9983	4.991	1.015	1.028	1.004	0.9913
	0.0325	0.0352	0.0412	0.0369	0.0255	0.0452	0.0290
	3.2	3.5	0.8	3.6	2.5	4.5	2.9
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	1.002	1.018	1.025		1.024	0.2539	1.008
	0.0385	0.0034	0.0288		0.0038	0.0072	0.0318
	3.8	0.3	2.8		0.4	2.8	3.2

Lab Id: **CCB**Measure Date: **10/2/2018 9:33:36 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag -0.0001	Al # -0.0012	As -0.0001	B -0.0012	Ba -0.0010	Be -0.0006	Ca -0.0027
	0.0002	0.0002	0.0002	0.0001	0	0	0.0008
	432.7	15.5	307.7	10.0	1.2	5.3	30.2
Conc Mean Std Dev RSD %	Cd -0.0001	Co -0.0007	Cr 0.0001	Cu -0.0007	Fe -0.0008	K -0.0075	Mg -0.0009
	0	0.0002	0.0001	0.0002	0	0.0001	0
	14.3	30.3	88.3	25.4	6.4	1.6	4.3
Conc Mean Std Dev RSD %	Mn -0.0002	Mo 0.0012	Na 0.0156	Ni -0.0005	Pb -0.0005	Sb > 0.0083	Se 0.0005
	0	0.0004	0.0004	0.0002	0.0005	0.0026	0.0003
	9.0	34.9	2.3	38.4	107.3	31.6	63.5
Conc Mean Std Dev RSD %	Sn 0.0026	Ti 0.0015	Tl -0.0007	U	V -0.0005	W # 0.0004	Zn -0.0006
	0.0006	0.0002	0.0003		0.0011	0.0004	0.0001
	24.3	11.8	40.4		196.9	107.3	8.1

Lab Id: **CB61091 - PS**Measure Date: **10/2/2018 9:36:17 PM**Client Id: **CB61091 - PS**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449756-WQ-PSX	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2430	1.048	1.929	1.022	1.072	1.019	30.47
	0.0017	0.0055	0.0127	0.0059	0.0014	0.0037	0.2527
	0.7	0.5	0.7	0.6	0.1	0.4	0.8
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.9732	0.9934	0.9699	0.9925	1.235	8.028	8.671
	0.0118	0.0049	0.0059	0.0092	0.0086	0.0450	0.0414
	1.2	0.5	0.6	0.9	0.7	0.6	0.5
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.127	0.9760	45.69	0.9775	1.947	> 2.032	0.9461
	0.0124	0.0056	0.4037	0.0058	0.0081	0.0323	0.0070
	1.1	0.6	0.9	0.6	0.4	1.6	0.7
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	> 4.956	0.9854	> 4.903		0.9746	0.0036	0.9871
	0.0281	0.0046	0.0438		0.0068	0	0.0070
	0.6	0.5	0.9		0.7	1.3	0.7

Lab Id: **CCV**Measure Date: **10/2/2018 10:02:54 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2532	1.001	1.020	1.013	1.034	1.053	1.029
	0.0030	0.0168	0.0254	0.0216	0.0035	0.0073	0.0205
	1.2	1.7	2.5	2.1	0.3	0.7	2.0
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.019	1.046	1.022	0.9903	1.036	4.824	1.039
	0.0268	0.0197	0.0204	0.0157	0.0220	0.1048	0.0177
	2.6	1.9	2.0	1.6	2.1	2.2	1.7
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.012	1.017	4.908	1.034	1.044	1.026	1.012
	0.0231	0.0198	0.0944	0.0193	0.0158	0.0271	0.0234
	2.3	1.9	1.9	1.9	1.5	2.6	2.3
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	1.017	1.016	1.047		1.013	0.2584	1.027
	0.0202	0.0027	0.0190		0.0214	0.0031	0.0173
	2.0	0.3	1.8		2.1	1.2	1.7

Lab Id: **CCB**Measure Date: **10/2/2018 10:05:35 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag -0.0005	Al # -0.0003	As -0.0003	B -0.0014	Ba -0.0009	Be -0.0005	Ca -0.0027
	0.0002	0.0006	0.0004	0.0001	0	0	0.0005
	32.6	244.5	127.7	10.1	3.0	3.6	20.2
Conc Mean Std Dev RSD %	Cd -0.0001	Co -0.0005	Cr 0.0001	Cu -0.0007	Fe -0.0001	K -0.0066	Mg -0.0007
	0	0.0001	0.0001	0.0006	0.0004	0.0002	0.0001
	55.0	25.7	85.3	77.0	276.1	3.7	14.3
Conc Mean Std Dev RSD %	Mn -0.0002	Mo 0.0011	Na 0.0232	Ni -0.0006	Pb -0.0001	Sb > 0.0087	Se -0.0003
	0.0001	0.0003	0.0006	0.0001	0	0.0024	0.0006
	34.9	26.8	2.7	23.7	34.8	27.6	251.6
Conc Mean Std Dev RSD %	Sn 0.0022	Ti 0.0016	Tl -0.0004	U	V -0.0005	W # 0.0005	Zn -0.0007
	0.0006	0.0002	0.0006		0.0003	0.0002	0.0001
	26.8	12.9	167.8		63.7	42.9	12.8

Lab Id: **CB61531**Measure Date: **10/2/2018 10:18:56 PM**Client Id: **EQUIPMENT BLANK**

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
449756-WS-S15	50	50	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0002	0.0702	-0.0009	0.0331	0.0331	-0.0007	39.36
	0.0005	0.0032	0.0002	0.0008	0.0003	0	0.2721
	315.8	4.6	26.1	2.3	0.8	3.0	0.7
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0001	-0.0005	0.0014	0.0569	0.0450	2.341	9.356
	0	0.0002	0.0001	0.0005	0.0009	0.0242	0.0852
	11.4	31.6	5.6	0.8	2.0	1.0	0.9
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0059	0.0001	28.90	0.0021	0.0003	# 0.0001	-0.0006
	0.0001	0	0.1740	0.0004	0.0006	0.0008	0.0010
	1.2	51.6	0.6	20.6	225.6	872.4	161.2
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.0006	-0.0001	-0.0008		0.0005	# 0.0000	0.0248
	0.0001	0.0001	0.0005		0.0008	0.0002	0.0002
	24.1	75.5	60.7		163.0	709.4	0.6

Lab Id: **CCV**Measure Date: **10/2/2018 10:34:55 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.2556	1.011	1.002	0.9820	1.039	1.054	1.033
	0.0061	0.0089	0.0217	0.0238	0.0021	0.0040	0.0131
	2.4	0.9	2.2	2.4	0.2	0.4	1.3
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	1.022	1.022	0.9985	1.002	1.006	4.830	1.037
	0.0118	0.0186	0.0159	0.0136	0.0176	0.0386	0.0031
	1.2	1.8	1.6	1.4	1.8	0.8	0.3
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	1.004	0.9886	4.903	1.008	1.033	1.001	0.9928
	0.0093	0.0180	0.0282	0.0167	0.0254	0.0375	0.0204
	0.9	1.8	0.6	1.7	2.5	3.7	2.1
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.9910	1.018	1.025		1.019	0.2536	1.001
	0.0197	0.0021	0.0187		0.0102	0.0067	0.0162
	2.0	0.2	1.8		1.0	2.6	1.6

Lab Id: **CCB**Measure Date: **10/2/2018 10:37:34 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0007	# -0.0015	-0.0001	-0.0015	-0.0010	-0.0006	-0.0036
	0.0006	0.0003	0.0006	0.0002	0	0	0.0007
	84.9	20.3	570.5	12.6	3.5	5.1	18.4
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	-0.0001	-0.0005	0.0001	-0.0009	-0.0008	-0.0078	-0.0009
	0	0.0002	0.0001	0.0008	0.0005	0.0002	0
	19.8	32.4	59.1	92.8	64.9	2.3	1.1
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	-0.0002	0.0011	0.0136	-0.0002	-0.0004	> 0.0084	0.0010
	0	0.0003	0.0007	0.0002	0	0.0017	0.0005
	14.2	29.7	5.5	70.0	13.4	20.8	50.4
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.0016	0.0014	-0.0004		-0.0011	# 0.0004	-0.0007
	0.0007	0.0001	0.0003		0.0012	0.0004	0
	42.9	6.3	73.9		102.4	103.9	1.7

Lab Id: **CRDL**Measure Date: **10/2/2018 10:40:15 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0061	0.0576	0.0201	0.0582	0.0096	0.0045	> 0.0690
	0.0009	0.0009	0.0006	0.0018	0	0	0.0027
	15.3	1.5	2.8	3.1	0.5	0.7	3.9
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0046	0.0046	0.0054	0.0045	0.0274	0.5213	0.0550
	0.0002	0.0002	0.0001	0.0004	0.0006	0.0296	0.0009
	4.8	4.8	1.9	8.9	2.2	5.7	1.7
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0050	0.0509	0.5200	0.0051	0.0100	0.0302	0.0498
	0.0001	0.0012	0.0243	0.0002	0.0007	0.0005	0.0010
	2.6	2.3	4.7	4.8	7.0	1.8	2.0
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	0.1007	0.0528	0.0203		0.0112	# 0.0001	0.0111
	0.0028	0.0001	0.0005		0.0006	0.0001	0.0002
	2.7	0.1	2.6		5.0	175.9	2.2

Lab Id: **ICSA**Measure Date: **10/2/2018 10:45:35 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.0013	29.58	-0.0029	0.0014	-0.0010	-0.0007	> 159.1
	0.0012	0.0477	0.0006	0.0003	0	0	0.4083
	90.5	0.2	21.7	24.8	2.5	4.2	0.3
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.0017	0.0005	0.0004	0.0000	> 130.8	-0.0082	> 77.24
	0.0001	0.0003	0.0004	0.0004	2.207	0.0002	1.320
	5.3	73.5	114.2	1200	1.7	2.5	1.7
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.0007	-0.0021	23.21	0.0002	0.0098	0.0093	-0.0090
	0	0.0003	0.3451	0.0003	0.0009	0.0006	0.0019
	2.8	16.3	1.5	181.8	8.7	6.1	21.3
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0002	-0.0042	# -0.0100		# -0.0090	# -0.0213	0.0079
	0.0003	0	0.0002		0.0016	0.0009	0.0001
	135.9	0.2	1.5		17.4	4.3	1.9

Lab Id: **ICSAB**Measure Date: **10/2/2018 10:48:14 PM**

Client Id:

Matrix	Weight	Volume	Pct Solid	Dilution	Factor	Units	
	1	1	100	1	1.000	ppm	
Conc Mean Std Dev RSD %	Ag	Al	As	B	Ba	Be	Ca
	0.3227	> 30.14	1.057	0.5188	0.3105	0.1056	> 161.9
	0.0061	0.1019	0.0268	0.0094	0.0016	0.0015	0.7420
	1.9	0.3	2.5	1.8	0.5	1.5	0.5
Conc Mean Std Dev RSD %	Cd	Co	Cr	Cu	Fe	K	Mg
	0.3141	0.3102	0.3222	0.3106	> 133.4	17.30	> 78.54
	0.0072	0.0072	0.0090	0.0051	4.323	0.2747	2.527
	2.3	2.3	2.8	1.6	3.2	1.6	3.2
Conc Mean Std Dev RSD %	Mn	Mo	Na	Ni	Pb	Sb	Se
	0.2094	0.3100	22.93	0.3032	1.073	1.072	0.5129
	0.0051	0.0061	0.2827	0.0065	0.0280	0.0319	0.0202
	2.4	2.0	1.2	2.2	2.6	3.0	3.9
Conc Mean Std Dev RSD %	Sn	Ti	Tl	U	V	W	Zn
	-0.0011	1.040	1.026		0.3058	# -0.0211	0.3203
	0.0004	0.0042	0.0291		0.0063	0.0006	0.0071
	42.1	0.4	2.8		2.1	2.8	2.2

NWW

Total Metals Digestion, Waters

TMD-WM-449562

QAQC Code #Q\$ICP

QAQC Sample #

CB61316

09/28/18 5:41 PM

Sample / C#	Acode	Dept	Initial Vol(ml)	Auto Block #	Final Vol (ml)	IPH	Comments	Start Date	Finish Date	Initials
CB61316 **	BLK		50	6	50		5	09/28	09/29	AG
CB61316 **	LCS		50	6	50		0.5mL of	09/28	09/29	AG
CB61316 **	MS		50	6	50		0.5mL of	09/28	09/29	AG
CB61316 **	DUP		50	6	50			09/28	09/29	AG
CB60783 - 1	TMD-WM	ICP13 ICPMS1	50	6	50	<2		09/28	09/29	AG
CB60896 - 1	TMD-WM	ICP3	50	6	50	<2		09/28	09/29	AG
CB61163 ** -	TMD-WM	ICP1	50	6	50	<2		09/28	09/29	AG
CB61309 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG
CB61310 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG
CB61311 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG
CB61312 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG
CB61313 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG
CB61314 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG
CB61315 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG
CB61316 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG
CB61317 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG
CB61318 ** -	TMD-WM	ICP2	50	6	50	<2		09/28	09/29	AG

QC Rpt Cmmt

Prep Comment Metals: Ag1, As1, Ba1, Be1, Cd12, Cr11, Cu1, Ni2, Pb1, Sb1, Se1, V1, Zn3 ||

Post Comment

Surrogate Id #

Tracking #

Time In 19:00

Spike #

Tracking #

Time Out 0:30

LCSID #

Tracking #

Temp 95C

Standards

Time Basic

Vendor Id	Item ID	Phoenix Lot Number	Vendor Lot Number	Expiration Date
Absolute Stand	Tungsten 1000 ppm			
Absolute Stand	Zirconium (Zr)			
Fisher	Hydrochloric Acid	S#FF4	4118050	09/27/19
Fisher	Nitric Acid	S#F6Z	1118030	09/26/19
Inorganic Ventu	100 PPM Gold HCL 125mL			
Inorganic Ventu	Second Source 1	S#EBW	M2-MEB663178	09/24/19
Inorganic Ventu	Second Source 2	S#EC2	M2-MEB662007	09/24/19

NWW

Total Metals Digestion, Waters

TMD-WM-449756

QAQC Code #Q\$ICP

QAQC Sample # CB61091

10/01/18 3:01 PM

Sample / C#	Acode	Dept	Initial Vol(ml)	Auto Block #	Final Vol (ml)	IPH	Comments	Start Date	Finish Date	Initials
CB61091	BLK		50	6	50		2	10/01	10/02	AG
CB61091	LCS		50	6	50		0.5mL of	10/01	10/02	AG
CB61091	MS		50	6	50		0.5mL of	10/01	10/02	AG
CB61091	DUP		50	6	50			10/01	10/02	AG
CB60505 - 8	TMD-WM	ICP11	50	6	50	<2		10/01	10/02	AG
CB60506 - 4	TMD-WM	ICP11	50	6	50	<2		10/01	10/02	AG
CB60507 - 7	TMD-WM	ICP11	50	6	50	<2		10/01	10/02	AG
CB60508 - 7	TMD-WM	ICP11	50	6	50	<2		10/01	10/02	AG
CB60509 - 7	TMD-WM	ICP11	50	6	50	<2		10/01	10/02	AG
CB60510 - 6	TMD-WM	ICP11	50	6	50	<2		10/01	10/02	AG
CB60511 - 7	TMD-WM	ICP11	50	6	50	<2		10/01	10/02	AG
CB60512 - 7	TMD-WM	ICP11	50	6	50	<2		10/01	10/02	AG
CB60515 - 7	TMD-WM	ICP7	50	6	50	<2		10/01	10/02	AG
CB60516 - 7	TMD-WM	ICP7	50	6	50	<2		10/01	10/02	AG
CB60517 - 10	TMD-WM	ICP7	50	6	50	<2		10/01	10/02	AG
CB61089 - 3	TMD-WM	ICP13 ICPMS1	50	6	50	<2		10/01	10/02	AG
CB61090 - 3	TMD-WM	ICP13 ICPMS1	50	6	50	<2		10/01	10/02	AG
CB61091 - 4	TMD-WM	ICP13 ICPMS1	50	6	50	<2		10/01	10/02	AG
CB61531 ** -	TMD-WM	ICP2	50	6	50	<2		10/01	10/02	AG
CB61718 ** -	TMD-WM	ICP19 ICPMS3	50	6	50	<2		10/01	10/02	AG
CB61719 ** -	TMD-WM	ICP19 ICPMS3	50	6	50	<2		10/01	10/02	AG
CB61720 ** -	TMD-WM	ICP19 ICPMS3	50	6	50	<2		10/01	10/02	AG
CB61721 ** -	TMD-WM	ICP19 ICPMS3	50	6	50	<2		10/01	10/02	AG

QC Rpt Cmmt

Prep Comment Metals: Ag7, Al12, As15, Ba15, Be7, Ca4, Cd19, Co4, Cr19, Cu18, Fe12, K4, Mg4, Mn12, Na12, Ni10, Pb18, Sb3, Se11, V7, Zn10 ||

Post Comment

Surrogate Id #

Tracking #

Time In 19:00

Spike #

Tracking #

Time Out 0:30

LCSID #

Tracking #

Temp 95C

Standards

Time Basic

Vendor Id	Item ID	Phoenix Lot Number	Vendor Lot Number	Expiration Date
Absolute Stand	Tungsten 1000 ppm			
Absolute Stand	Zirconium (Zr)			
Fisher	Hydrochloric Acid	S#FF4	4118050	09/27/19
Fisher	Nitric Acid	S#F6Z	1118030	09/26/19
Inorganic Ventu	100 PPM Gold HCL 125mL			
Inorganic Ventu	Second Source 1	S#EBW	M2-MEB663178	09/24/19
Inorganic Ventu	Second Source 2	S#EC2	M2-MEB662007	09/24/19



587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone: 860.645.1102 • Fax: 860.645.0823

NY ANALYTICAL SERVICES PROTOCOL
DATA PACKAGE

Client: Enviroscience Consultants

PREFERRED PLATING

Laboratory Project: GCB61309

Semi-Volatiles (Water)

Ver 1

Organic Data Flags

LOD(MDL): Limit of Detection or Method Detection Limit
The minimum reportable concentration that can be measured with confidence.

PQL(RL): Practical Quantitation Level or Reporting Level
This value is at or above the MDL and is supported by the lowest calibration standard.

Q Qualifiers:

- U - The compound was analyzed for but not detected at or above the MDL. The number immediately preceding the "U" represents the PQL reporting level corrected for percent solids, weight and/or volume calculations, and dilution factors.
- J - Indicates an estimated value, may indicate one of the following, depending on the situation:
 - a) The reported value is estimated and below the MDL
 - b) Used when estimating a concentration for TIC where a 1:1 response is assumed or when the result indicates the presence of a compound that meets the identification criteria, but the results is less than the quantitation limit, but greater than zero.
 - c) QC associated with this analyte is within warning limits.
- X - The concentration is not reported. This quantitation file was not evaluated for this compound at this dilution; a volatile purging or related issue may be the cause.
- L - Biased Low
- N - The concentration is based on the response of the nearest internal. This flag is used on the TIC form for all compounds identified.
- S - This compound is a solvent that is used in the laboratory. Laboratory contamination is suspected if concentration is less than five times the reporting level.
- B - This compound was also present in the method blank
- D - The reported concentration is the result of a diluted analysis.
- E - The reported value is estimated because the concentration exceeded the calibration range.
- A - Indicates that the tentatively identified compound is a suspected aldol condensation product. Aldol condensation products are produced during the extraction process.
- Q - For TICS, this compound was quantitated using a calibration curve. This compound is part of the instrument method, but not part of the client target list.
- P - Percent difference is greater than 25% between the two GC columns and the lower result is reported.



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06040
Tel. (860) 645-1102 Fax (860) 645-0823



SDG: GCB61309

SVOADIOX Conformance / Non-Conformance Summary

Project ID / Client ID: PREFERRED PLATING, Enviroscience Consultants

The samples were analyzed for a semivolatile list of compounds by GC/MS full scan analysis.

Form 1 (Analysis):

No observations noted.

Form 3 (Laboratory Control/Matrix Spike):

Sample: CB61316 LCS

All LCS recoveries met criteria with the following exceptions: None.
All LCSD recoveries met criteria with the following exceptions: None.
All LCS/LCSD RPDs met criteria with the following exceptions: None.

Sample: CB61316 MS

All MS recoveries met criteria with the following exceptions: None.
All MSD recoveries met criteria with the following exceptions: None.
All MS/MSD RPDs met criteria with the following exceptions: None.

Form 4 (Method Blank):

File: CHEM22 1002_04.D

All compounds were non-detect with the following exceptions: None.

Form 5 (Tune):

File: CHEM22 0918_01.D

All Tune criteria was met with the following exceptions: None.

File: CHEM22 1002_01A.D

All Tune criteria was met with the following exceptions: None.

Form 6 (Initial Calibration):

Calibration: CHEM22 09/18/18 - 09/18/18

100% of method compounds met criteria.

The following compounds did not meet % deviation criteria: None.

The following compounds did not meet maximum % deviations: None.

The following compounds did not meet recommended response factors: None.

The following compounds did not meet minimum response factors: None.

Note: The initial calibration standards are extracted by the lab and the raw concentrations are in ug/L based on a 100mL sample and a final volume of 1mL.

Form 7 (Continuing Calibration):

File: CHEM22 1002_03.D (Opening)

100% of method compounds met criteria.

Internal standard areas were within 50%-200% of the initial calibration with the following exceptions: None.

The following compounds did not meet % deviation criteria: None.

The following compounds did not meet maximum % deviations: None.

The following compounds did not meet recommended response factors: None.

The following compounds did not meet minimum response factors: None.



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SDG: GCB61309

SVOADIOX Conformance / Non-Conformance Summary

Project ID / Client ID: PREFERRED PLATING, Enviroscience Consultants

File: CHEM22 1002_21.D (Closing)

The following compounds did not meet maximum % deviations: None.

The following compounds did not meet minimum response factors: None.

Form 8 (Internal Standard and Retention Time):

File: CHEM22 - 0918_05.D

All samples met internal standard area and retention time criteria with the following exceptions: None.

File: CHEM22 - 1002_03.D

All samples met internal standard area and retention time criteria with the following exceptions: None.

10/24/18

Jon Carlson

Project Manager

Lab Name: Phoenix Environmental Labs Client: ENV-SCI

Lab Code: Phoenix Case No: SAS No: SDG No: GCB61309

LCS Spike - Client Id: CB61316 LCS Level: (low/med)

[illegible]

WATER MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Matrix Spike - Client Id: CB61316 / ERT-3 MS Level:(low/med)

[illegible]

Page 150 of 217

4B
METHOD BLANK SUMMARY

Client ID

CB61316 BLANK

Lab Name: Phoenix Environmental Labs

Client: ENV-SCI

Lab Code: Phoenix Case No.:

SAS No.:

SDG No.: GCB61309

Lab File ID: 1002_04.D

Lab Sample ID: CB61316 BLK

Instrument ID: CHEM22

Date Extracted: 10/01/2018

Matrix: (soil/water) Water

Date Analyzed: 10/02/2018

Level: (low/med)

Time Analyzed: 19:46

QC Batch Id: 449743

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	CB61316 LCS	CB61316 LCS	CHEM22 - 1002_05.D	10/02/18
02	CB61316 LCSD	CB61316 LCSD	CHEM22 - 1002_06.D	10/02/18
03	ERT-3 MS	CB61316 MS	CHEM22 - 1002_07.D	10/02/18
04	ERT-3 MSD	CB61316 MSD	CHEM22 - 1002_08.D	10/02/18
05	ERT-3	CB61316	CHEM22 - 1002_09.D	10/02/18
06	ERT-6	CB61309	CHEM22 - 1002_10.D	10/02/18
07	MW-6SS	CB61312	CHEM22 - 1002_11.D	10/02/18
08	ERT-5	CB61313	CHEM22 - 1002_12.D	10/02/18
09	FIELD DUPLICATE	CB61315	CHEM22 - 1002_13.D	10/02/18
10	EQUIPMENT BLANK	CB61531	CHEM22 - 1002_14.D	10/02/18
11				
12				
13				
14				
15				

COMMENTS:

FORM IV DIOX

5B
SEMIVOLATILE-DIOX ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Phoenix Environmental Labs Client: ENV-SCI

Lab Code: Phoenix Case No.: _____ SAS No.: _____ SDG No.: GCB61309

Lab File ID: 0918_01.D BFB Injection Date: 09/18/18

Instrument ID: CHEM22 BFB Injection Time: 19:43

GC Column: v factor 4 Heated Purge: (Y/N) Y

AutoFind: Scans 690, 691, 692; Background Corrected with Scan 686

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.4
75	30.0 - 60.0% of mass 95	48.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.6 (0.7)1
174	Greater than 50.0% of mass 95	82.0
175	5.0 - 9.0% of mass 174	8.0 (6.6)1
176	95.0 - 101.0% of mass 174	100.0 (82.3)1
177	5.0 - 9.0% of mass 176	6.3 (5.2)1

1-Value is % mass 95

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	
01	ICAL 0.25	0.25std;10s	0918_02.D	09/18/18	19:58	
02	ICAL 0.5	0.5std;10t	0918_03.D	09/18/18	20:14	
03	ICAL 1	1.0std;10w	0918_04.D	09/18/18	20:30	
04	ICAL 2.5	2.5std;10v	0918_05.D	09/18/18	20:46	
05	ICAL 10	10std;10u	0918_06.D	09/18/18	21:02	
06	ICAL 20	20std;10x	0918_07.D	09/18/18	21:17	
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

(*) Outside 12 hr clock

FORM V DIOX

BFB

Data Path : H:\SV2018\CHEM22\09SEP\18\
 Data File : 0918_01.D
 Acq On : 18 Sep 2018 7:43 pm
 Operator :
 Sample : BFB;10r
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: rteint.p
 Integration File signal 2: rteint2.p

Method : H:\SV2018\CHEM22\METHODS\DIOX_0906.M
 Title : Semivolatiles by GC/MS - EPA Method 625/8270
 Last Update : Sat Sep 15 00:53:09 2018

AutoFind: Scans 690, 691, 692; Background Corrected with Scan 686

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.4	31209	PASS
75	95	30	60	48.0	66816	PASS
95	95	100	100	100.0	139083	PASS
96	95	5	9	6.6	9151	PASS
173	174	0.00	2	0.7	813	PASS
174	95	50	100	82.0	114064	PASS
175	174	5	9	8.0	9157	PASS
176	174	95	101	100.4	114533	PASS
177	176	5	9	6.3	7242	PASS

DIOX_0906.M Tue Sep 18 19:53:34 2018

5B
SEMIVOLATILE-DIOX ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: Phoenix Environmental Labs

Client: ENV-SCI

Lab Code: Phoenix Case No.: _____

SAS No.: _____

SDG No.: GCB61309

Lab File ID: 1002_01A.D

BFB Injection Date: 10/02/18

Instrument ID: CHEM22

BFB Injection Time: 18:44

GC Column: v factor 4

Heated Purge: (Y/N) Y

AutoFind: Scans 688, 689, 690; Background Corrected with Scan 684

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.8
75	30.0 - 60.0% of mass 95	48.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	Greater than 50.0% of mass 95	84.0
175	5.0 - 9.0% of mass 174	7.5 (6.3)1
176	95.0 - 101.0% of mass 174	97.8 (82.1)1
177	5.0 - 9.0% of mass 176	6.7 (5.5)1

1-Value is % mass 95

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	CLIENT ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	
01	1.0std;10w	1.0std;10w	1002_03.D	10/02/18	19:30	
02	CB61316 BLANK	CB61316 BLANK	1002_04.D	10/02/18	19:46	
03	CB61316 LCS	CB61316 LCS	1002_05.D	10/02/18	20:02	
04	CB61316 LCSD	CB61316 LCSD	1002_06.D	10/02/18	20:18	
05	ERT-3 MS	CB61316 MS	1002_07.D	10/02/18	20:34	
06	ERT-3 MSD	CB61316 MSD	1002_08.D	10/02/18	20:50	
07	ERT-3	CB61316	1002_09.D	10/02/18	21:05	
08	ERT-6	CB61309	1002_10.D	10/02/18	21:21	
09	MW-6SS	CB61312	1002_11.D	10/02/18	21:37	
10	ERT-5	CB61313	1002_12.D	10/02/18	21:53	
11	FIELD DUPLICATE	CB61315	1002_13.D	10/02/18	22:09	
12	EQUIPMENT BLANK	CB61531	1002_14.D	10/02/18	22:24	
13	1.0std;10w	1.0std;10w	1002_21.D	10/03/18	00:15	
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

(*) Outside 12 hr clock

FORM V DIOX

BFB

Data Path : H:\SV2018\CHEM22\10OCT\02\
 Data File : 1002_01A.D
 Acq On : 2 Oct 2018 6:44 pm
 Operator :
 Sample : BFB;10r
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File signal 1: rteint.p
 Integration File signal 2: rteint2.p

Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
 Title : Semivolatiles by GC/MS - EPA Method 625/8270
 Last Update : Tue Sep 25 18:19:09 2018

AutoFind: Scans 688, 689, 690; Background Corrected with Scan 684

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.8	36540	PASS
75	95	30	60	48.7	77923	PASS
95	95	100	100	100.0	160157	PASS
96	95	5	9	7.0	11291	PASS
173	174	0.00	2	0.6	778	PASS
174	95	50	100	84.0	134488	PASS
175	174	5	9	7.5	10088	PASS
176	174	95	101	97.8	131541	PASS
177	176	5	9	6.7	8798	PASS

DIOX_0918.M Tue Oct 02 19:11:53 2018

8B
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Phoenix Environmental Labs Client: ENV-SCI

Lab Code: Phoenix Case No.: SAS No.: SDG No.: GCB61309

Lab File ID (Standard): 0918_05.D Date Analyzed: 09/18/18

Instrument ID: CHEM22 Time Analyzed: 20:46

	IS1 (THF) AREA #	RT #	AREA #	RT #	AREA #	RT #	File ID
12 HOUR STD	101126	2.14					0918_05.D
UPPER LIMIT	207308	2.64					0918_05.D
LOWER LIMIT	50057	1.64					0918_05.D
CLIENT ID							
01 ICAL 2.5	101126	2.14					0918_05.D
02 ICAL 0.25	110704	2.15					0918_02.D
03 ICAL 0.5	114427	2.15					0918_03.D
04 ICAL 1	110465	2.14					0918_04.D
05 ICAL 10	110363	2.14					0918_06.D
06 ICAL 20	109798	2.15					0918_07.D
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (THF) = Tetrahydrofuran

AREA UPPER LIMIT = +200% of internal standard area
 AREA LOWER LIMIT = - 50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
 * Values outside of QC limits.

FORM VIII DIOX

8B
INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: Phoenix Environmental Labs Client: ENV-SCI

Lab Code: Phoenix Case No.: SAS No.: SDG No.: GCB61309

Lab File ID (Standard): 1002_03.D Date Analyzed: 10/02/18

Instrument ID: CHEM22 Time Analyzed: 19:30

	IS1 (THF) AREA #	RT #	AREA #	RT #	AREA #	RT #	File ID
12 HOUR STD	101126	2.14					1002_03.D
UPPER LIMIT	207308	2.64					1002_03.D
LOWER LIMIT	50057	1.64					1002_03.D
CLIENT ID							
01 1.0std;10w	130238	2.16					1002_03.D
02 CB61316 BLANK	106608	2.18					1002_04.D
03 CB61316 LCS	112183	2.17					1002_05.D
04 CB61316 LCSD	108163	2.16					1002_06.D
05 ERT-3 MS	109962	2.17					1002_07.D
06 ERT-3 MSD	109723	2.16					1002_08.D
07 ERT-3	110944	2.18					1002_09.D
08 ERT-6	114691	2.16					1002_10.D
09 MW-6SS	110276	2.18					1002_11.D
10 ERT-5	112890	2.16					1002_12.D
11 FIELD DUPLICATE	120498	2.17					1002_13.D
12 EQUIPMENT BLANK	109846	2.18					1002_14.D
13 1.0std;10w	153879	2.16					1002_21.D
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (THF) = Tetrahydrofuran

AREA UPPER LIMIT = +200% of internal standard area
 AREA LOWER LIMIT = - 50% of internal standard area
 RT UPPER LIMIT = +0.50 minutes of internal standard RT
 RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
 * Values outside of QC limits.

FORM VIII DIOX

[illegible]

r=Result Reported U=Not Detected D=Reported Dilution E/J=Estimated Value X=Not Used S=Lab Solvent

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_10.D
Acq On : 2 Oct 2018 9:21 pm
Operator :
Client ID : ERT-6
Lab ID : CB61309
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 02 22:24:11 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

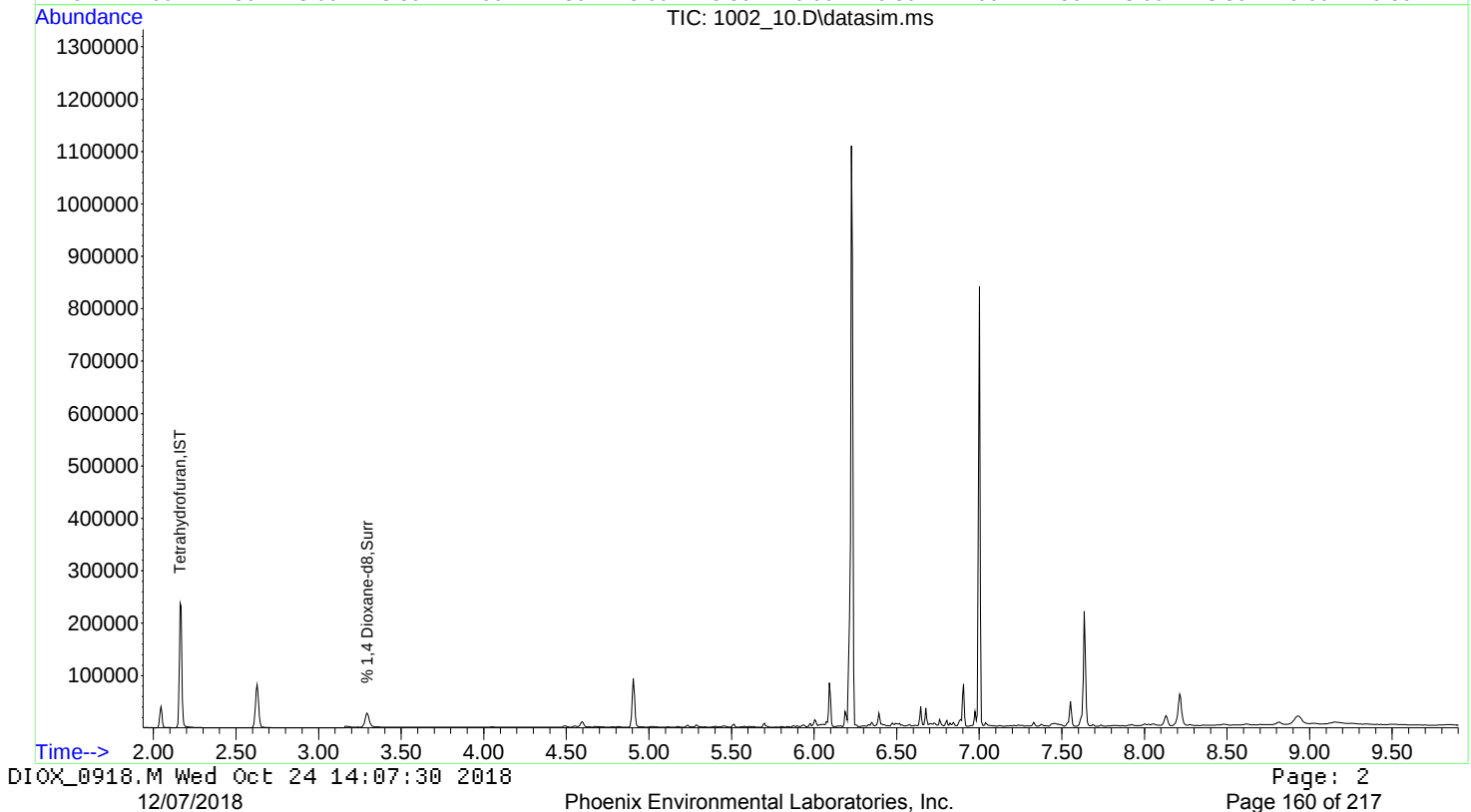
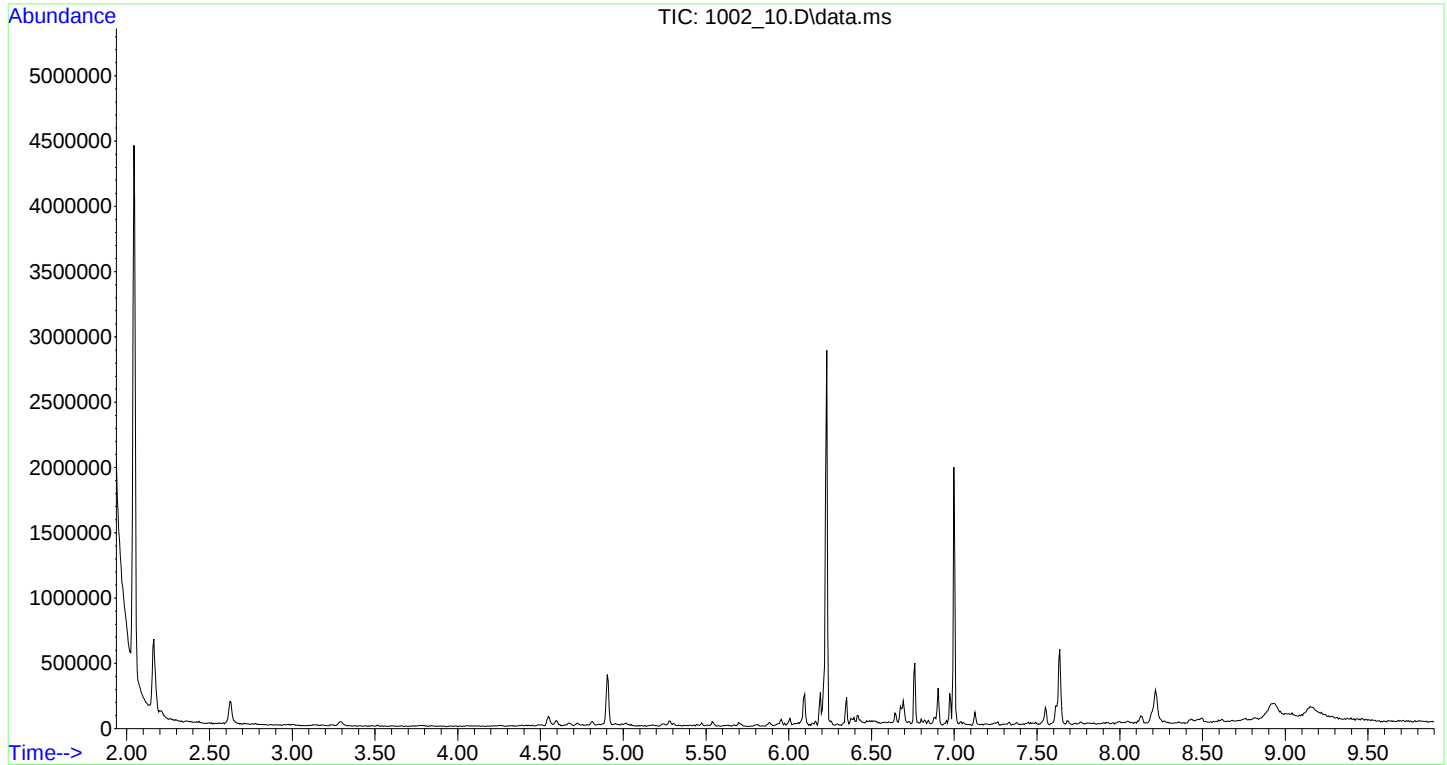
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.162	46	114691	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.293	64	16656	4.664	ug/L	0.00
Spiked Amount	5.000		Recovery	=	93.20%	
Target Compounds						
						Qvalue

(#)out of range (m)manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_10.D
Acq On : 2 Oct 2018 9:21 pm
Operator :
Client ID : ERT-6
Lab ID : CB61309
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Oct 02 22:24:11 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



[illegible]

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Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_11.D
Acq On : 2 Oct 2018 9:37 pm
Operator :
Client ID : MW-6SS
Lab ID : CB61312
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Oct 02 22:24:21 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

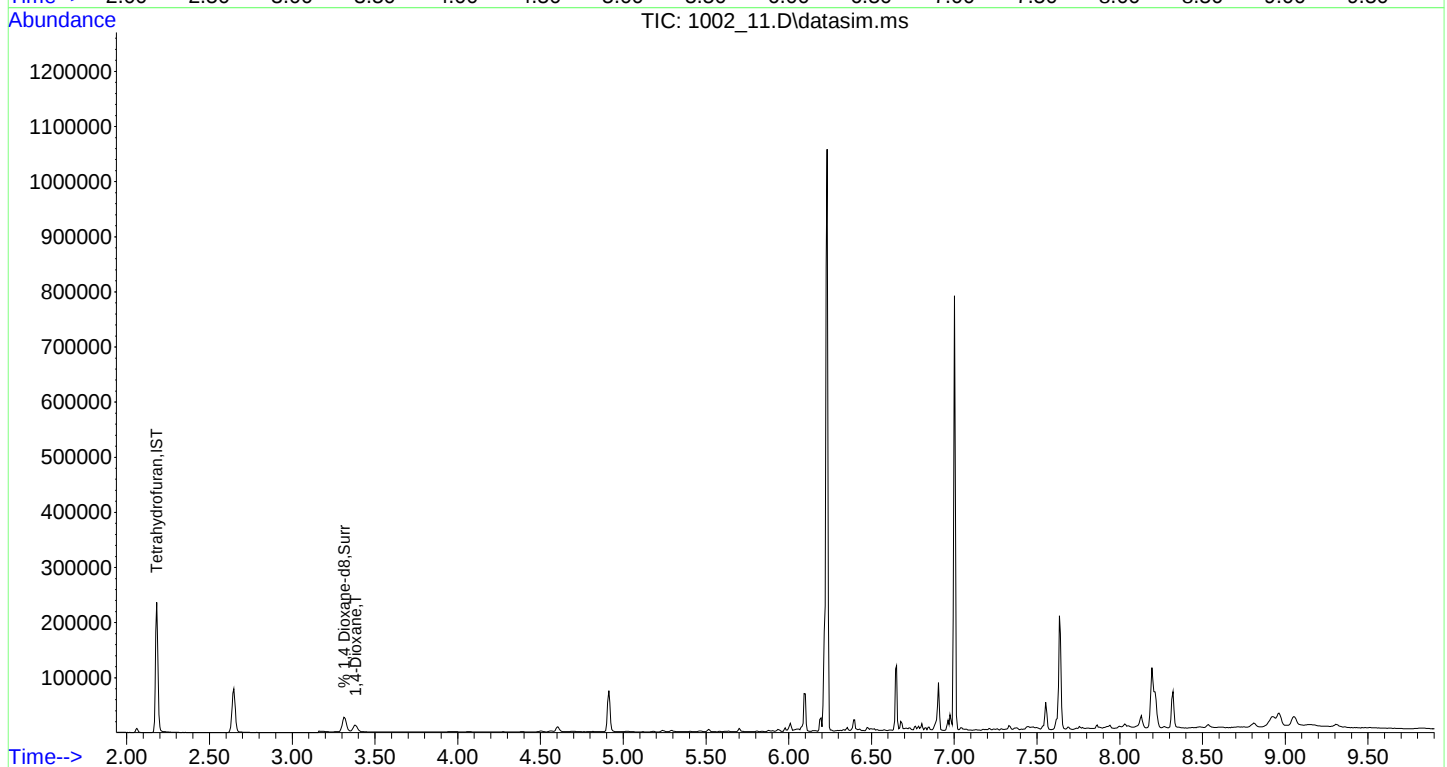
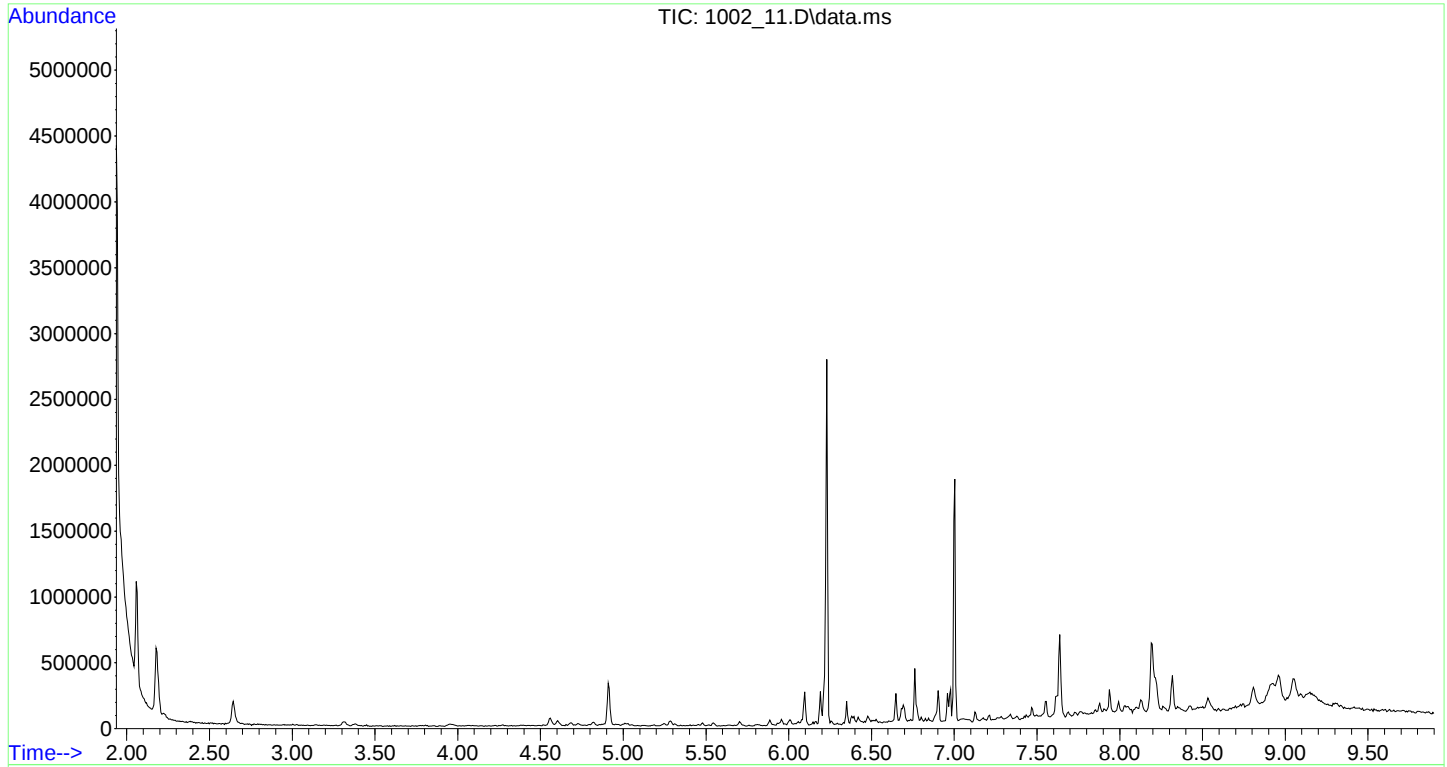
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.181	46	110276	5.000	ng	# 0.02
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.313	64	16480	4.799	ug/L	0.03
Spiked Amount	5.000		Recovery	=	96.00%	
Target Compounds						
2] 1,4-Dioxane	3.383	88	12216m	2.281	ug/L	Qvalue 90

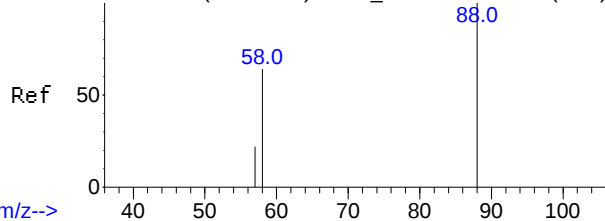
(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_11.D
Acq On : 2 Oct 2018 9:37 pm
Operator :
Client ID : MW-6SS
Lab ID : CB61312
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Oct 02 22:24:21 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



Abundance Scan 274 (3.329 min): 1023_03.D\data.ms (-268)



#2

1,4-Dioxane

Conc: 8\$ 2.281 ug/L

RT: 3.383 min Scan# 290

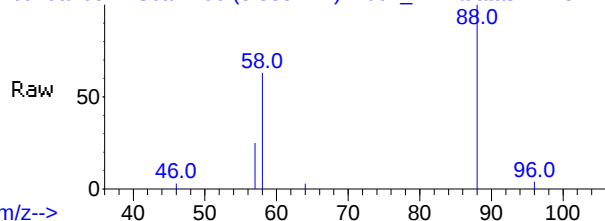
Delta R.T. 0.026 min

Lab File: 1002_11.D

Acq: 2 Oct 2018 9:37 pm

m/z-->

Abundance Scan 290 (3.383 min): 1002_11.D\data.ms



Tgt Ion: 88 Resp: 12216

Ion Ratio Lower Upper

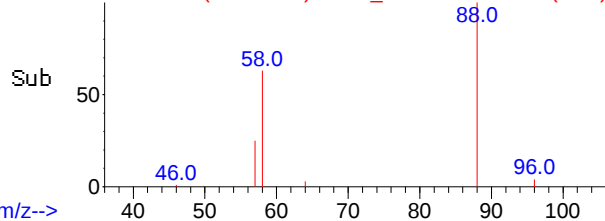
88 100

58 65.0 43.4 65.2

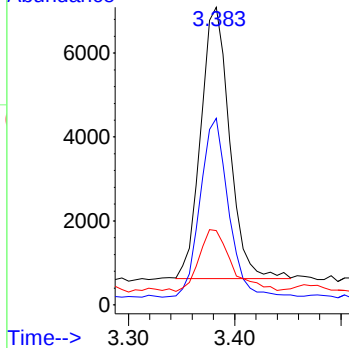
57 30.1 21.0 31.6

m/z-->

Abundance Scan 290 (3.383 min): 1002_11.D\data.ms (-254)



Abundance



Time-->

[illegible]

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Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_12.D
Acq On : 2 Oct 2018 9:53 pm
Operator :
Client ID : ERT-5
Lab ID : CB61313
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 02 22:24:26 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

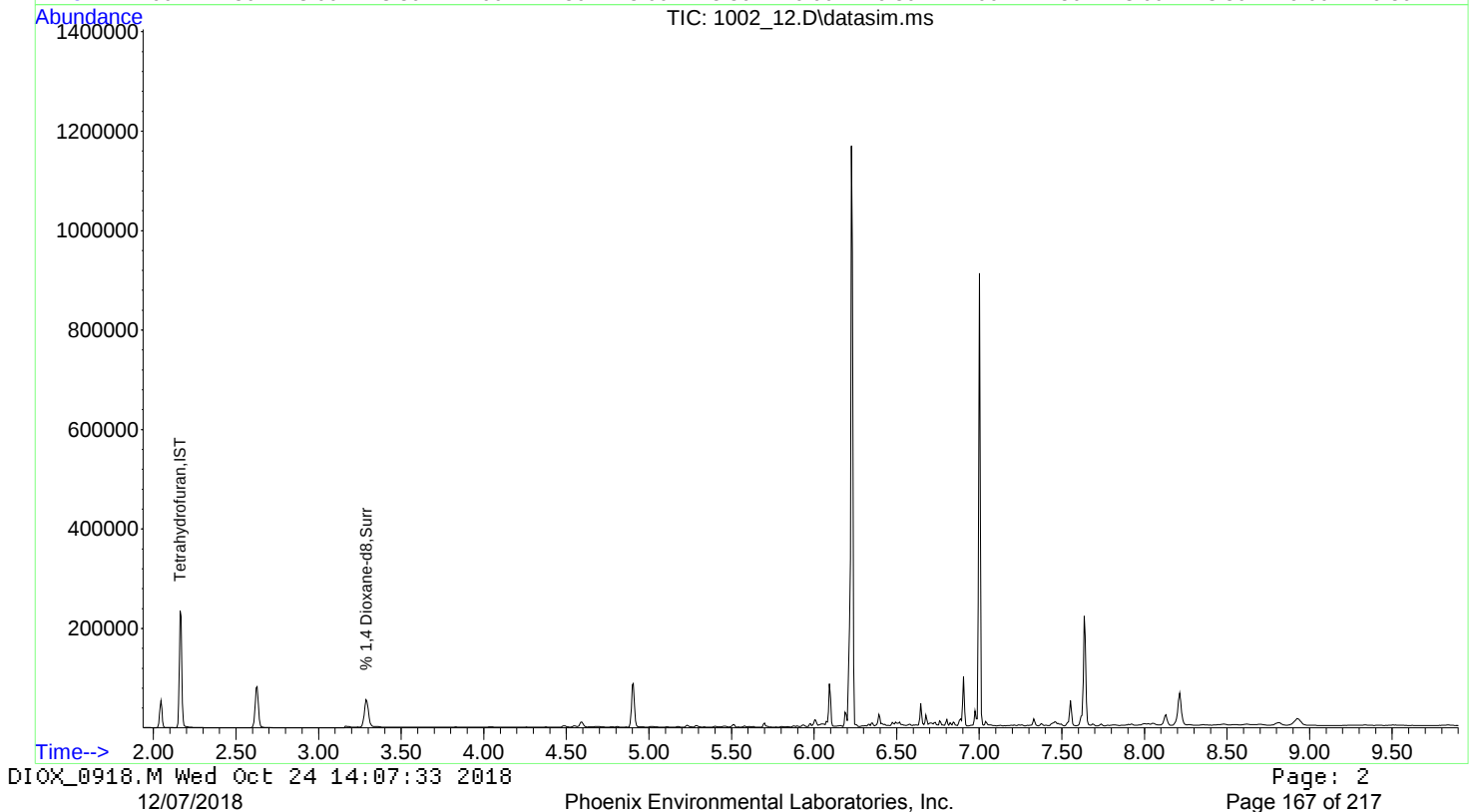
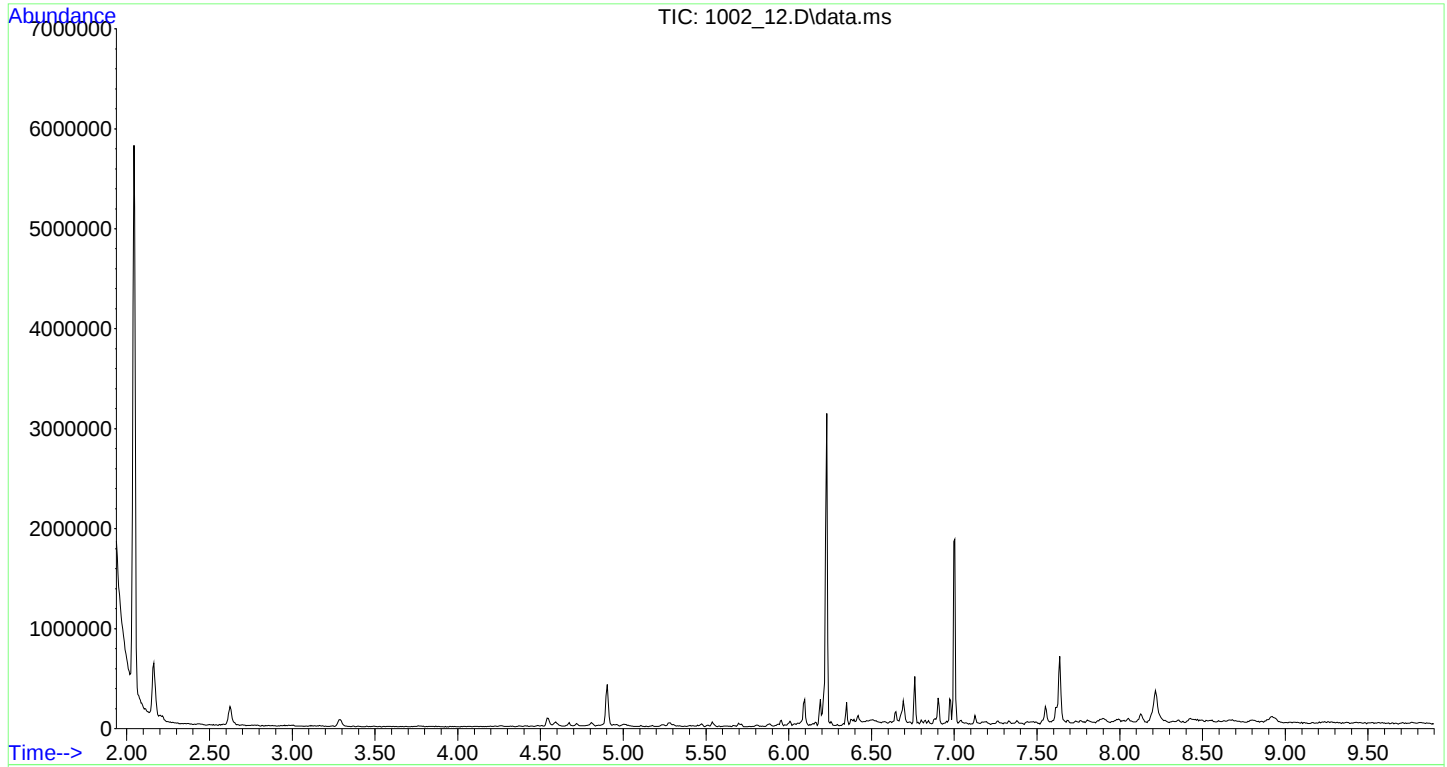
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.161	46	112890	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.287	64	34641	9.854	ug/L	0.00
Spiked Amount	5.000		Recovery	=	197.00%	
Target Compounds						
						Qvalue

(#)out of range (m)manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_12.D
Acq On : 2 Oct 2018 9:53 pm
Operator :
Client ID : ERT-5
Lab ID : CB61313
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Oct 02 22:24:26 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



FIELD DUPLICATE

[illegible]

FORM I DIOX

r=Result Reported U=Not Detected D=Reported Dilution E/J=Estimated Value X=Not Used S=Lab Solvent

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_13.D
Acq On : 2 Oct 2018 10:09 pm
Operator :
Client ID : FIELD DUPLICATE
Lab ID : CB61315
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 02 22:24:37 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

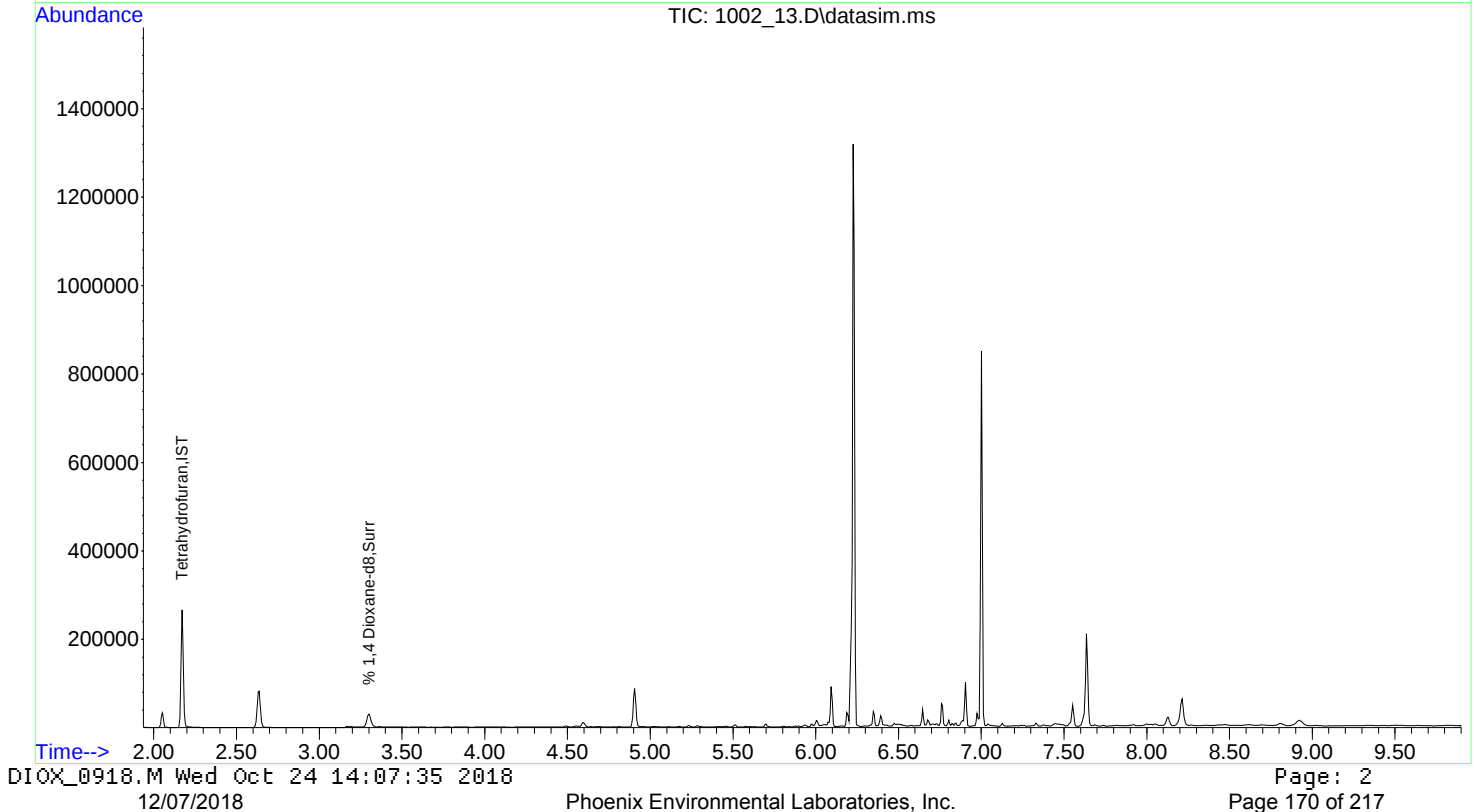
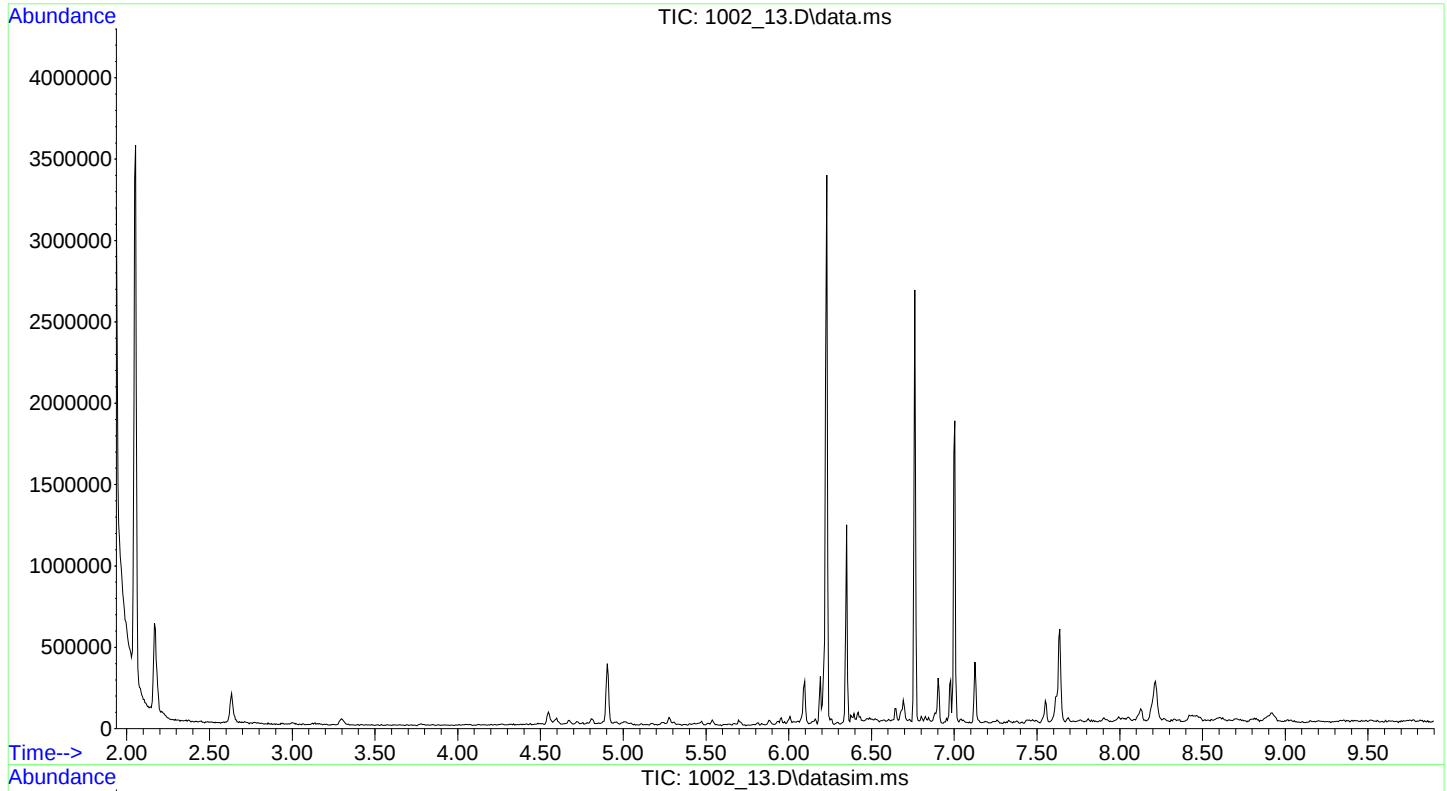
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.172	46	120498	5.000	ng	# 0.01
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.300	64	18203	4.851	ug/L	0.01
Spiked Amount	5.000		Recovery	=	97.00%	
Target Compounds						
						Qvalue

(#)out of range (m)manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_13.D
Acq On : 2 Oct 2018 10:09 pm
Operator :
Client ID : FIELD DUPLICATE
Lab ID : CB61315
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Oct 02 22:24:37 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



[illegible]

r=Result Reported U=Not Detected D=Reported Dilution E/J=Estimated Value X=Not Used S=Lab Solvent

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_09.D
Acq On : 2 Oct 2018 9:05 pm
Operator :
Client ID : ERT-3
Lab ID : CB61316
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 02 22:24:05 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

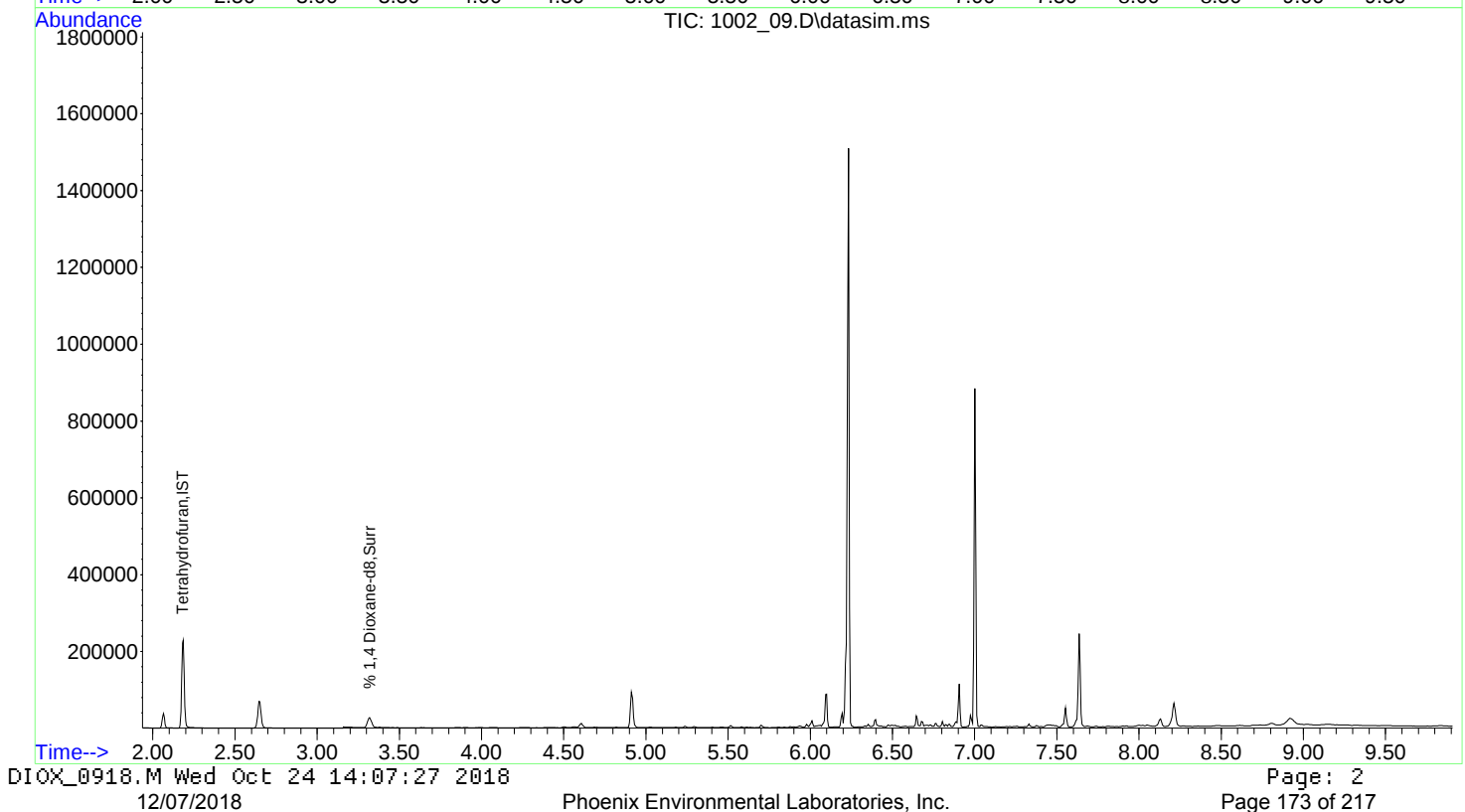
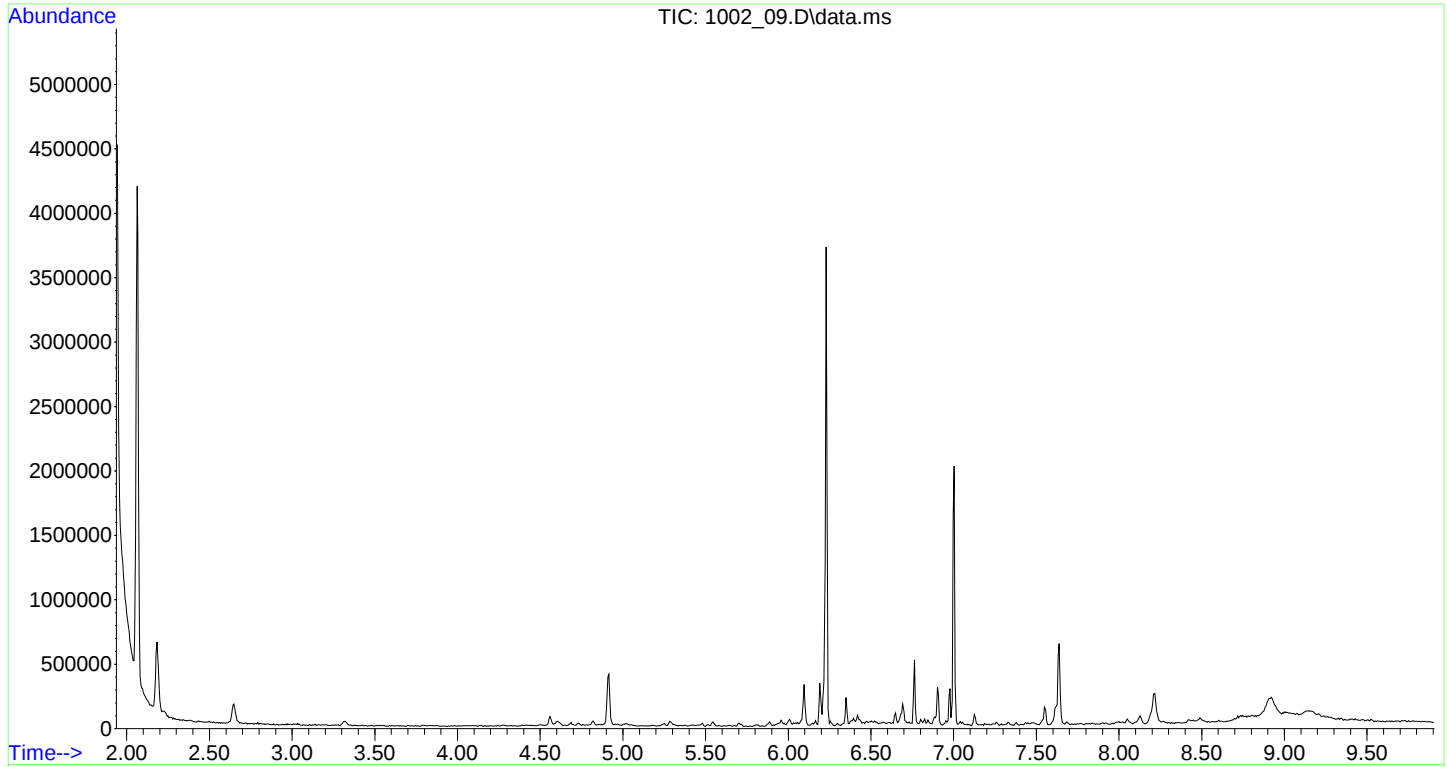
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.181	46	110944	5.000	ng	# 0.02
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.319	64	16559	4.793	ug/L	0.03
Spiked Amount	5.000		Recovery	=	95.80%	
Target Compounds						
						Qvalue

(#)out of range (m)manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_09.D
Acq On : 2 Oct 2018 9:05 pm
Operator :
Client ID : ERT-3
Lab ID : CB61316
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Oct 02 22:24:05 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



Client:	ENV-SCI			Lab:	Phoenix Env. Labs	
SDG No.:	GCB61309			Lab Sample ID:	CB61531	
Sample wt/vol:	100.0	(g/mL)	mL	Lab File ID:	1002_14.D	
Concentrated Extract Volume:	1000	(uL)		Date Received:	09/28/18	
% Moisture:	n.a.			Date Extracted:	10/01/18	
Instrument:	CHEM22	Inj. Vol.	2 (uL)	Date Analyzed:	10/02/18	
Purge Volume	N	pH:		Dilution Factor:	1	
Matrix: (soil/water)	Water			CONCENTRATION UNITS:(ug/L or ug/Kg) ug/L		

[illegible]

r=Result Reported U=Not Detected D=Reported Dilution E/J=Estimated Value X=Not Used S=Lab Solvent

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_14.D
Acq On : 2 Oct 2018 10:24 pm
Operator :
Client ID : EQUIPMENT BLANK
Lab ID : CB61531
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 02 23:50:55 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

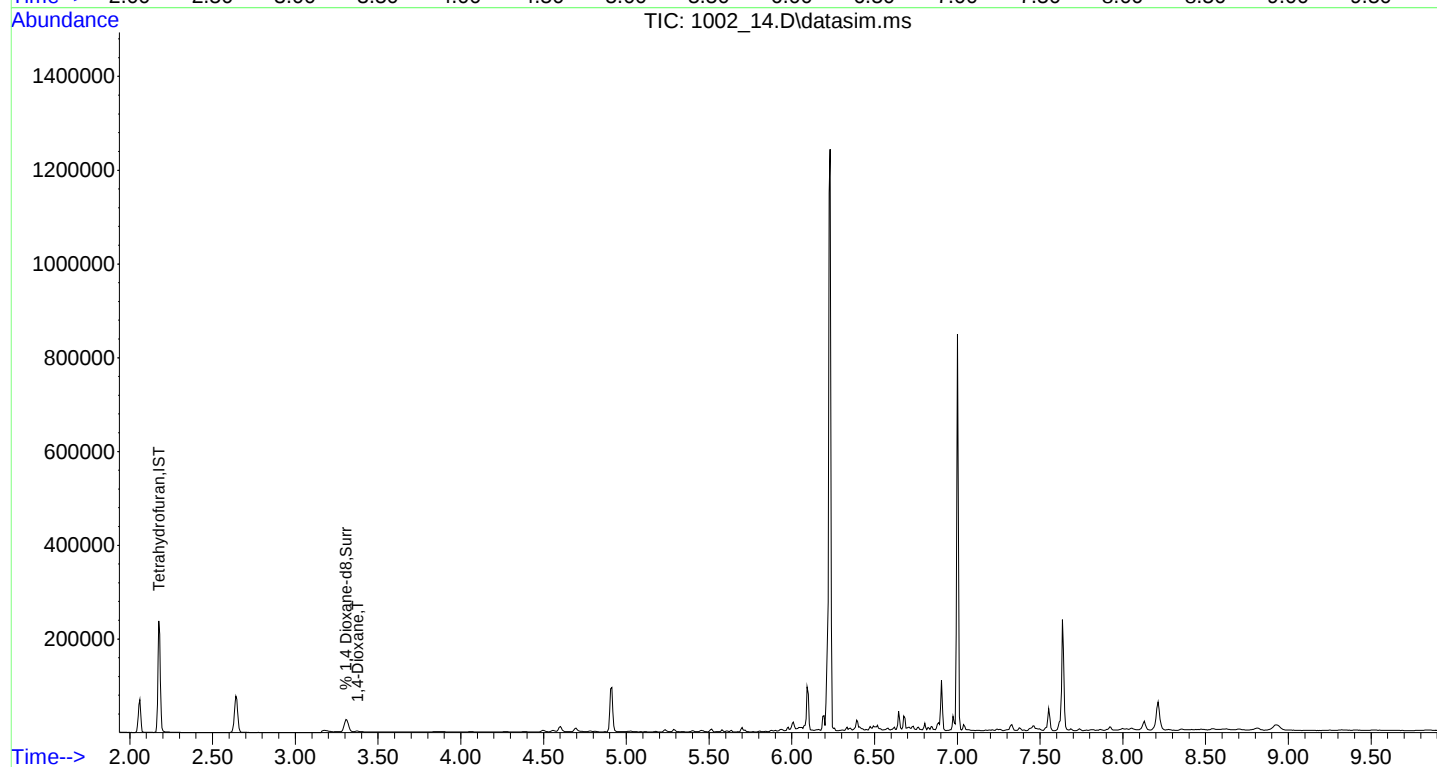
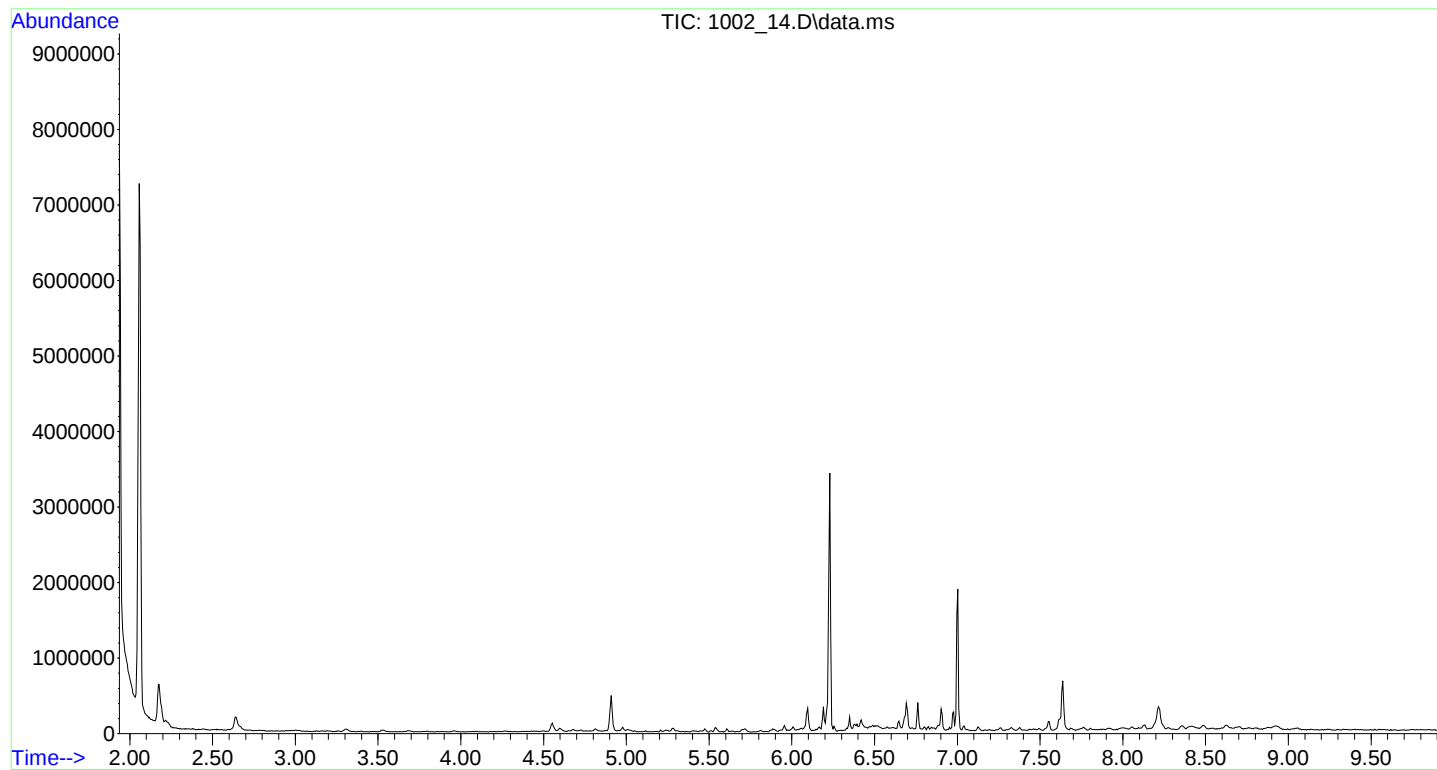
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.176	46	109846	5.000	ng	# 0.01
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.306	64	16992	4.968	ug/L	0.02
Spiked Amount 5.000			Recovery	=	99.40%	
Target Compounds						
2] 1,4-Dioxane	3.376	88	2062m	0.387	ug/L	Qvalue 63

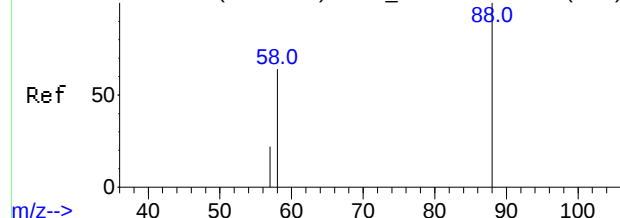
(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_14.D
Acq On : 2 Oct 2018 10:24 pm
Operator :
Client ID : EQUIPMENT BLANK
Lab ID : CB61531
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Oct 02 23:50:55 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

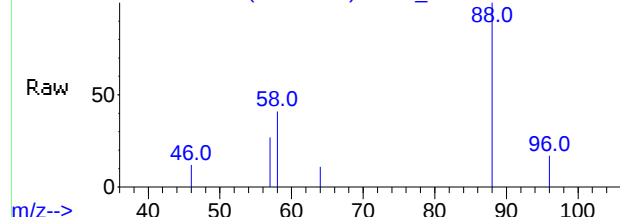


Abundance Scan 274 (3.329 min): 1023_03.D\data.ms (-268)



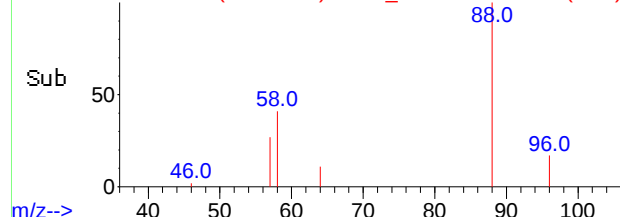
m/z-->

Abundance Scan 289 (3.376 min): 1002_14.D\data.ms



m/z-->

Abundance Scan 289 (3.376 min): 1002_14.D\data.ms (-254)



m/z-->

#2

1,4-Dioxane

Conc: 8\$ 0.387 ug/L

RT: 3.376 min Scan# 289

Delta R.T. 0.019 min

Lab File: 1002_14.D

Acq: 2 Oct 2018 10:24 pm

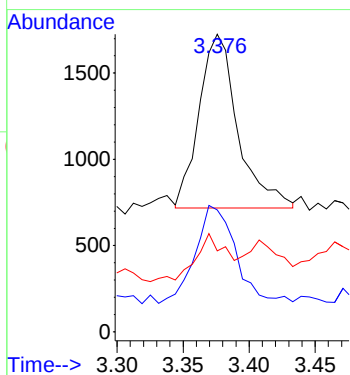
Tgt Ion: 88 Resp: 2062

Ion Ratio Lower Upper

88 100

58 77.4 43.4 65.2#

57 12.8 21.0 31.6#



Lab Name: Phoenix Environmental Labs

Client: ENV-SCI

Lab Code: Phoenix Case No.: SAS No.: SDG No.: GCB61309

Instrument ID: CHEM22 Calibration Date(s): 09/18/18 09/18/18

Heated Purge (Y/N):	n.a.	Calibration Time(s):	19:58	21:17
---------------------	------	----------------------	-------	-------

GC Column: v factor 4 Method File: DIOX_0918.M

LAB FILE ID:

RRF 5	<u>0918_02.D</u>	RRF 5	<u>0918_03.D</u>	RRF 5	<u>0918_04.D</u>	RRF 5	<u>0918_05.D</u>
RRF 10	<u>0918_06.D</u>	RRF 20	<u>0918_07.D</u>				

[illegible]

(*) Recommended RRF not met (+) %D exceeds criteria % (#) %D exceeds (maximum) %
 %D: 10% of target compounds are allowed to be above criteria %, but must be less than the (maximum) %

FORM VI DIOX

Method Path : H:\SV2018\CHEM22\METHODS\
Method File : DIOX_0918.M
Title : Semivolatiles by GC/MS - EPA Method 625/8270
Last Update : Tue Oct 23 02:29:25 2018
Response Via : Initial Calibration

Calibration Files (Note: Curves (l,lf,q,qf) display calculated conc and corr. coefficient.)

1 =0918_02.D 2 =0918_03.D 3 =0918_04.D 4 =0918_05.D 5 =0918_06.D 6 =0918_07.D

Compound	1	2	3	4	5	6	Avg	%RSD

1) IST Tetrahydrofuran	-----ISTD-----							
2) T 1,4-Dioxane	0.213	0.238	0.246	0.263	0.246	0.250	0.243	6.88
3) Surr% 1,4 Dioxane-d8	0.153	0.157	0.151	0.164	0.154	0.156	0.156	2.89

(#,\$,@)=Out of Range l=linear lf=linear(0,0) q=Quadratic qf=Quadratic(0,0)

Data Path : H:\SV2018\CHEM22\09SEP\18\
 Data File : 0918_02.D
 Acq On : 18 Sep 2018 7:58 pm
 Operator :
 Client ID : ICAL 0.25
 Lab ID : 0.25std;10s
 ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 10 07:04:13 2018
 Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
 Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
 QLast Update : Tue Oct 09 22:52:49 2018
 Response via : Initial Calibration

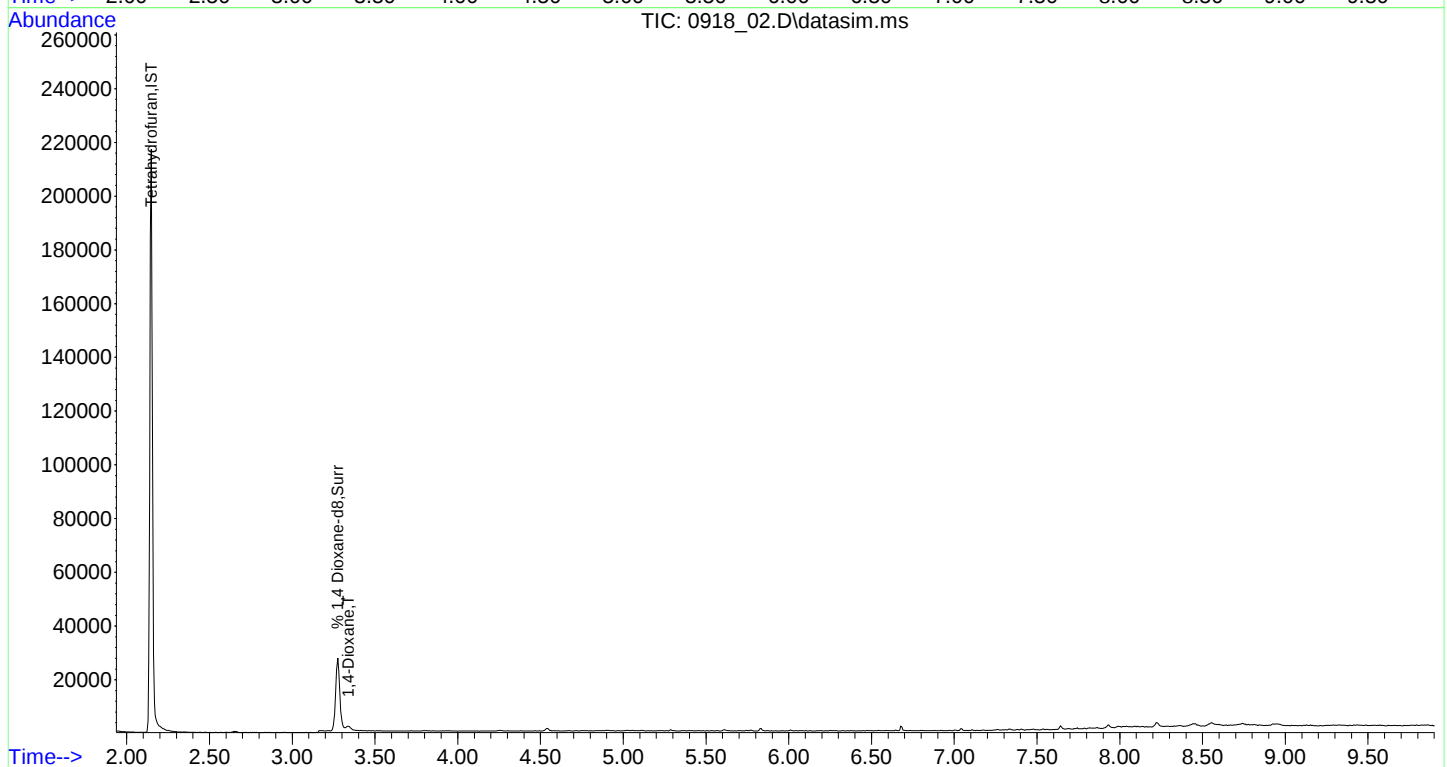
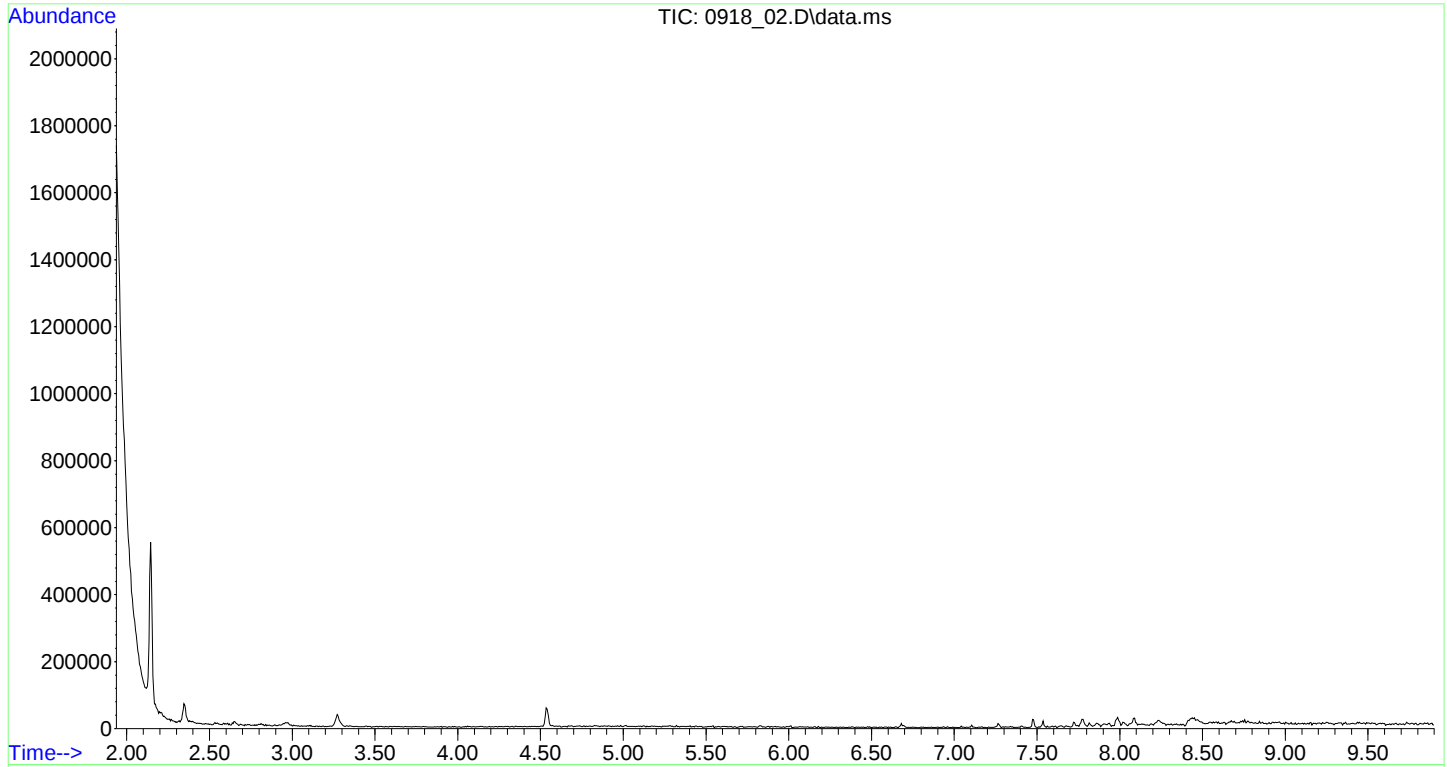
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.147	46	110704	5.000	ng	# 0.03
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.275	64	16983	4.927	ug/L	0.03
Spiked Amount 5.000			Recovery	=	98.60%	
Target Compounds						
2] 1,4-Dioxane	3.338	88	1175m	0.219	ug/L	Qvalue 59

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_02.D
Acq On : 18 Sep 2018 7:58 pm
Operator :
Client ID : ICAL 0.25
Lab ID : 0.25std;10s
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Oct 10 07:04:13 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 09 22:52:49 2018
Response via : Initial Calibration



Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_03.D
Acq On : 18 Sep 2018 8:14 pm
Operator :
Client ID : ICAL 0.5
Lab ID : 0.5std;10t
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 18 20:47:59 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 20:47:43 2018
Response via : Initial Calibration

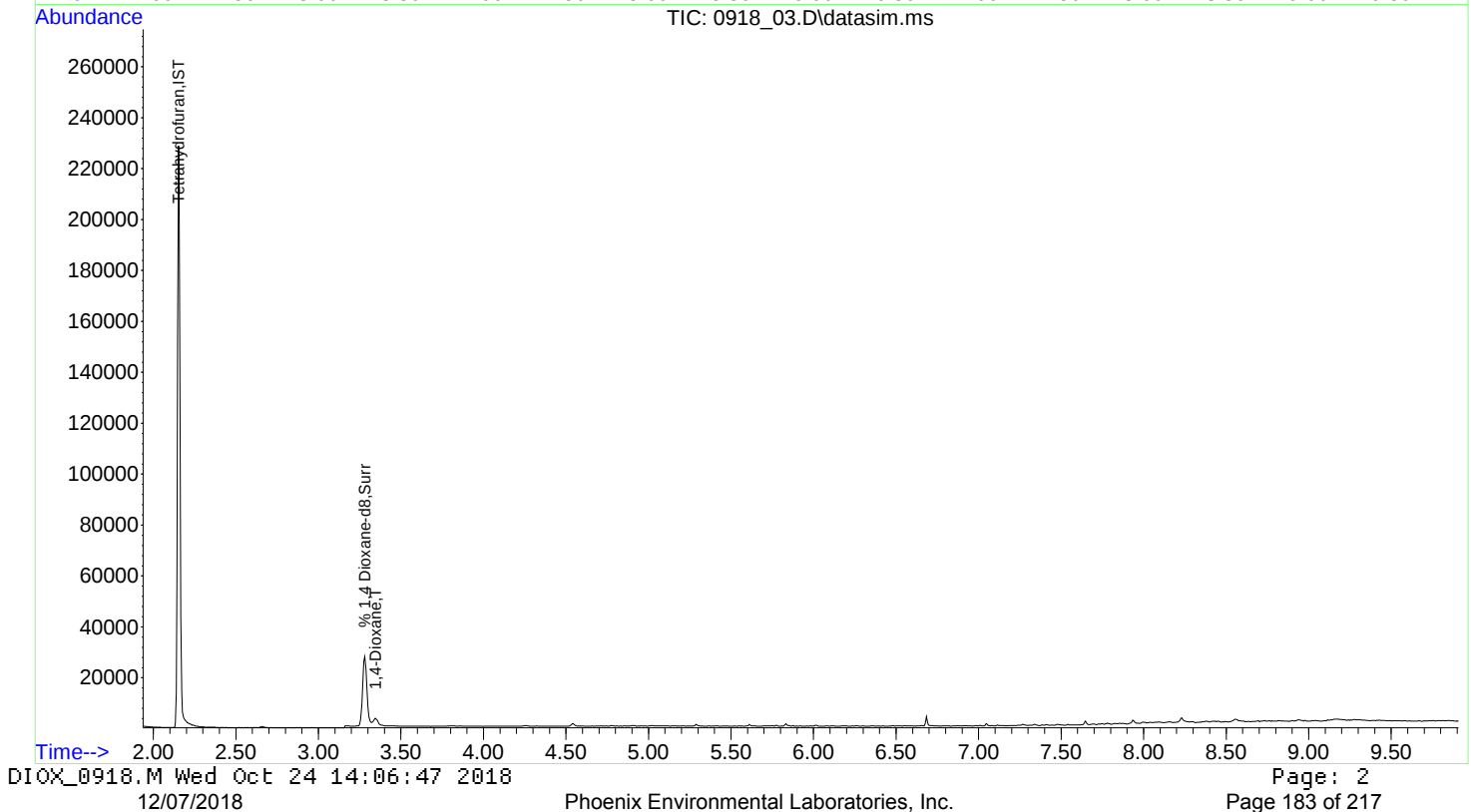
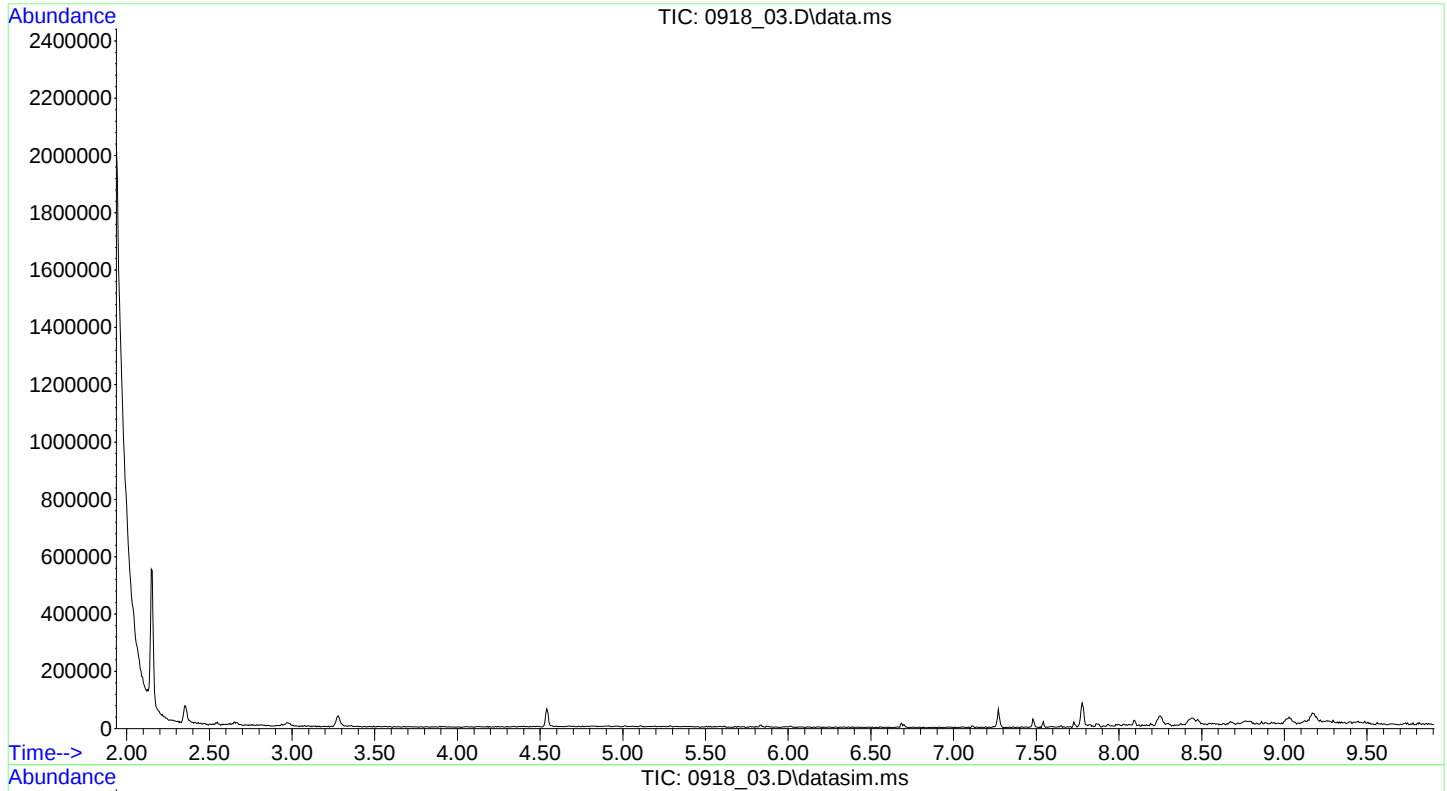
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.152	46	114427	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.281	64	17915	5.103	ug/L	0.00
Spiked Amount	5.000		Recovery	=	102.00%	
Target Compounds						
2] 1,4-Dioxane	3.345	88	2726m	0.559	ug/L	Qvalue 58

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_03.D
Acq On : 18 Sep 2018 8:14 pm
Operator :
Client ID : ICAL 0.5
Lab ID : 0.5std;10t
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 18 20:47:59 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 20:47:43 2018
Response via : Initial Calibration



Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_04.D
Acq On : 18 Sep 2018 8:30 pm
Operator :
Client ID : ICAL 1
Lab ID : 1.0std;10w
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 18 20:48:26 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 20:48:09 2018
Response via : Initial Calibration

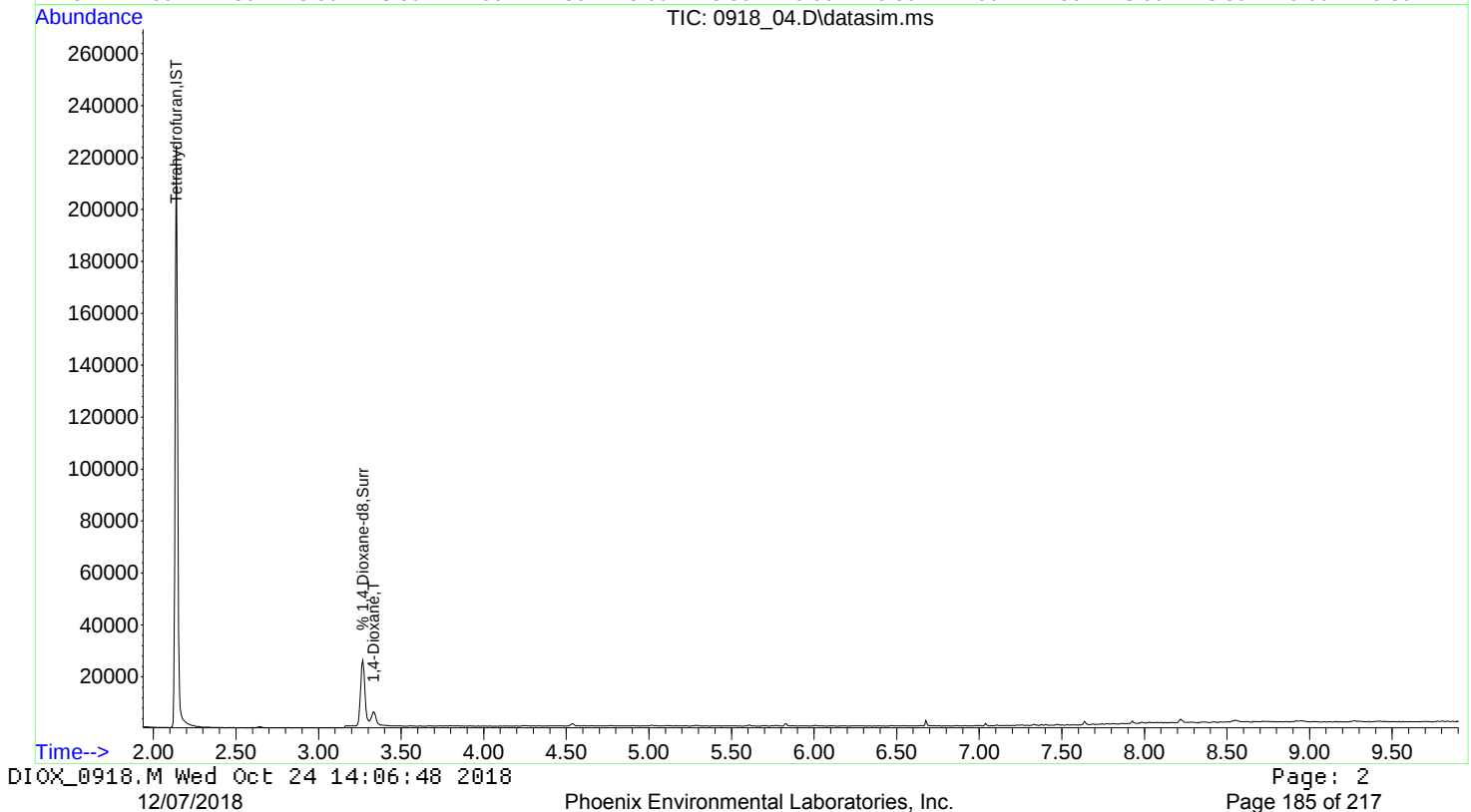
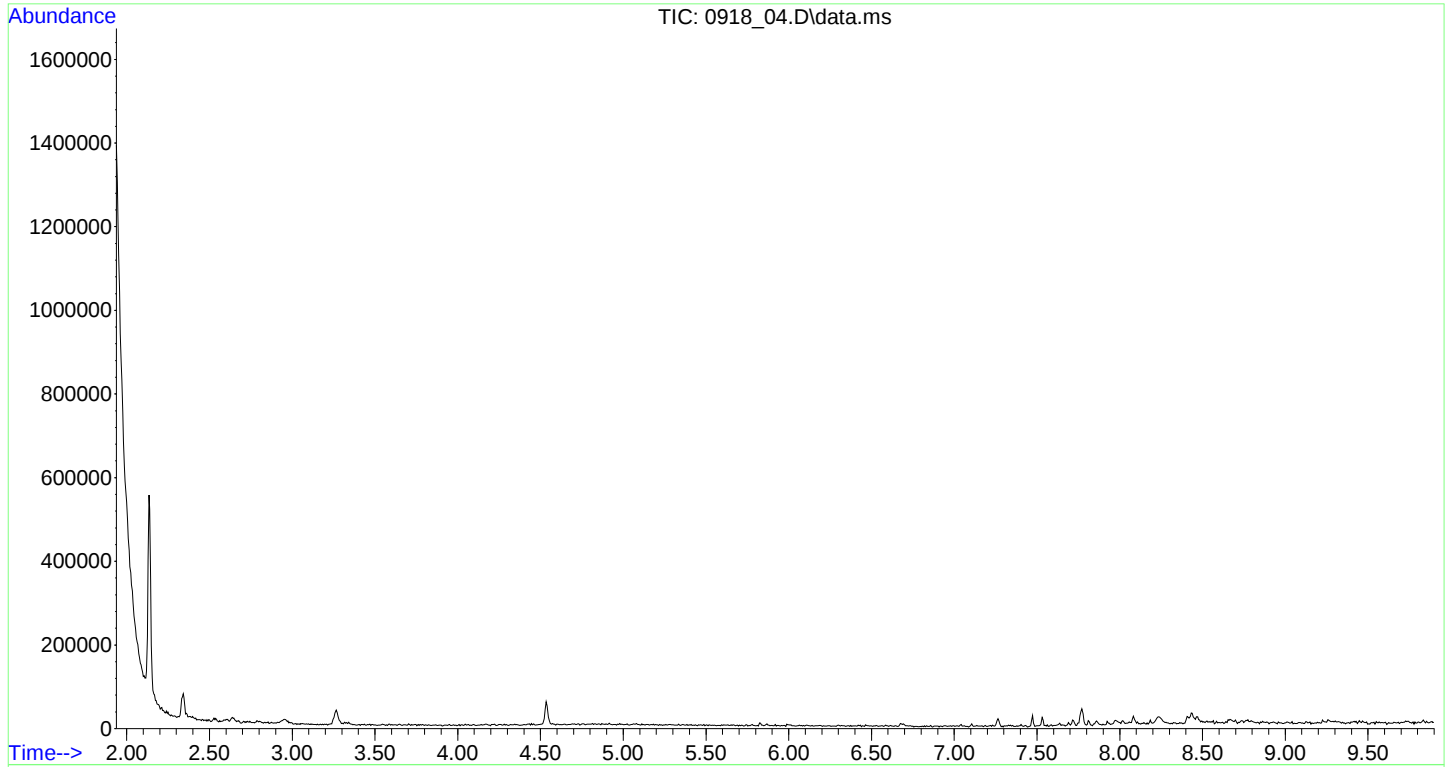
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.138	46	110465	5.000	ng	#-0.01
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.268	64	16659	4.865	ug/L	-0.01
Spiked Amount	5.000		Recovery	=	97.40%	
Target Compounds						
2] 1,4-Dioxane	3.332	88	5443m	1.092	ug/L	Qvalue 83

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_04.D
Acq On : 18 Sep 2018 8:30 pm
Operator :
Client ID : ICAL 1
Lab ID : 1.0std;10w
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Sep 18 20:48:26 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 20:48:09 2018
Response via : Initial Calibration



Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_05.D
Acq On : 18 Sep 2018 8:46 pm
Operator :
Client ID : ICAL 2.5
Lab ID : 2.5std;10v
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 18 21:11:06 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 20:48:45 2018
Response via : Initial Calibration

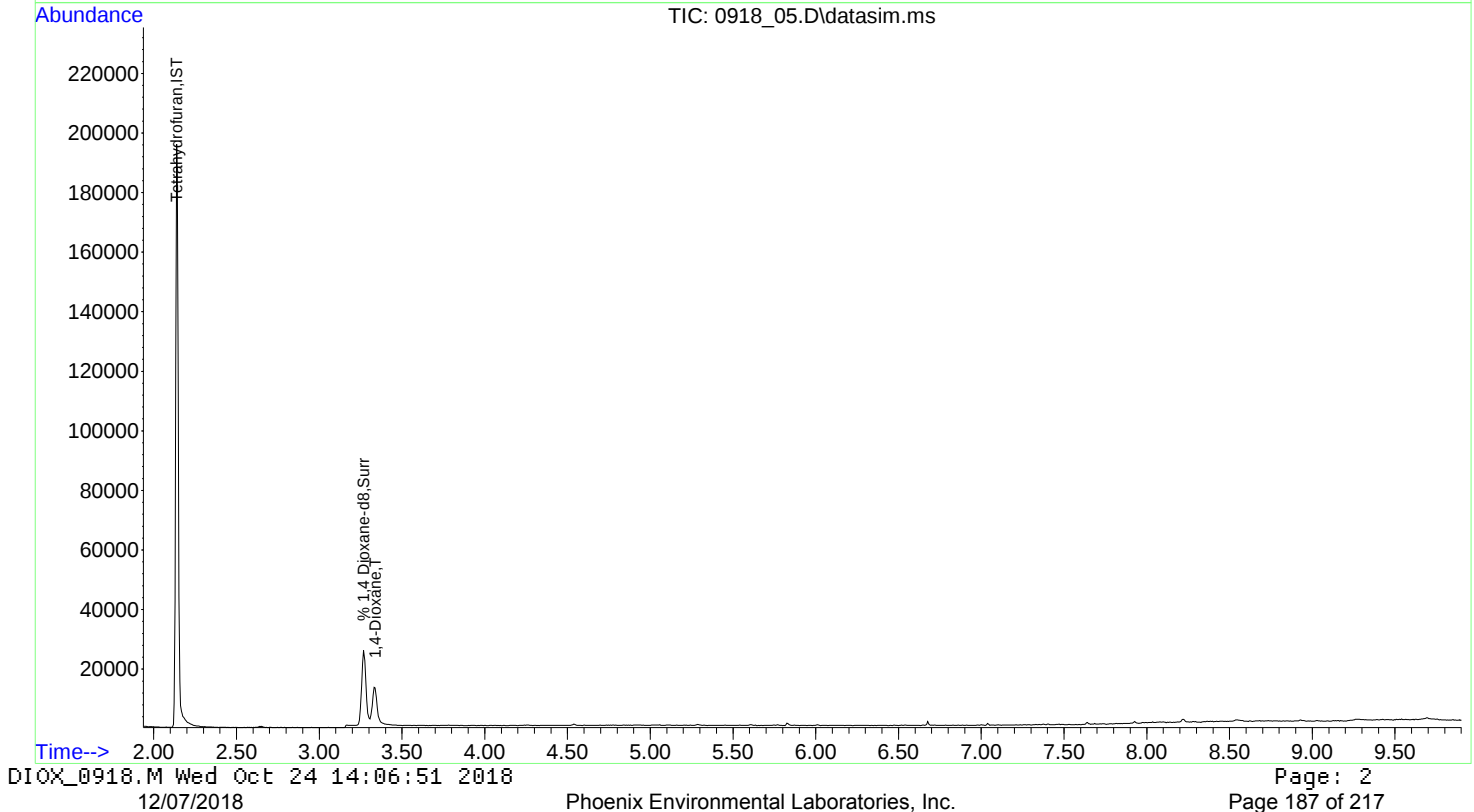
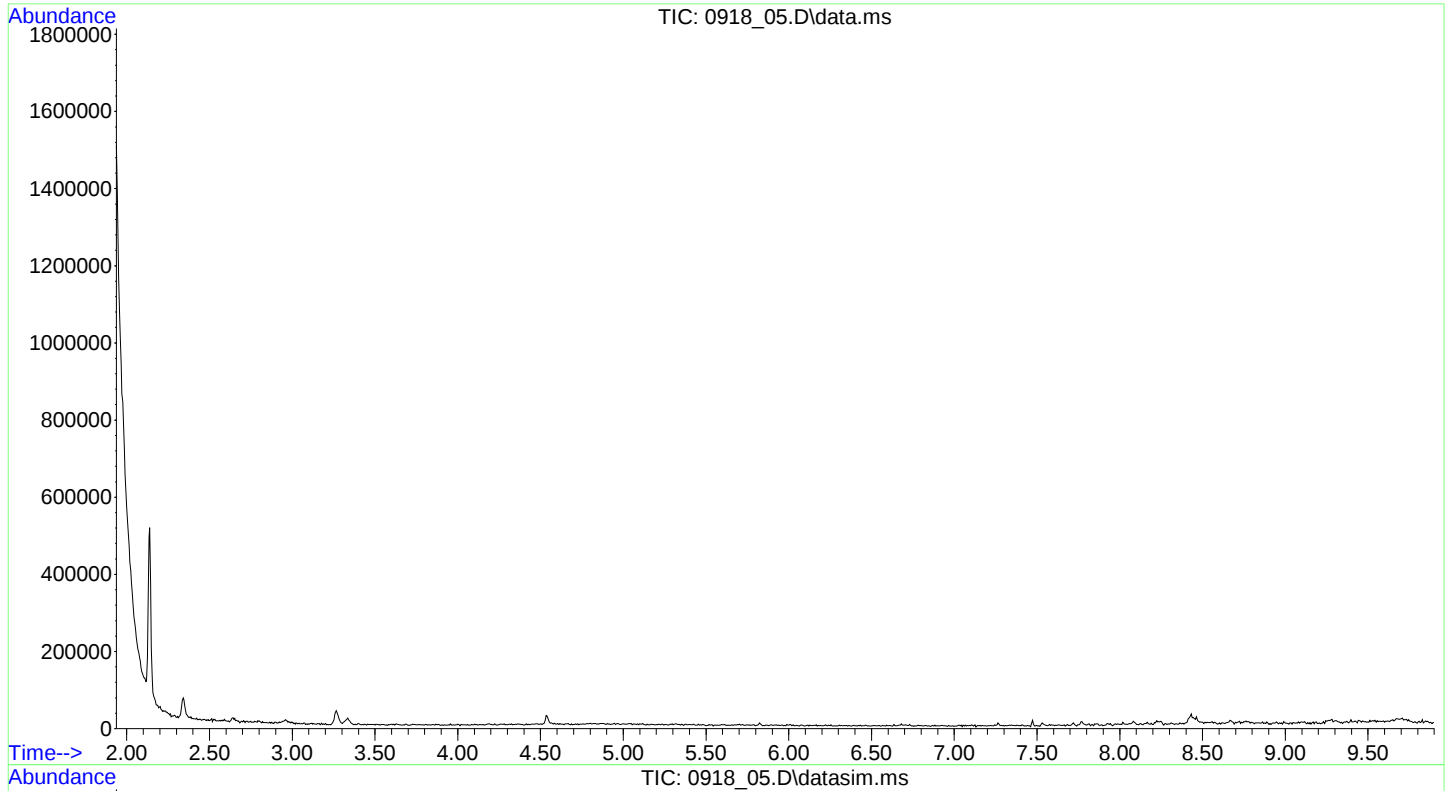
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.138	46	101126	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.268	64	16579	5.337	ug/L	0.00
Spiked Amount	5.000		Recovery	=	106.80%	
Target Compounds						
2] 1,4-Dioxane	3.338	88	13295m	2.827	ug/L	Qvalue 95

(#)out of range (m)manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_05.D
Acq On : 18 Sep 2018 8:46 pm
Operator :
Client ID : ICAL 2.5
Lab ID : 2.5std;10v
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 18 21:11:06 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 20:48:45 2018
Response via : Initial Calibration



Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_06.D
Acq On : 18 Sep 2018 9:02 pm
Operator :
Client ID : ICAL 10
Lab ID : 10std;10u
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 18 21:11:42 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 21:11:18 2018
Response via : Initial Calibration

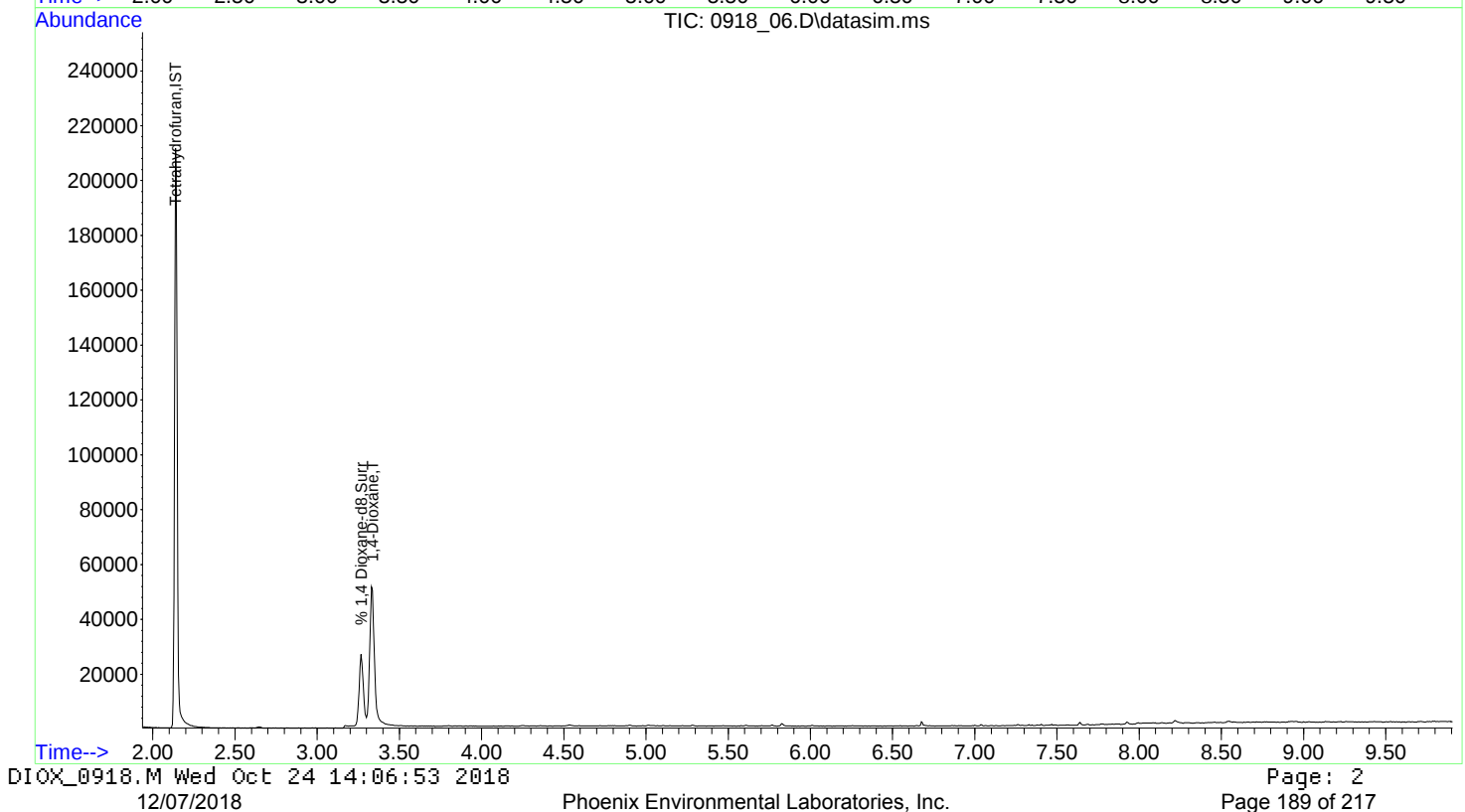
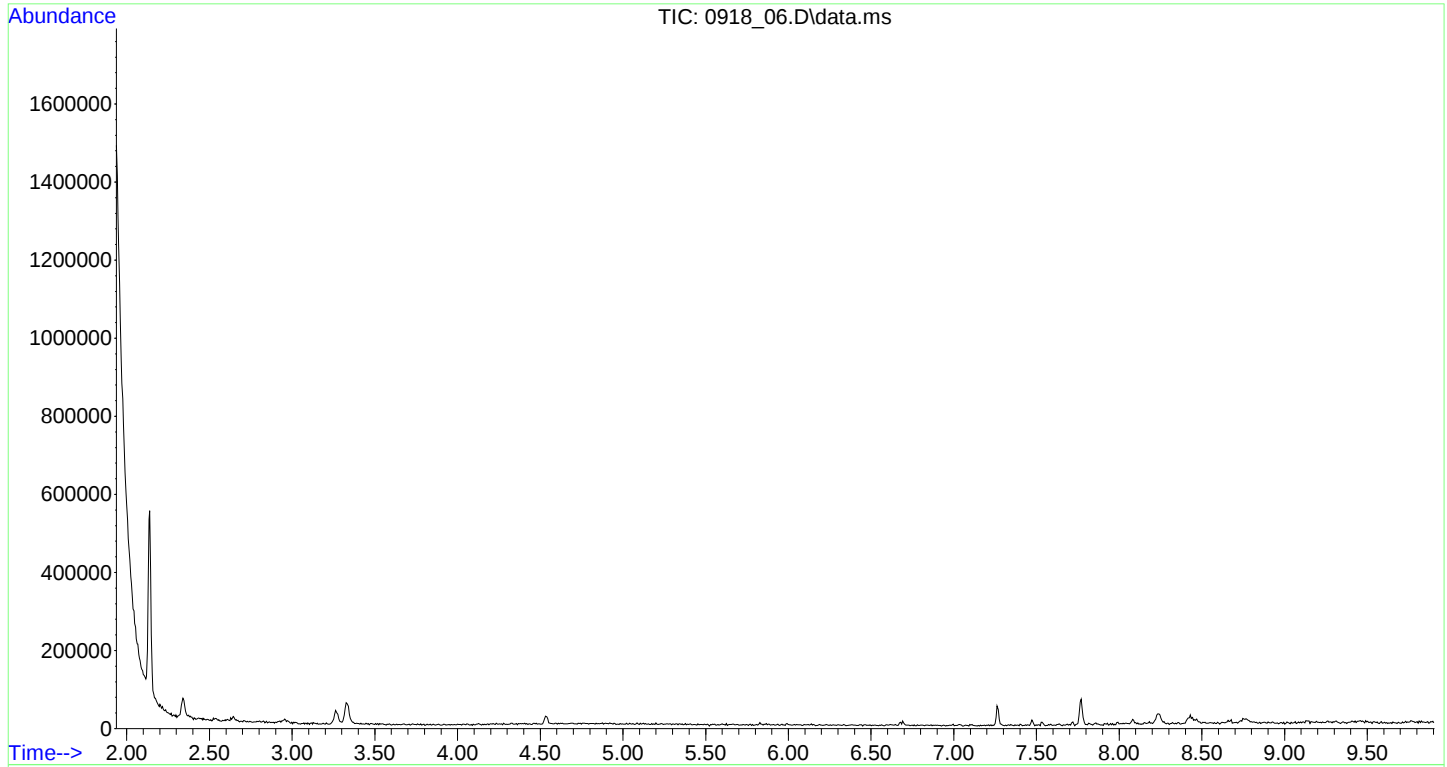
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.138	46	110363	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.267	64	16980	4.926	ug/L	0.00
Spiked Amount	5.000		Recovery	=	98.60%	
Target Compounds						
2] 1,4-Dioxane	3.336	88	54289m	10.242	ug/L	Qvalue 88

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_06.D
Acq On : 18 Sep 2018 9:02 pm
Operator :
Client ID : ICAL 10
Lab ID : 10std;10u
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Sep 18 21:11:42 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 21:11:18 2018
Response via : Initial Calibration



Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_07.D
Acq On : 18 Sep 2018 9:17 pm
Operator :
Client ID : ICAL 20
Lab ID : 20std;10x
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 18 21:35:13 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 21:11:53 2018
Response via : Initial Calibration

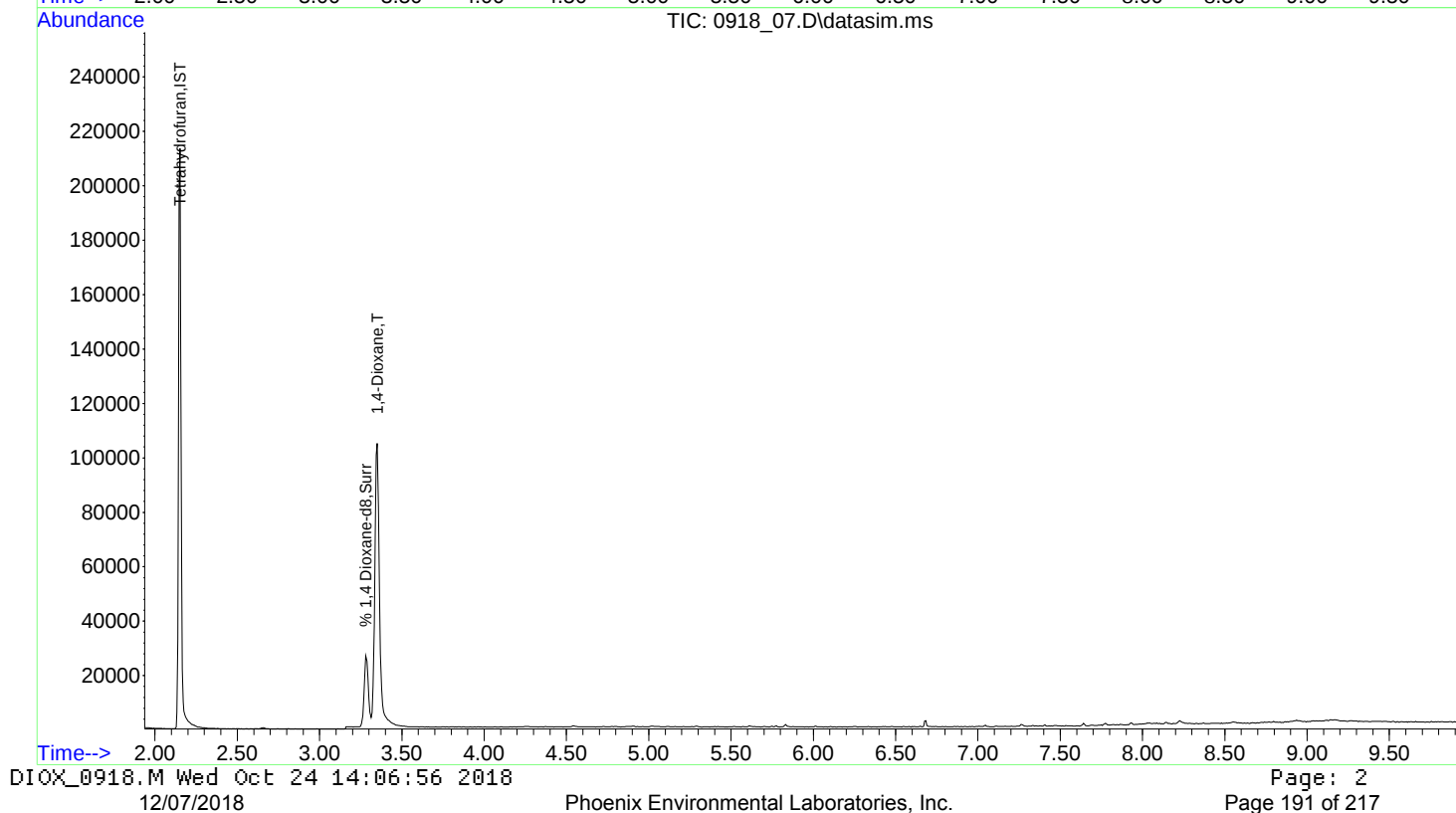
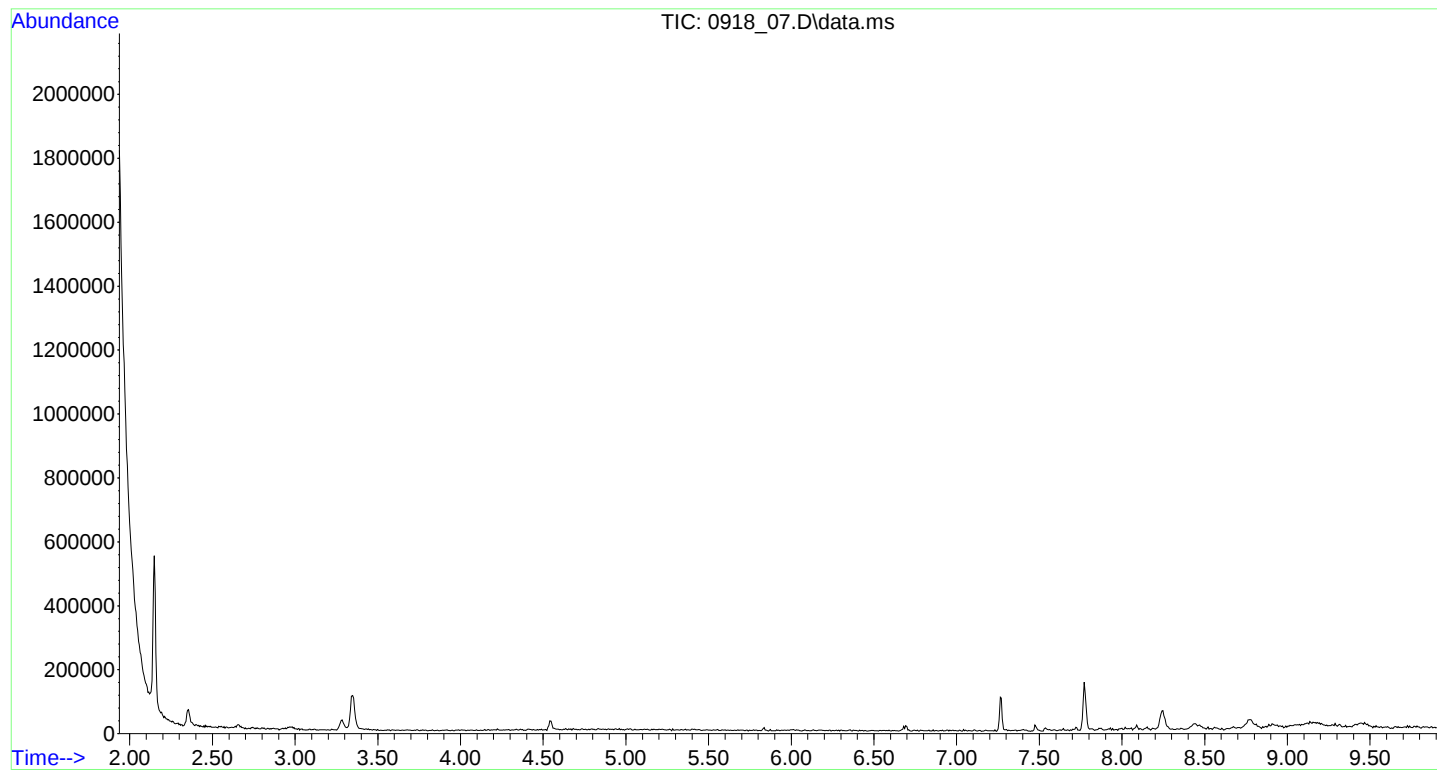
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.152	46	109798	5.000	ng	# 0.01
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.281	64	17084	4.996	ug/L	0.01
Spiked Amount	5.000		Recovery	=	100.00%	
Target Compounds						
2] 1,4-Dioxane	3.351	88	109999m	20.759	ug/L	Qvalue 90

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\09SEP\18\
Data File : 0918_07.D
Acq On : 18 Sep 2018 9:17 pm
Operator :
Client ID : ICAL 20
Lab ID : 20std;10x
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Sep 18 21:35:13 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 18 21:11:53 2018
Response via : Initial Calibration



7B

Lab Name:	Phoenix Environmental Labs		Client:	ENV-SCI		
Lab Code:	Phoenix	Case No.:		SAS No.:		
				SDG No.:	GCB61309	
Instrument:	CHEM22		Calibration Date:	10/02/18	Time:	19:30
Lab File Id:	1002_03.D		Init. Calib. Date(s):	09/18/18	09/18/18	
Heated Purge (Y/N):	Y		Init. Calib. Times:	19:58	21:17	
GC Column:	v factor 4		Method File:	DIOX_0918.M		

[illegible]

%D: 10% of target compounds are allowed to be above criteria %, but must be less than the (maximum) %D

FORM VII SV

Evaluate Continuing Calibration Report

Data Path : H:\SV2018\CHEM22\10OCT\02\
 Data File : 1002_03.D
 Acq On : 2 Oct 2018 7:30 pm
 Operator :
 Client ID : 1.0std;10w
 Lab ID : 1.0std;10w
 ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 02 22:00:52 2018
 Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
 Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
 QLast Update : Tue Sep 25 18:19:11 2018
 Response via : Initial Calibration

Note: Curves (l,lf,q,qf) display calculated concentration.
 Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%
1 ISTD Tetrahydrofuran	1.000	1.000	0.0	118
2 T 1,4-Dioxane	0.243	0.259	-6.6	
3 Surr % 1,4 Dioxane-d8	0.156	0.159	-1.9	

(#)=Out of Range l=linear, lf=liner(0,0), q=quadratic, qf=quadratic(0,0)
 Laboratory Warning Limits Out = 0

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_03.D
Acq On : 2 Oct 2018 7:30 pm
Operator :
Client ID : 1.0std;10w
Lab ID : 1.0std;10w
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 02 22:00:52 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 25 18:19:11 2018
Response via : Initial Calibration

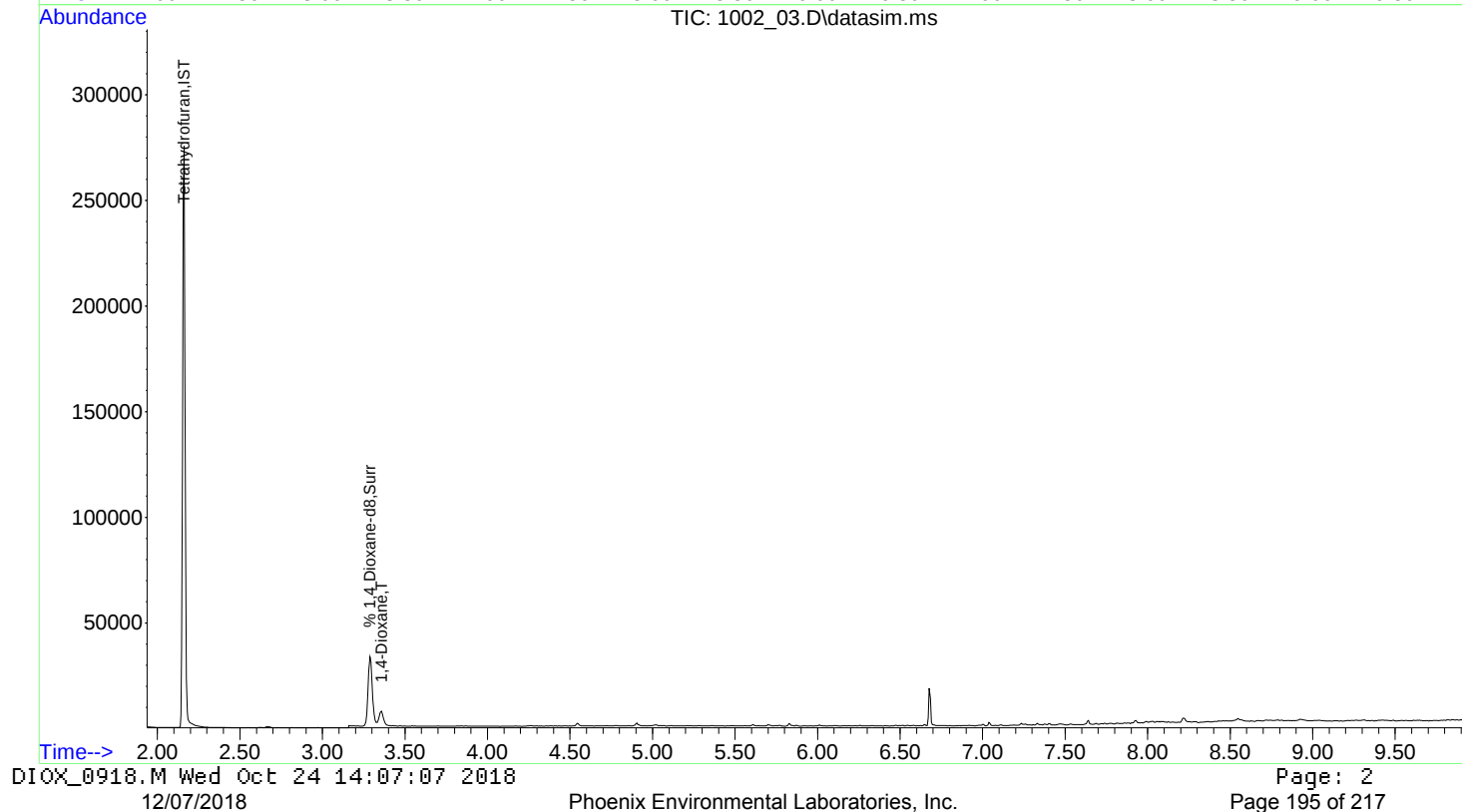
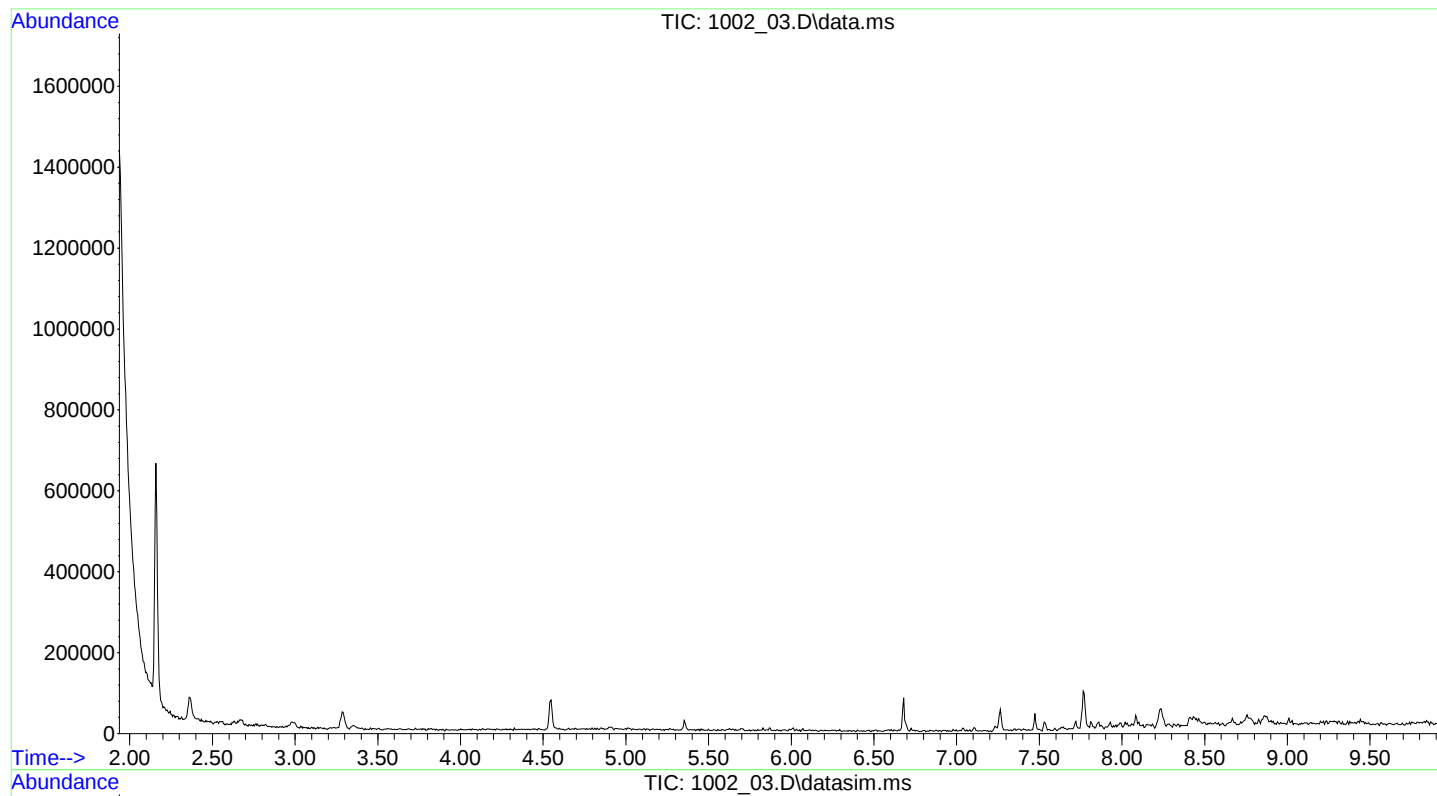
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.161	46	130238	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.287	64	20754	5.117	ug/L	0.00
Spiked Amount	5.000		Recovery	=	102.40%	
Target Compounds						
2] 1,4-Dioxane	3.357	88	6751m	1.067	ug/L	Qvalue 91

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_03.D
Acq On : 2 Oct 2018 7:30 pm
Operator :
Client ID : 1.0std;10w
Lab ID : 1.0std;10w
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Oct 02 22:00:52 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Sep 25 18:19:11 2018
Response via : Initial Calibration



7B

Lab Name:	Phoenix Environmental Labs		Client:	ENV-SCI		
Lab Code:	Phoenix	Case No.:		SAS No.:		
				SDG No.:	GCB61309	
Instrument:	CHEM22		Calibration Date:	10/03/18	Time:	00:15
Lab File Id:	1002_21.D		Init. Calib. Date(s):	09/18/18	09/18/18	
Heated Purge (Y/N):	Y		Init. Calib. Times:	19:58	21:17	
GC Column:	v factor 4		Method File:	DIOX_0918.M		

[illegible]

(*) Recommended RRF not met. (#) Maximum %D not met.

Evaluate Continuing Calibration Report

Data Path : H:\SV2018\CHEM22\10OCT\02\
 Data File : 1002_21.D
 Acq On : 3 Oct 2018 12:15 am
 Operator :
 Client ID : 1.0std;10w
 Lab ID : 1.0std;10w
 ALS Vial : 21 Sample Multiplier: 1

Quant Time: Oct 03 17:15:15 2018
 Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
 Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
 QLast Update : Tue Oct 02 22:05:15 2018
 Response via : Initial Calibration

Note: Curves (l,lf,q,qf) display calculated concentration.
 Min. RRF : 0.050 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 20% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%
1 ISTD Tetrahydrofuran	1.000	1.000	0.0	139
2 T 1,4-Dioxane	0.243	0.280	-15.2	
3 Surr % 1,4 Dioxane-d8	0.156	0.171	-9.6	

(#)=Out of Range l=linear, lf=liner(0,0), q=quadratic, qf=quadratic(0,0)
 Laboratory Warning Limits Out = 0

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_21.D
Acq On : 3 Oct 2018 12:15 am
Operator :
Client ID : 1.0std;10w
Lab ID : 1.0std;10w
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Oct 03 17:15:15 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

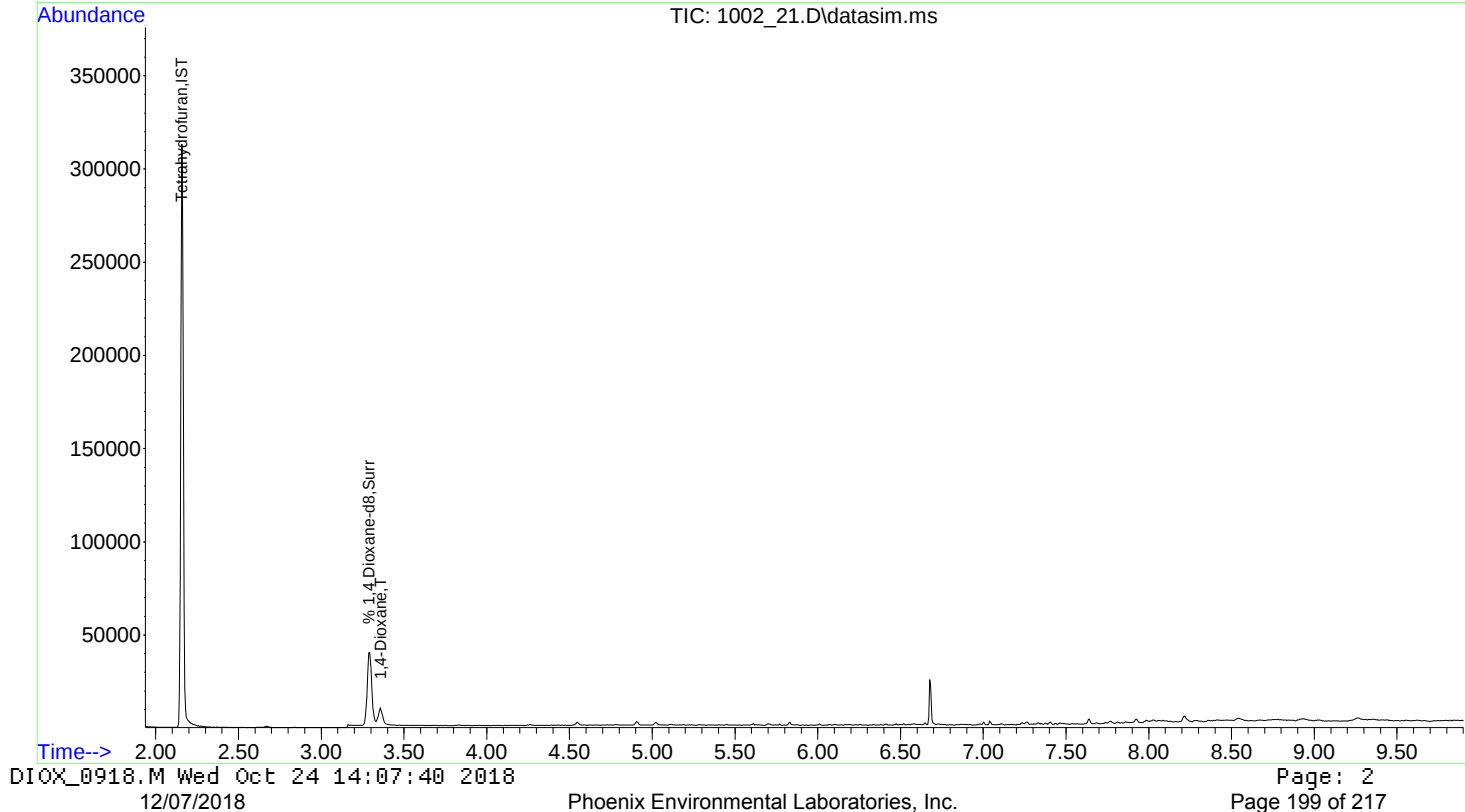
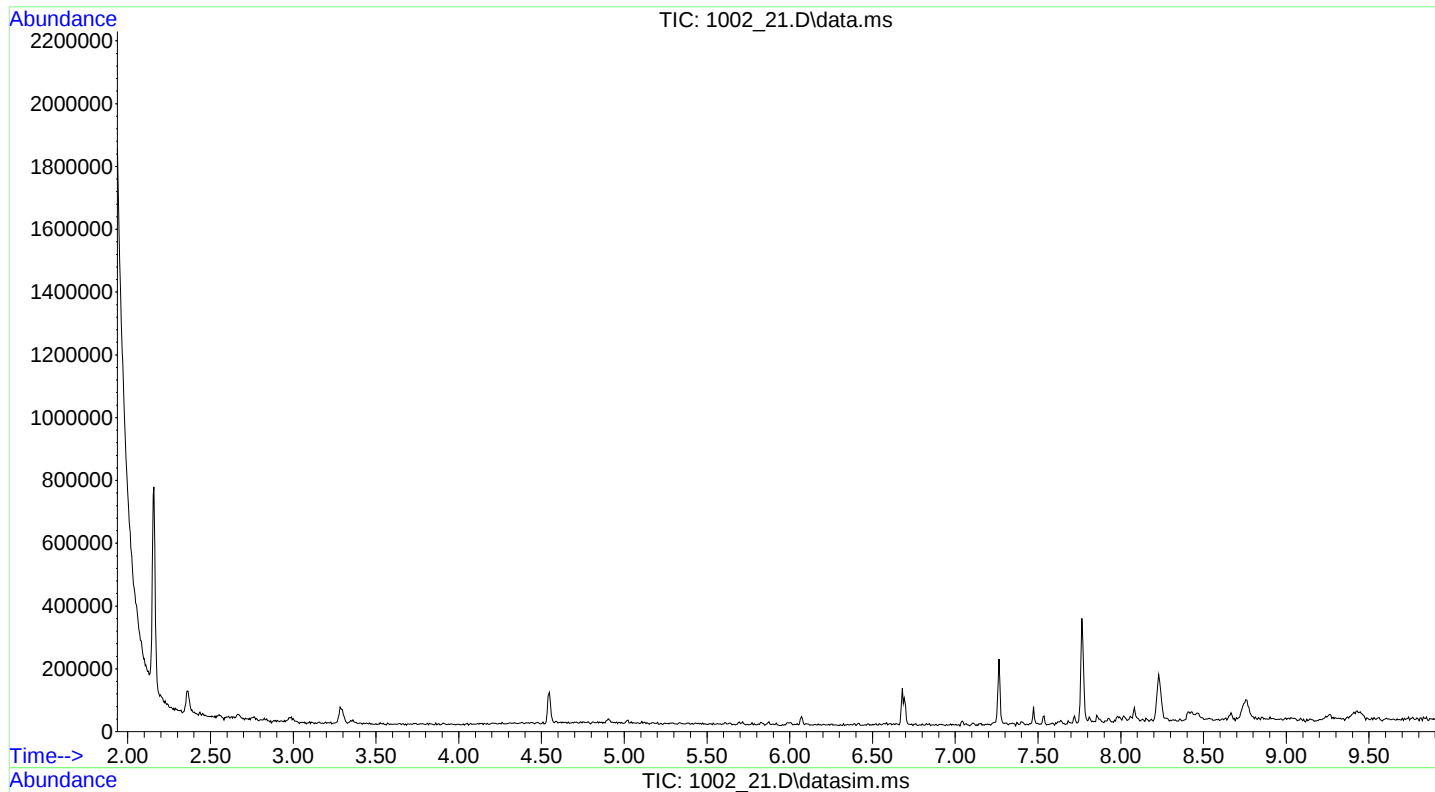
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.157	46	153879	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.287	64	26314	5.492	ug/L	0.00
Spiked Amount	5.000		Recovery	=	109.80%	
Target Compounds						
2] 1,4-Dioxane	3.357	88	8609m	1.152	ug/L	Qvalue 95

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

```
Data Path : H:\SV2018\CHEM22\10OCT\02\  
Data File : 1002_21.D  
Acq On : 3 Oct 2018 12:15 am  
Operator :  
Client ID : 1.0std;10w  
Lab ID : 1.0std;10w  
ALS Vial : 21 Sample Multiplier: 1
```

Quant Time: Oct 03 17:15:15 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DI0X_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



[illegible]

r=Result Reported U=Not Detected D=Reported Dilution E/J=Estimated Value X=Not Used S=Lab Solvent

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_05.D
Acq On : 2 Oct 2018 8:02 pm
Operator :
Client ID : CB61316 LCS
Lab ID : CB61316 LCS
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 02 22:21:13 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

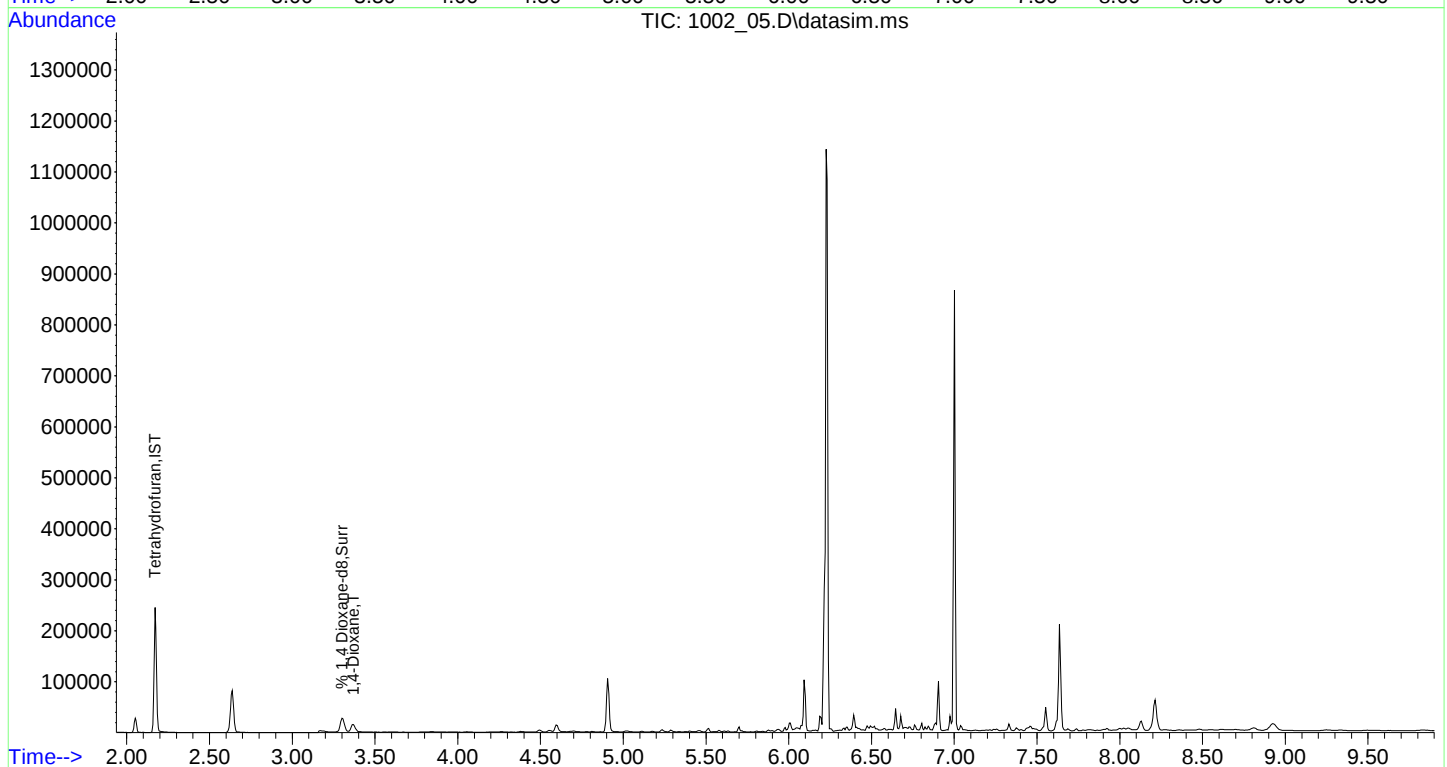
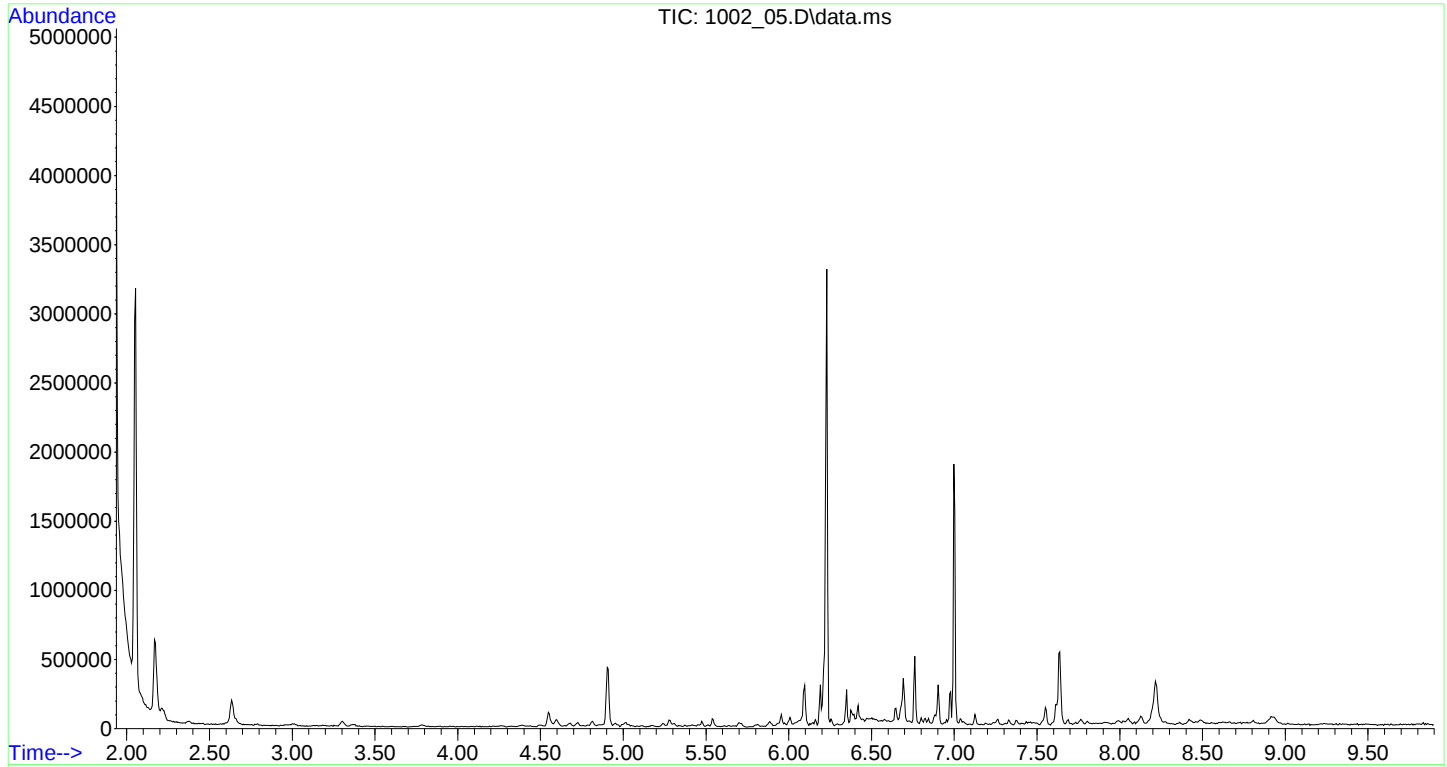
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.171	46	112183	5.000	ng	# 0.01
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.300	64	16984	4.862	ug/L	0.01
Spiked Amount	5.000		Recovery	=	97.20%	
Target Compounds						
2] 1,4-Dioxane	3.370	88	14574m	2.675	ug/L	Qvalue 99

(#)out of range (m)manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_05.D
Acq On : 2 Oct 2018 8:02 pm
Operator :
Client ID : CB61316 LCS
Lab ID : CB61316 LCS
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Oct 02 22:21:13 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



[illegible]

r=Result Reported U=Not Detected D=Reported Dilution E/J=Estimated Value X=Not Used S=Lab Solvent

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_06.D
Acq On : 2 Oct 2018 8:18 pm
Operator :
Client ID : CB61316 LCSD
Lab ID : CB61316 LCSD
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 02 22:21:29 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

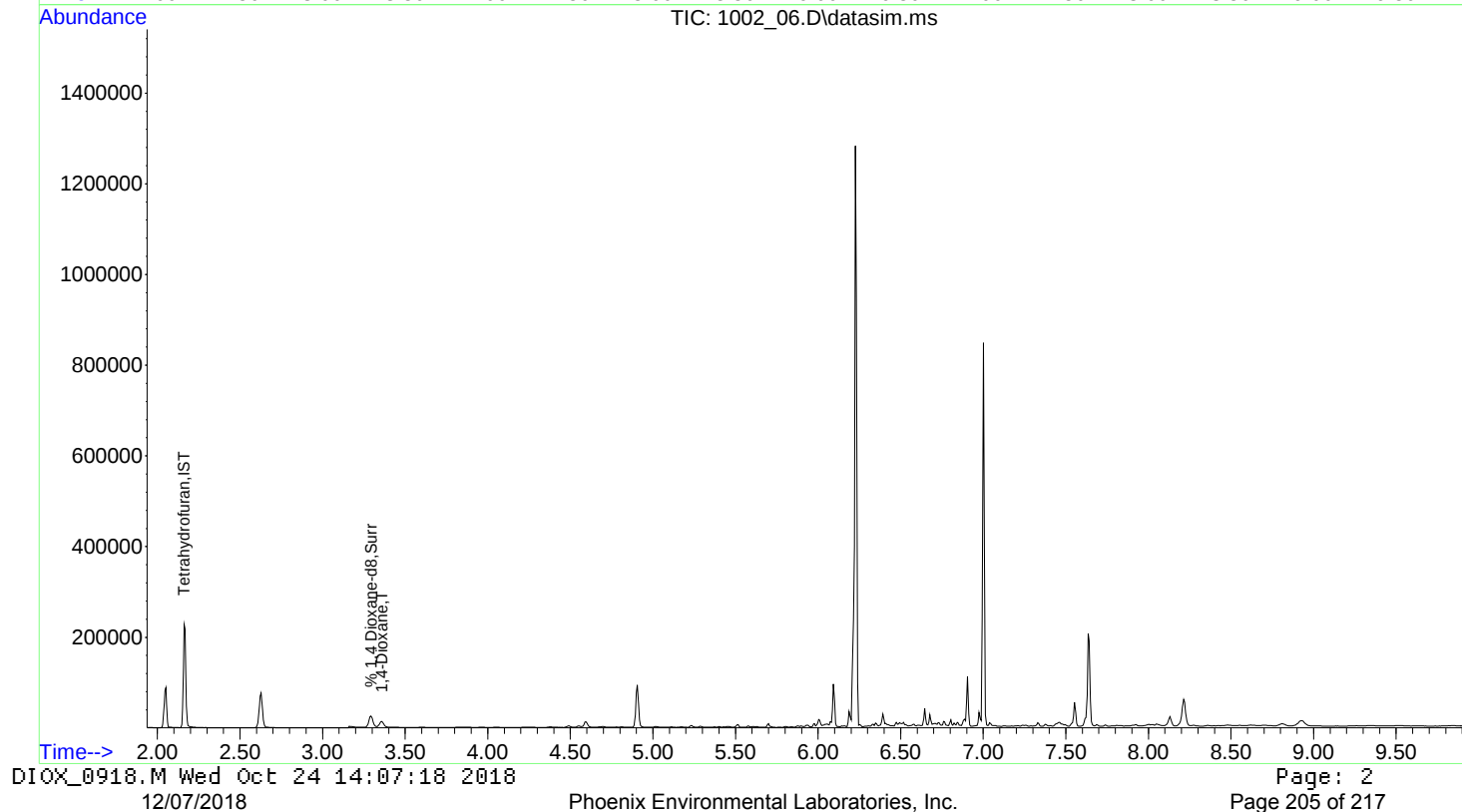
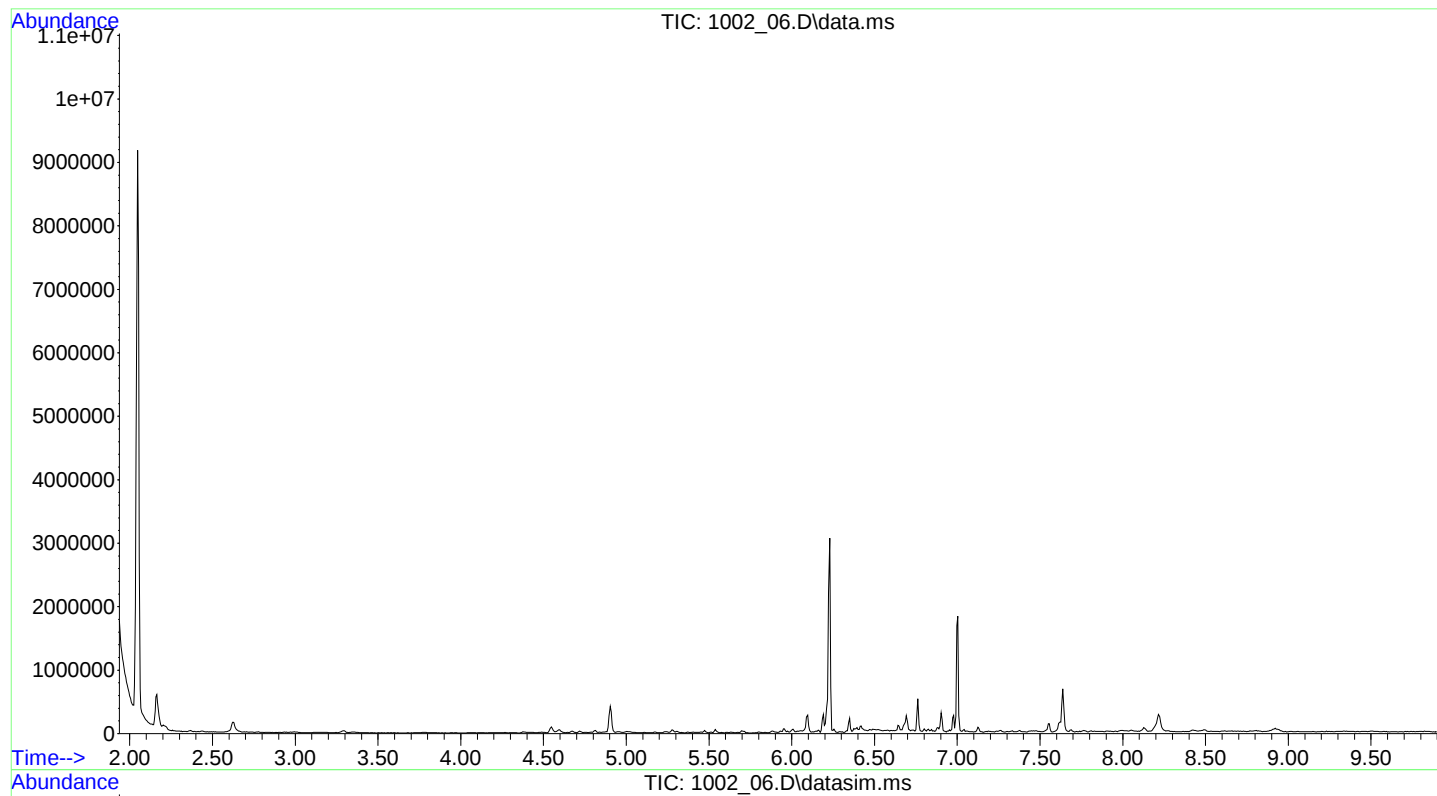
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.162	46	108163	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.294	64	16014	4.755	ug/L	0.00
Spiked Amount	5.000		Recovery	=	95.00%	
Target Compounds						
2] 1,4-Dioxane	3.357	88	13416m	2.554	ug/L	Qvalue 98

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_06.D
Acq On : 2 Oct 2018 8:18 pm
Operator :
Client ID : CB61316 LCSD
Lab ID : CB61316 LCSD
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Oct 02 22:21:29 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



ERT-3 MS

[illegible]

FORM I DIOX

r=Result Reported U=Not Detected D=Reported Dilution E/J=Estimated Value X=Not Used S=Lab Solvent

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_07.D
Acq On : 2 Oct 2018 8:34 pm
Operator :
Client ID : ERT-3 MS
Lab ID : CB61316 MS
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 02 22:21:38 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

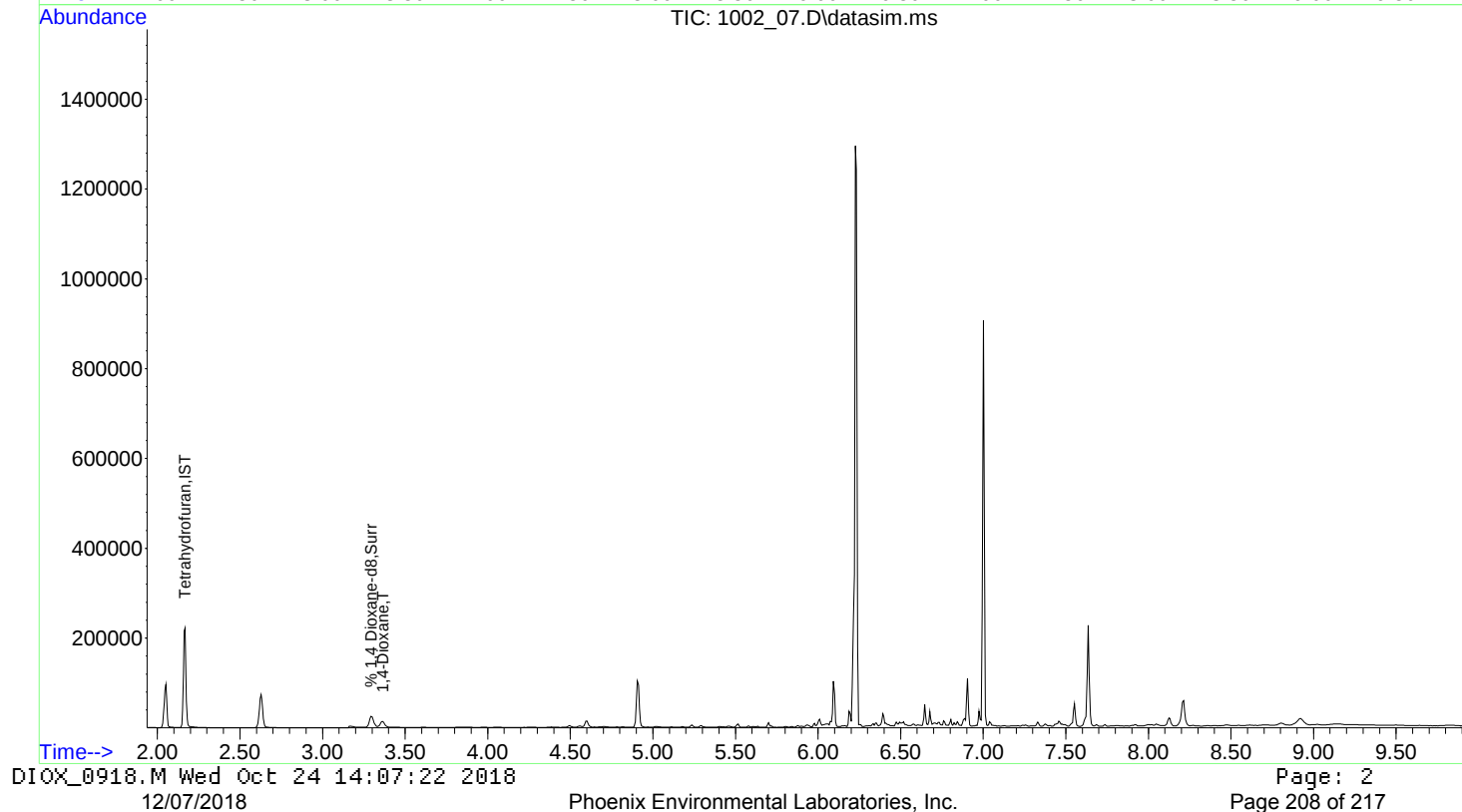
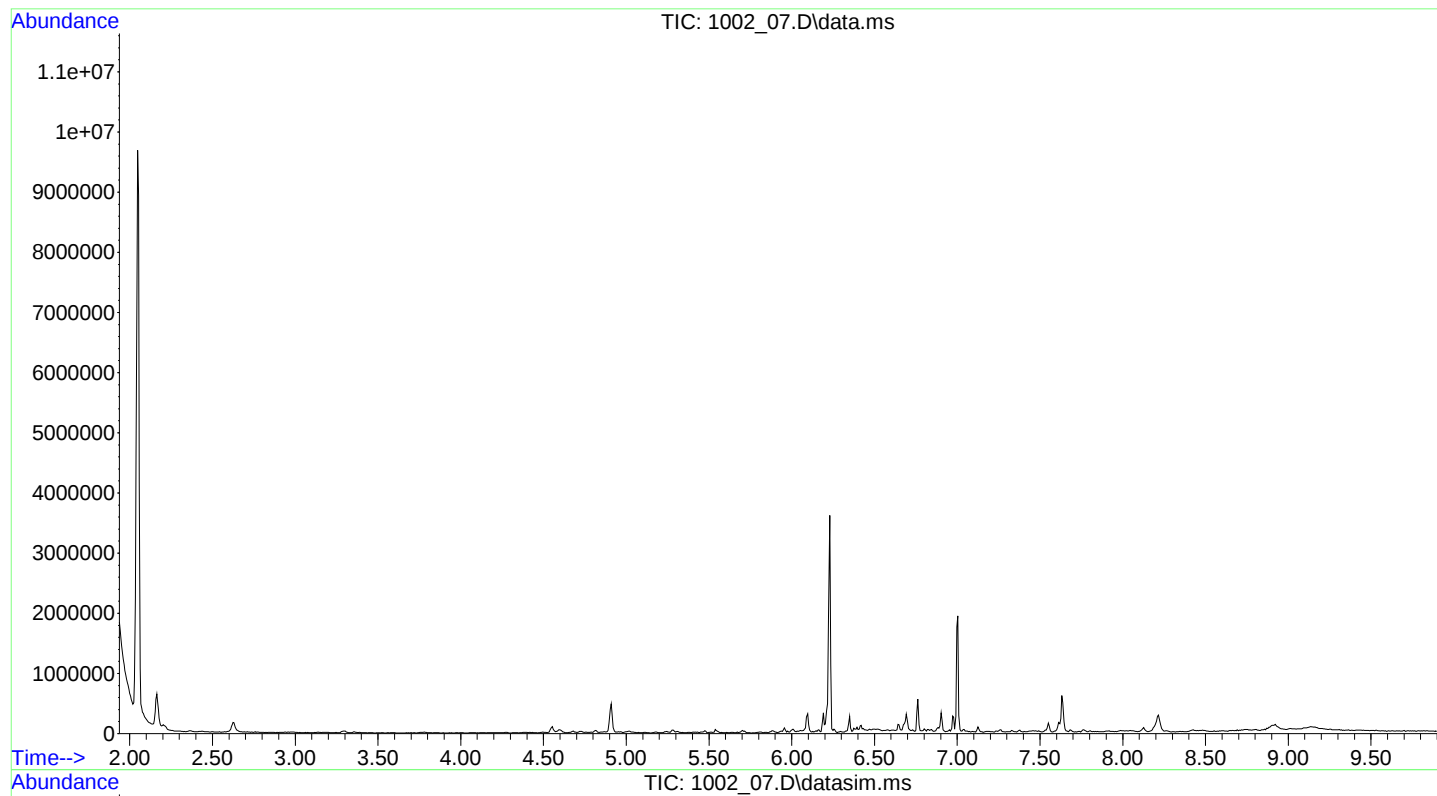
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.167	46	109962	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.294	64	16370	4.781	ug/L	0.00
Spiked Amount	5.000		Recovery	=	95.60%	
Target Compounds						
2] 1,4-Dioxane	3.364	88	13553m	2.538	ug/L	Qvalue 96

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_07.D
Acq On : 2 Oct 2018 8:34 pm
Operator :
Client ID : ERT-3 MS
Lab ID : CB61316 MS
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Oct 02 22:21:38 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



Client:	ENV-SCI			Lab:	Phoenix Env. Labs	
SDG No.:	GCB61309			Lab Sample ID:	CB61316 MSD	
Sample wt/vol:	100.0	(g/mL)	mL	Lab File ID:	1002_08.D	
Concentrated Extract Volume:	1000	(uL)		Date Received:	09/28/18	
% Moisture:	n.a.			Date Extracted:	10/01/18	
Instrument:	CHEM22	Inj. Vol.	2 (uL)	Date Analyzed:	10/02/18	
Purge Volume	N	pH:		Dilution Factor:	1	
Matrix: (soil/water)	Water			CONCENTRATION UNITS:(ug/L or ug/Kg) ug/L		

[illegible]

FORM I DIOX

r=Result Reported U=Not Detected D=Reported Dilution E/J=Estimated Value X=Not Used S=Lab Solvent

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_08.D
Acq On : 2 Oct 2018 8:50 pm
Operator :
Client ID : ERT-3 MSD
Lab ID : CB61316 MSD
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 02 22:23:59 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration

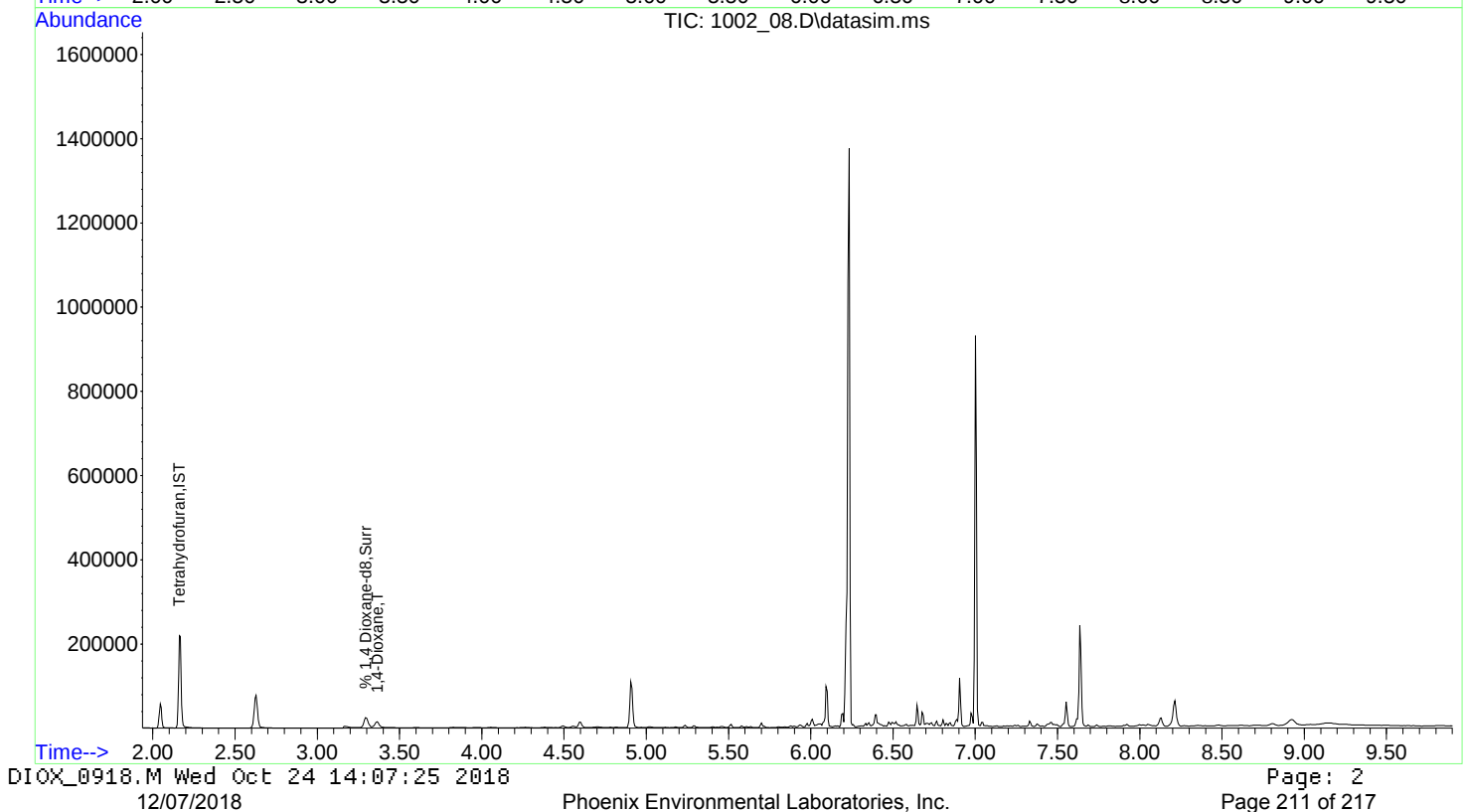
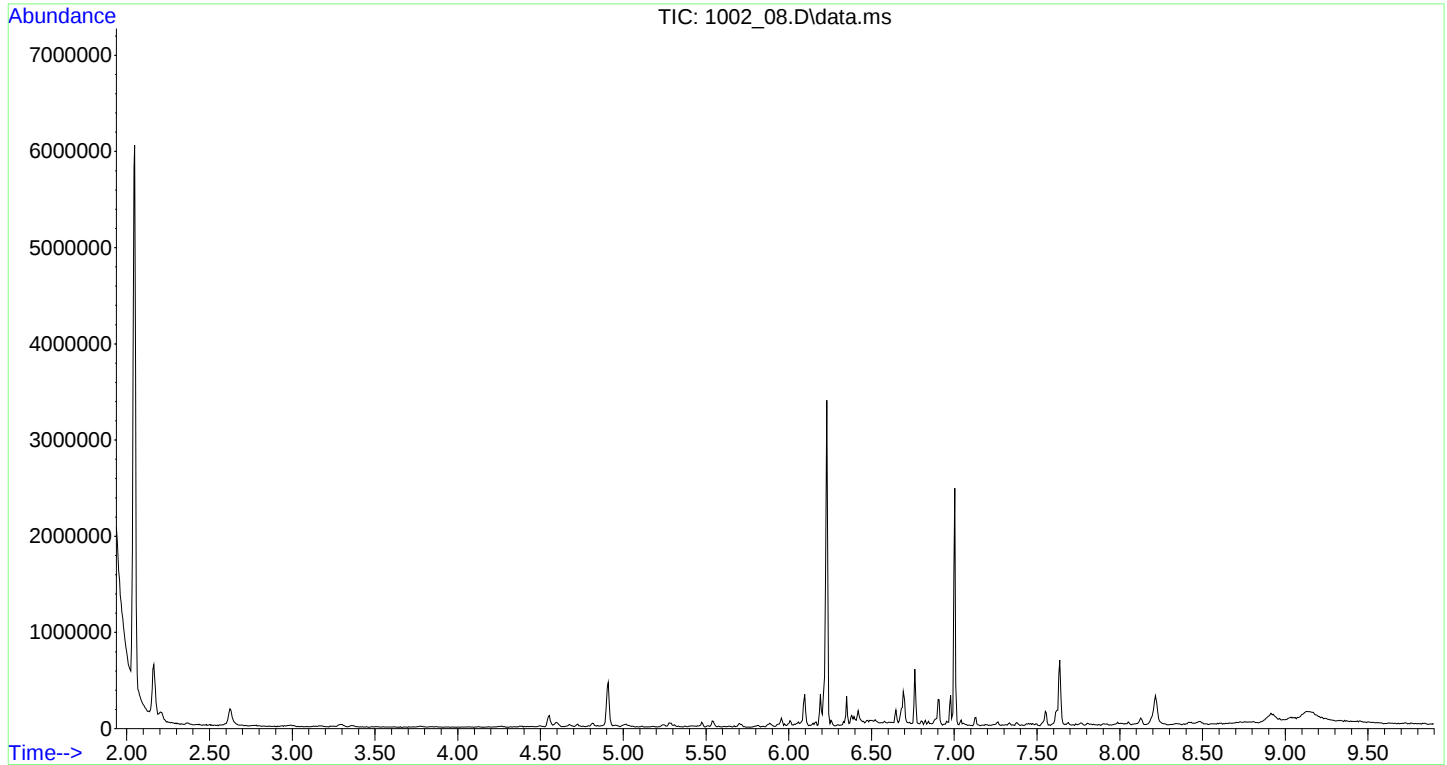
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.162	46	109723	5.000	ng	# 0.00
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.293	64	15470	4.528	ug/L	0.00
Spiked Amount	5.000		Recovery	=	90.60%	
Target Compounds						
2] 1,4-Dioxane	3.363	88	14270m	2.678	ug/L	Qvalue 94

(#)out of range (m>manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_08.D
Acq On : 2 Oct 2018 8:50 pm
Operator :
Client ID : ERT-3 MSD
Lab ID : CB61316 MSD
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Oct 02 22:23:59 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:15 2018
Response via : Initial Calibration



Client:	ENV-SCI			Lab:	Phoenix Env. Labs	
SDG No.:	GCB61309			Lab Sample ID:	CB61316 BL	
Sample wt/vol:	100.0	(g/mL)	mL	Lab File ID:	1002_04.D	
Concentrated Extract Volume:	1000	(uL)		Date Received:	09/28/18	
% Moisture:	n.a.			Date Extracted:	10/01/18	
Instrument:	CHEM22	Inj. Vol.	2 (uL)	Date Analyzed:	10/02/18	
Purge Volume	N	pH:		Dilution Factor:	1	
Matrix: (soil/water)	Water			CONCENTRATION UNITS:(ug/L or ug/Kg) ug/L		

[illegible]

r=Result Reported U=Not Detected D=Reported Dilution E/J=Estimated Value X=Not Used S=Lab Solvent

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_04.D
Acq On : 2 Oct 2018 7:46 pm
Operator :
Client ID : CB61316 BLANK
Lab ID : CB61316 BLANK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 02 22:21:04 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:12 2018
Response via : Initial Calibration

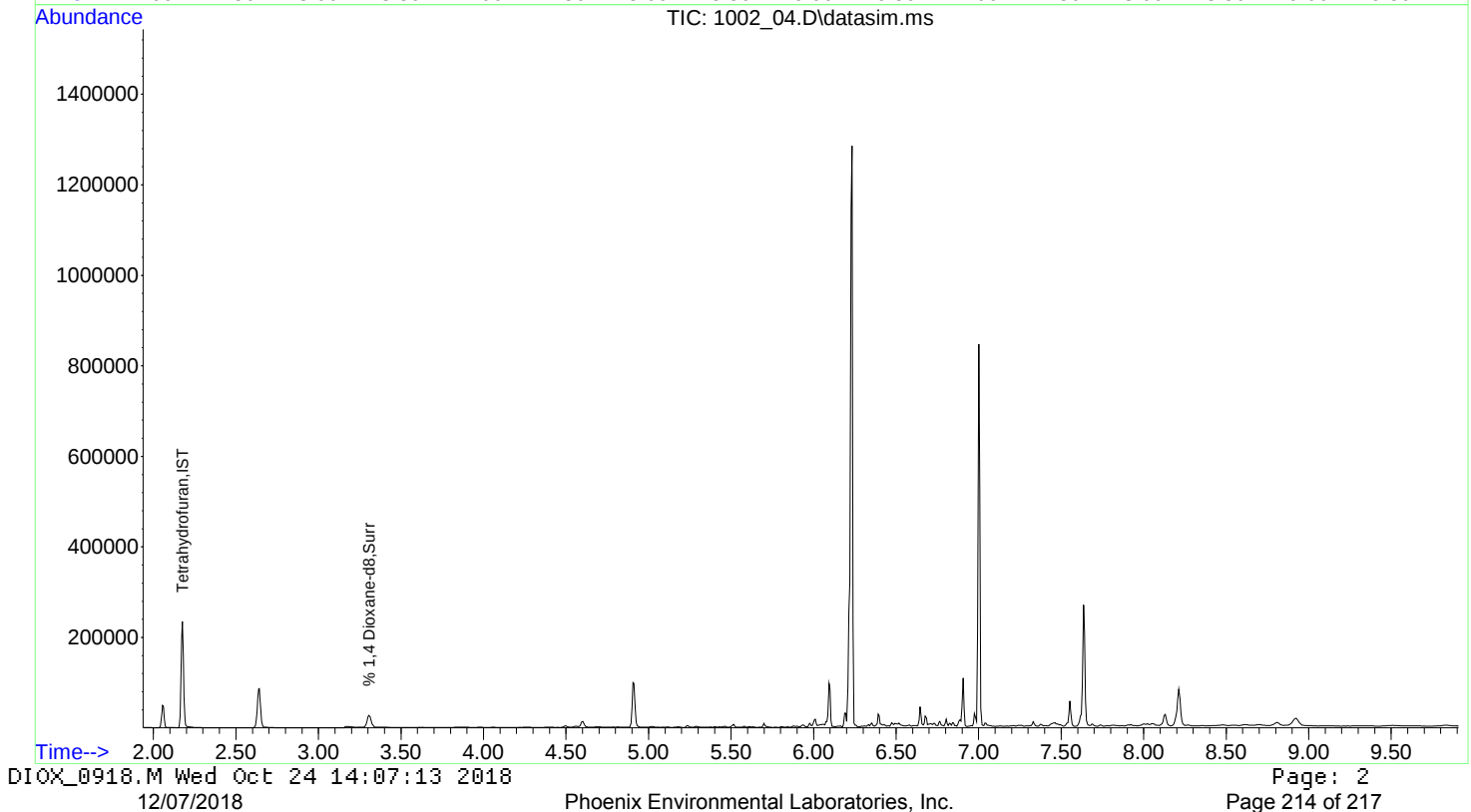
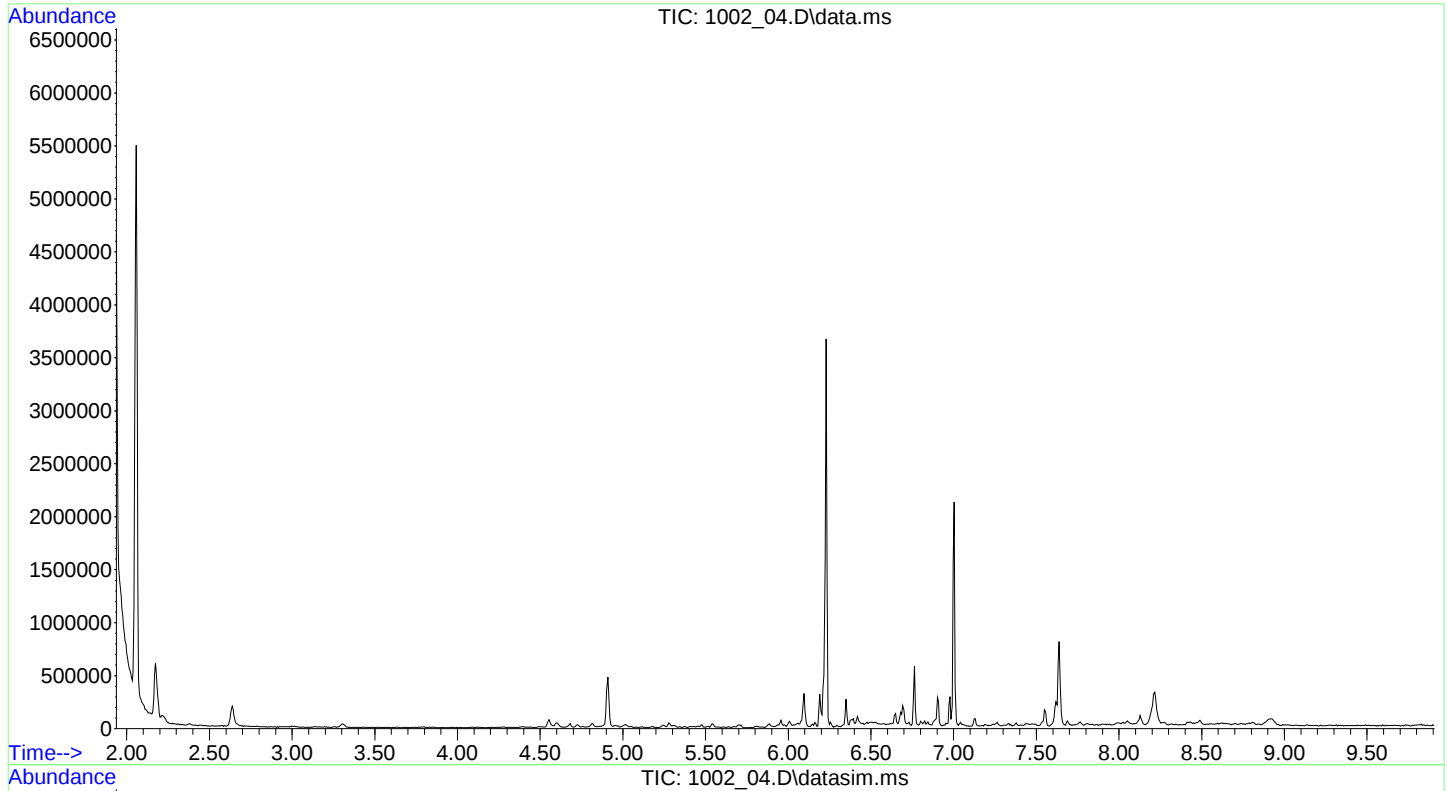
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)

Internal Standards						
1) Tetrahydrofuran	2.176	46	106608	5.000	ng	# 0.01
System Monitoring Compounds						
3) % 1,4 Dioxane-d8	3.306	64	16959	5.109	ug/L	0.02
Spiked Amount	5.000		Recovery	=	102.20%	
Target Compounds						
						Qvalue

(#)out of range (m)manual integration reviewed by analyst (+)signals summed

Data Path : H:\SV2018\CHEM22\10OCT\02\
Data File : 1002_04.D
Acq On : 2 Oct 2018 7:46 pm
Operator :
Client ID : CB61316 BLANK
Lab ID : CB61316 BLANK
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Oct 02 22:21:04 2018
Quant Method : H:\SV2018\CHEM22\METHODS\DIOX_0918.M
Quant Title : Semivolatiles by GC/MS - EPA Method 625/8270
QLast Update : Tue Oct 02 22:05:12 2018
Response via : Initial Calibration



Injection Log

Data Directory: H:\SV2018\CHEM22\09SEP\18\

Line	VL	FileName	SampleName	MiscInfo	Injection Time
1)	0	0918_10.D	xxxxxxxxxx		N/A
2)	1	0918_01.D	BFB TUNE	BFB; 10r	09/18/18 19:43
3)	2	0918_02.D	ICAL 0.25	0.25std; 10s	09/18/18 19:58
4)	3	0918_03.D	ICAL 0.5	0.5std; 10t	09/18/18 20:14
5)	4	0918_04.D	ICAL 1	1.0std; 10w	09/18/18 20:30
6)	5	0918_05.D	ICAL 2.5	2.5std; 10v	09/18/18 20:46
7)	6	0918_06.D	ICAL 10	10std; 10u	09/18/18 21:02
8)	7	0918_07.D	ICAL 20	20std; 10x	09/18/18 21:17
9)	1	0918_08.D	xxxxxxxxxx		09/18/18 21:33
10)	10	0918_09.D	xxxxxxxxxx		09/18/18 21:49
11)	8	0918_11.D	xxxxxxxxxx		09/18/18 22:04
12)	1	0918_12.D	xxxxxxxxxx		09/18/18 22:20
13)	2	0918_13.D	xxxxxxxxxx		09/18/18 22:36
14)	4	0918_14.D	xxxxxxxxxx		09/18/18 22:51
15)	9	0918_15.D	xxxxxxxxxx		09/18/18 23:07
16)	10	0918_16.D	xxxxxxxxxx		09/18/18 23:23
17)	11	0918_17.D	xxxxxxxxxx		09/18/18 23:38
18)	12	0918_18.D	xxxxxxxxxx		09/18/18 23:54
19)	13	0918_19.D	xxxxxxxxxx		09/19/18 0:09
20)	14	0918_20.D	xxxxxxxxxx		09/19/18 0:25
21)	15	0918_21.D	xxxxxxxxxx		09/19/18 0:40
22)	16	0918_22.D	xxxxxxxxxx		09/19/18 0:56
23)	6	0918_23.D	xxxxxxxxxx		09/19/18 1:12

Injection Log

Data Directory: H:\SV2018\CHEM22\10OCT\02\

Line	VI	FileName	SampleName	MiscInfo	Injection Time
1)	1	1002_01.D	xxxxxxxxxxx		10/02/18 18:29
2)	1	1002_01A.D	BFB TUNE	BFB; 10r	10/02/18 18:44
3)	2	1002_02.D	xxxxxxxxxxx		10/02/18 19:14
4)	3	1002_03.D	1.0std; 10w	1.0std; 10w	10/02/18 19:30
5)	4	1002_04.D	CB61316 BLANK	CB61316 BLANK	10/02/18 19:46
6)	5	1002_05.D	CB61316 LCS	CB61316 LCS	10/02/18 20:02
7)	6	1002_06.D	CB61316 LCSD	CB61316 LCSD	10/02/18 20:18
8)	7	1002_07.D	ERT-3 MS	CB61316 MS	10/02/18 20:34
9)	8	1002_08.D	ERT-3 MSD	CB61316 MSD	10/02/18 20:50
10)	9	1002_09.D	ERT-3	CB61316	10/02/18 21:05
11)	10	1002_10.D	ERT-6	CB61309	10/02/18 21:21
12)	11	1002_11.D	MW-6SS	CB61312	10/02/18 21:37
13)	12	1002_12.D	ERT-5	CB61313	10/02/18 21:53
14)	13	1002_13.D	FIELD DUPLICATE	CB61315	10/02/18 22:09
15)	14	1002_14.D	EQUIPMENT BLANK	CB61531	10/02/18 22:24
16)	15	1002_15.D	xxxxxxxxxxx		10/02/18 22:40
17)	16	1002_16.D	xxxxxxxxxxx		10/02/18 22:56
18)	17	1002_17.D	xxxxxxxxxxx		10/02/18 23:12
19)	18	1002_18.D	xxxxxxxxxxx		10/02/18 23:28
20)	19	1002_19.D	xxxxxxxxxxx		10/02/18 23:44
21)	20	1002_20.D	xxxxxxxxxxx		10/03/18 0:00
22)	21	1002_21.D	1.0std; 10w	1.0std; 10w	10/03/18 0:15

Dioxane

diox_ext-449743

QAQC Code #Q\$DIOX_LDL

QAQC Sample #

CB61316

10/01/18 2:30 PM

Sample / C#	Acode	Analysis	Initial Vol(ml)	Surrogate Vol (ml)	Final Vol (ml)	CLN(A/P)	Comments	Start Date	Finish Date	Initials
CB61316 **	BLK		100	0.01	1	A		10/01	10/01	S/S
CB61316 **	LCS		100	0.01	1	A	25UL SPK	10/01	10/01	S/S
CB61316 **	LCSD		100	0.01	1	A	25UL SPK	10/01	10/01	S/S
CB61316 **	MS		100	0.01	1	A	25UL SPK	10/01	10/01	S/S
CB61316 **	MSD		100	0.01	1	A	25UL SPK	10/01	10/01	S/S
CB59505	DIOX_EXT		100	0.01	1	A	*	10/01	10/01	S/S
CB61309 **	DIOX_EXT		100	0.01	1	A		10/01	10/01	S/S
CB61312 **	DIOX_EXT		100	0.01	1	A		10/01	10/01	S/S
CB61313 **	DIOX_EXT		100	0.02	1	A	MAY HAV	10/01	10/01	S/S
CB61315 **	DIOX_EXT		100	0.01	1	A		10/01	10/01	S/S
CB61316 **	DIOX_EXT		100	0.01	1	A		10/01	10/01	S/S
CB61531 **	DIOX_EXT		100	0.01	1	A		10/01	10/01	S/S

QC Rpt Cmmt

Prep Comment *Filtered, filter blk prepped

Post Comment

Surrogate Id # ABS (71882)

Tracking #

Time In

Spike # ABS (X9097)

Tracking #

Time Out

LCSID # ABS (X9097)

Tracking #

Temp

Standards

Time Basic

Vendor Id	Item ID	Phoenix Lot Number	Vendor Lot Number	Expiration Date
Brand-Nu	Dcm			
Brand-Nu	Sodium Thiosulfate Anhydrous Granular 500g			
Phoenix	DIOX - LCS Standard		-----	
Phoenix	DIOX - Surrogate Standard		-----	