

BGES, INC.

ENVIRONMENTAL CONSULTANTS

**FORMER CUSTOM TRUCK
(CURRENTLY SIX ROBBLEE'S)
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA**

GROUNDWATER MONITORING REPORT

JULY 2014

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ACRONYMS

AAC	-	Alaska Administrative Code
ADEC	-	Alaska Department of Environmental Conservation
AK	-	Alaska Method
AWWU	-	Anchorage Water and Wastewater Utility
BGES	-	Braunstein Geological and Environmental Services
BTEX	-	Benzene, Toluene, Ethylbenzene, and Total Xylenes
C	-	Celsius
CSM	-	Conceptual Site Model
DRO	-	Diesel Range Organics
EPA	-	Environmental Protection Agency
GRO	-	Gasoline Range Organics
HCL	-	Hydrochloric Acid
LOQ	-	Limit of Quantitation
mg/L	-	Milligrams per Liter
ml/min	-	milliliters per minute
MRL	-	Method Reporting Limit
PAHs	-	Polynuclear Aromatic Hydrocarbons
QC	-	Quality Control
QP	-	Qualified Person
RPD	-	Relative Percent Difference
RRO	-	Residual Range Organics
SGS	-	SGS North America, Inc.
UST	-	Underground Storage Tank
VOCs	-	Volatile Organic Compounds

1.0 INTRODUCTION

BGES, Inc. (BGES) was retained by Andy Robblee of Six Robblee's, Inc. to conduct groundwater sampling at the Six Robblee's property located at 4748 Old Seward Highway, Anchorage, Alaska (Figure 1). The purpose of this groundwater monitoring event was to assess the groundwater quality at this site. The fieldwork for this round of sampling (the eighth round of groundwater sampling performed by BGES) was performed on April 28 and 29, 2014 in general accordance with the work plan prepared by BGES dated December 6, 2013 and updated in an email correspondence to the Alaska Department of Environmental Conservation (ADEC) Project Manager, Katrina Chambon, dated November 25, 2013 site is listed in the ADEC Contaminated Sites database as a site with a status of "cleanup-complete with institutional controls" (ADEC Hazard Identification Number 23658, Event Identification Number 404, and File Number 2100.26.252).

2.0 BACKGROUND

The property is located in the central portion of Anchorage, Alaska (Figure 1). The property had previously operated for many years as an automotive dealership that had on-site underground storage tanks (USTs) for fuel needs. Fuel is no longer dispensed at the site, and the tanks were removed in 1994. A one-story building that is operated as an automotive shop and accessory retail store is located on the property. The area west of the building is used for bulk storage of truck tops and auto accessories.

Numerous previous assessments have been performed by various environmental consulting firms at the site, including a 2004 Site Closure Report performed by Chemtrack. On June 14, 2004 the ADEC issued a "No Further Remedial Action Planned" status for this site. In addition, a "Record of Decision" was also issued for the site on the same date. In these documents, it has been indicated that quarterly groundwater monitoring in accordance with an approved work plan must be instituted.

BGES was contracted in 2005 to review the previous work plan and to resume groundwater sampling activities in accordance with the No Further Remedial Action Planned and Institutional Control Record of Decision documentation. The results of the previous groundwater sampling event, completed in June of 2013, were presented in the July 2013 Groundwater Monitoring Report.

3.0 PREVIOUS SITE WORK

Two 5,000-gallon UST's, reportedly containing gasoline, were removed from the ground in 1994.

Hydrocarbon contamination was observed in soils near the USTs and associated piping. In addition to removing the USTs, the excavation reportedly was continued to remove additional contaminated soil. Approximately 280 cubic yards of soil were reportedly removed from the site and treated at an off-site facility. Elevated concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in remaining soils.

Groundwater sampling was first performed by BGES in June of 2005. Monitoring Wells that were sampled during this sampling event included; MW-1, MW-2, MW-5, MW-8, MW-11, MW-12, B6/VE, and the Tap Well (facility well). The results indicated contaminant concentrations exceeding the following ADEC cleanup criteria: gasoline range organics (GRO) in Monitoring Wells MW-1, MW-2, MW-8, and B6/VE; diesel range organics (DRO) in MW-1, MW-2, and B6/VE; benzene in MW-1, MW-2, MW-5, MW-8, MW-12, and B6/VE; toluene in MW-1, MW-2, and B6/VE; ethylbenzene in MW-1, MW-2, and B6/VE; and, total xylenes in MW-2. The water sample collected from the Tap Well (facility well) did not exhibit any analyte concentrations above the laboratory's method reporting limit (MRL) and the ADEC cleanup criteria.

Groundwater sampling was performed again by BGES in August of 2005. Monitoring wells that were sampled during this sampling event included MW-1, MW-2, MW-3, MW-5, B6/VE, MW-8, MW-9, MW-10, MW-11, MW-12, and MW-15. The results indicated contaminant concentrations exceeding the following ADEC cleanup criteria: GRO in MW-1, MW-2, MW-5, MW-8, MW-15, and B6/VE; DRO in MW-1, MW-2, MW-5, MW-11, MW-15, and B6/VE; residual range organics (RRO) in MW-1, MW-2, MW-5, B6/VE, MW-9, MW-11, MW-12, and MW-15; benzene in MW-1, MW-2, MW-5, B6/VE, MW-8, MW-11, MW-12, and MW-15.; toluene in MW-1, MW-2, MW-15, and B6/VE; ethylbenzene in MW-1, MW-2, MW-15, and B6/VE; and, total xylenes in MW-2 and MW-15.

Groundwater sampling was performed by BGES in March of 2006. Monitoring Wells that were sampled during this sampling event included MW-1, MW-2, B6/VE, MW-11, and MW-12. Water samples were analyzed for GRO, DRO, RRO, and BTEX. The results from the March 2006 sampling event indicated that GRO, DRO, RRO, and BTEX concentrations exceeded the ADEC cleanup criteria in Monitoring Wells MW-1, MW-2, and B6/VE (except for total xylenes in B6/VE). Benzene concentrations exceeded the ADEC cleanup criterion in Monitoring Wells MW-11 and MW-12. Additionally, the RRO concentration in Water Sample MW12 exceeded the ADEC cleanup criterion.

Groundwater sampling was performed by BGES in September of 2006. Wells that were sampled during this sampling event included MW-1, MW-2, B6/VE, MW-5, MW-8, MW-11, MW-12, and the

facility well. Water samples were analyzed for GRO, DRO, RRO, and BTEX. The results from the September 2006 sampling event indicated that GRO, DRO, and RRO concentrations exceeded the ADEC cleanup criteria in Monitoring Wells MW-1, MW-2, and B6/VE. Benzene concentrations exceeded the ADEC cleanup criterion in each of the wells sampled, including the facility well. Concentrations of toluene and ethylbenzene exceeded the ADEC cleanup criteria in MW-1 and MW-2. Additionally, the toluene concentration in Water Sample B6/VE exceeded the ADEC cleanup criterion.

Groundwater sampling was performed by BGES in October of 2007. During that round of groundwater sampling, Monitoring Wells MW-1, MW-2, MW-3, MW-5, MW-8, MW-9, MW-10, MW-11, MW-12, MW-15, and B6/VE were sampled and analyzed for GRO, DRO, RRO, and BTEX. Additionally, Monitoring Wells MW-2 and MW-102 (duplicate of MW-2) were analyzed for polynuclear aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs). The results from the October 2007 sampling event indicated that GRO, DRO, RRO, benzene, toluene and ethylbenzene concentrations exceeded the ADEC cleanup criteria in MW-1, MW-2, and B6/VE (except for the RRO concentration in B6/VE). Benzene concentrations exceeded the ADEC cleanup criterion in every well sampled, except for Monitoring Wells MW-3, MW-9, and MW-10. Monitoring Well MW-8 exhibited a GRO concentration that exceeded the ADEC cleanup criterion in addition to the benzene exceedance described above. Monitoring Well MW-15 contained GRO, DRO, benzene, toluene, and ethylbenzene concentrations above the applicable ADEC cleanup criteria. None of the samples analyzed contained xylenes concentrations that exceeded the ADEC cleanup criterion. Two off-site, downgradient wells (MW-11 and MW-12) were tested and exhibited levels of contaminants that exceeded ADEC cleanup criteria.

Groundwater sampling was performed by BGES in August and September of 2012. Wells that were sampled during that round of sampling event included MW-1, MW-2, MW-3, MW-5, MW-8, MW-9, MW-10, MW-11, MW-13, MW-14, MW-15, and B6/VE, and were analyzed for GRO, BTEX, DRO, and RRO. In addition, a water sample was collected from the facility well and labeled "Facility Well", and was analyzed for VOCs. The results from the August and September 2012 sampling events indicated that the water samples collected from Monitoring Wells MW-1 and MW-17 (duplicate of MW-1) exhibited concentrations of GRO, benzene, toluene, ethylbenzene, DRO, and RRO, which exceeded their respective ADEC cleanup criteria. The water samples collected from Monitoring Wells MW-2, MW-13, and MW-14 exhibited concentrations of GRO, BTEX, DRO, and RRO, which exceeded their respective ADEC cleanup criteria. Water Samples MW-8 and MW-15 exhibited concentrations of benzene, which exceeded the ADEC cleanup criterion. In addition, Water Sample

B6/VE exhibited concentrations of GRO, benzene, toluene, DRO, and RRO, which exceeded ADEC cleanup criteria.

Prior to the current monitoring round, a building survey and some preliminary soil gas sampling, in addition to groundwater sampling, was performed by BGES in May and June of 2013. Sub-slab soil gas samples collected from beneath the concrete slab in the southeastern portion of the building did not exhibit any analyte concentrations above the ADEC target levels for shallow soil gas. The groundwater samples collected from Monitoring Wells MW-2, MW-14, MW-13, and MW-20 exhibited concentrations of GRO, BTEX, DRO, and RRO that exceeded the respective ADEC cleanup criteria for these contaminants. In addition, Groundwater Samples MW-13 and MW-20 (duplicate of MW-13) exhibited concentrations of 1,2,4-trimethylbenzene and n-propylbenzene that exceeded the respective ADEC cleanup criteria for these contaminants. The groundwater samples collected from Monitoring Wells MW-1 and B6/VE exhibited concentrations of GRO, benzene, toluene, ethylbenzene, DRO, and RRO that exceeded the respective ADEC cleanup criteria for these contaminants. Groundwater Sample MW-15 exhibited concentrations of GRO, benzene, DRO, and RRO that exceeded the respective ADEC cleanup criteria for these contaminants.

Quarterly groundwater monitoring activities that were performed in April of 2014 are the subject of this report, and details and the results of these activities are presented below.

4.0 MAY 2014 SAMPLING AND ANALYSIS

BGES collected groundwater samples from Monitoring Wells MW-1, MW-2, MW-5, MW-11, MW-12, MW-13, MW-14, MW-15 and B6/VE on April 28 and 29, 2014 (Figure 2) in accordance with our work plan approved by the ADEC on December 6, 2013.

Prior to sample collection, the depths to water and the total depths of each well were measured using an electronic water level indicator that was decontaminated prior to its use in each well by washing it in an Alconox (laboratory-grade detergent) solution, followed by a potable water rinse. The depth to water, the total depth of the wells, and the water quality parameters are presented in Table 1. It should be noted that several of the wells had missing caps, were damaged, and/or exhibited evidence of frost-jacking. As such, we were not able to calculate groundwater flow direction or gradient with any confidence for this sampling event.

Monitoring Wells MW-2, MW-3, MW-5, B6/VE, MW-8, MW-10, MW-13, MW-14, and MW-15 had broken or missing PVC well caps; and several of the wells exhibited damaged or ill-fitting metal

casing lids and evidence of frost-jacking.

Prior to the collection of groundwater samples, the casing volume for each well was calculated. The wells were purged utilizing a positive displacement bladder pump; a minimum of three casing volumes were removed from each well. During the purging activities, the stabilization parameters (pH, conductivity, oxidation-reduction potential, and temperature) were monitored, utilizing a YSI Professional Pro Multi-Parameter water quality meter. Upon completion of the purging activities, the groundwater samples were collected utilizing low-flow sampling technique and an approximate flow rate between 100 and 450 milliliters per minute (ml/min). Portions of the samples scheduled for volatiles analyses were collected first by filling laboratory-supplied containers that were preserved with hydrochloric acid (HCL). Care was taken during filling of the containers to ensure that no headspace was left within the containers and that none of the preservative was spilled. One duplicate water sample was collected from Monitoring Well MW-14 (labeled MW-16) and was submitted “blindly” to the laboratory for analyses.

The sample containers were labeled, placed in chilled coolers, and transported to SGS North America, Inc. (SGS), an ADEC-approved laboratory for analysis, under chain of custody protocol. As a quality control measure, a trip blank sample accompanied the water samples scheduled for volatile analyses during the entire sampling and handling process.

Investigation-derived waste generated (purge water) was containerized in two 55-gallon drums. The investigation-derived wastes are currently stored outside in the southwest corner of the facility yard. The 55-gallon drums were clearly labeled with the contact information and a description of the contents (potentially-contaminated water). Copies of field notes taken during groundwater monitoring activities are included in Appendix A.

5.0 EVALUATION OF LABORATORY DATA

Laboratory analysis of the water samples were performed by SGS, an ADEC-approved laboratory. The analytical results for water samples are listed in Table 2 and copies of the laboratory data are included in Appendix B. The analytical results for water sample results were compared to the ADEC Method 2 Cleanup Criteria listed in Alaska Administrative Code (AAC) 75.345—Table C for groundwater.

The samples were analyzed at SGS by the following methods: GRO by Alaska Method (AK) 101; DRO by AK 102; RRO by AK 103; and BTEX by EPA Method 8021B.

The water samples collected from the subject property were numbered, for example, MW-1-0428, where the prefix MW-1 indicates the monitoring well from which the water sample was collected; and 0428 indicates the month and day the sample was collected. For brevity in the text and in the associated figures, these samples are referred to as MW-1 with the date omitted. B6/VE is also a monitoring well and is labeled in the same format as described above.

Ten water samples, including a duplicate sample, were collected from nine existing monitoring wells at the site; Samples MW-1, MW-2, MW-5, MW-11, MW-12, MW-13, MW-14, MW-16 (duplicate of MW-14), MW-15, and B6/VE.

The samples collected from Monitoring Wells MW-13, MW-14 and MW-16 (duplicate of MW-14) exhibited concentrations of GRO, BTEX, DRO, and RRO; all of which exceeded the respective ADEC cleanup criteria for these analytes. The samples collected from Monitoring Wells MW-2 and B6/VE exhibited concentrations of GRO, benzene, toluene, ethylbenzene, DRO, and RRO that exceeded the respective ADEC cleanup criteria for these analytes. The sample collected from Monitoring Well MW-1 exhibited concentrations of GRO, benzene, toluene, ethylbenzene, and DRO that exceeded the respective ADEC cleanup criteria for these analytes. The sample from Monitoring Well MW-5 exhibited a concentration of benzene that exceeded the ADEC cleanup criterion for this analyte. The sample from Monitoring Well MW-12 exhibited a concentration of RRO that exceeded the ADEC cleanup criterion for this analyte. The sample from Monitoring Well MW-15 exhibited concentrations of GRO, benzene, DRO, and RRO that exceeded the ADEC cleanup criteria for these analytes.

The remaining analytes within the field samples were either detected at concentrations that were below the applicable ADEC cleanup criteria, or were not detected above the laboratory limits of quantitation LOQs for the analyses. All of the LOQs for the non-detectable analytes were below the applicable ADEC cleanup criteria.

Analytical results for the groundwater samples are presented in Tables 2 and 3, the laboratory analytical data are included in Appendix B, and the sampling locations are shown on Figure 2.

6.0 LABORATORY DATA QUALITY REVIEW

Data quality was reviewed in accordance with ADEC guidance and standard industry practices. An ADEC laboratory data review checklist was completed for the laboratory work order number, and this checklist is included in Appendix C. Sample analyses were provided by SGS of Anchorage, Alaska. All samples were hand-delivered to SGS by BGES personnel under chain of custody protocol.

The samples contained the proper preservatives for the requested analyses. Trip blanks accompanied all volatile samples (GRO and BTEX) through the entirety of the sampling process and transportation to the laboratory.

A case narrative was included with the laboratory data. The case narrative provided with the data did not indicate any quality control (QC) failures or issues with data quality.

Work Order 1132689

The field samples collected during this sampling event were stored and transported in three coolers. All of the sample portions scheduled for volatile contaminant constituent analyses were transported in Cooler #3, along with a trip blank sample. The temperatures of Coolers 1, 2, and 3, were measured at the laboratory at the time of acceptance; and were recorded as -0.6, -0.3, and -0.1 degrees Celsius (C); respectively. The temperatures in the coolers were below the prescribed, optimal temperature range of 4 degrees Celsius +/- 2 degrees. However, because the recorded temperatures were slightly below the acceptance range, there is a reduced potential for contaminant loss within the samples due to natural attenuation. For this reason, it is our opinion that this QC failure does not affect the acceptability of the data for their intended use.

Sample MW-16 was a duplicate of Sample MW-14, and was collected and analyzed in order to facilitate evaluation of field sampling precision. Relative percent differences (RPDs) between the reported concentrations of several analytes for the original and duplicate samples were calculated, and these RPDs ranged between 2.61 percent and 37.9 percent. The RPDs between the reported concentrations of GRO, benzene, toluene, ethylbenzene, total xylenes, and DRO within the original and duplicate field sample were all below the recommended acceptance limit of 30 percent. This lends evidence to suggest generally good field sampling precision was achieved during the collection of the groundwater samples. For this reason, and because the only RPD that exceeded the acceptance limit of 30 percent was for the reported concentrations of RRO, and because this RPD only slightly exceeded the acceptance limit (RRO RPD was 37.97 percent); it is our opinion that good field sampling precision was achieved, and the data are acceptable for their intended use.

7.0 CONCEPTUAL SITE MODEL

A graphical human health conceptual site model (CSM) was developed for this site and was included in our 2007 Groundwater Sampling Report (dated December 2007). It is our opinion that the CSM is still valid for this site, and as such has not been modified based on the results of this sampling event.

8.0 CONCLUSIONS

A groundwater monitoring event at this site was conducted on April 28 and 29, 2014. Groundwater samples were collected from Monitoring Wells MW-1, MW-2, MW-5, MW-11, MW-12 MW-13, MW-14, MW-15 and B6/VE, and were analyzed for GRO, DRO, RRO, and BTEX. Many of the monitoring wells were in a damaged condition at the time of the sampling, and one of the wells (MW-9) was submerged in water and was therefore not sampled during this event. Monitoring Wells MW-2, MW-3, MW-5, B6/VE, MW-8, MW-10, MW-13, MW-14, and MW-15 had broken or missing PVC well caps; and several of the wells exhibited damaged or ill-fitting metal casing lids and evidence of frost-jacking. It is recommended that the wells be repaired as needed, and the tops of casings for the wells be re-surveyed after the repairs are made; in order to facilitate the calculation of accurate groundwater elevations, flow directions, and groundwater flow gradients during future sampling events.

Each of the wells sampled, with the exception of Monitoring Well MW-11, exhibited concentrations of one or more analytes that exceeded the applicable ADEC cleanup criteria. The samples collected from Monitoring Wells MW-13, MW-14 and MW-16 (duplicate of MW-14) exhibited concentrations of GRO, BTEX, DRO, and RRO; all of which exceeded the respective ADEC cleanup criteria for these analytes. The samples collected from Monitoring Wells MW-2 and B6/VE exhibited concentrations of GRO, benzene, toluene, ethylbenzene, DRO, and RRO that exceeded the respective ADEC cleanup criteria for these analytes. The sample collected from Monitoring Well MW-1 exhibited concentrations of GRO, benzene, toluene, ethylbenzene, and DRO that exceeded the respective ADEC cleanup criteria for these analytes. The sample from Monitoring Well MW-5 exhibited a concentration of benzene that exceeded the ADEC cleanup criterion for this analyte. The sample from Monitoring Well MW-12 exhibited a concentration of RRO that exceeded the ADEC cleanup criterion for this analyte. The sample from Monitoring Well MW-15 exhibited concentrations of GRO, benzene, DRO, and RRO that exceeded the ADEC cleanup criteria for these analytes.

Historical trends demonstrate that the majority of the contaminant concentrations measured within samples collected from the onsite monitoring wells have been declining over the years, with the exception of MW-5. Historical laboratory analytic results are provided in Table 3, and graphical representations of contaminant concentrations within the wells as measured over time are provided in Appendix D. Based on the results of this groundwater monitoring event, no evidence of substantial expansion or migration of the plume of contamination at this site has been identified. For this reason, we recommend that a reduction in sampling frequency, to a yearly basis, be requested of the ADEC for

this site. It is also recommended that all purge water be disposed of at an appropriate disposal facility such as Emerald Alaska.

9.0 EXCLUSIONS AND CONSIDERATIONS

This report presents facts, observations, and inferences based on conditions observed during the period of our project activities, and only those conditions that were evaluated as part of our scope of work. Our conclusions are based solely on our observations made and work conducted and only apply to the immediate vicinities of the locations where samples were collected. In addition, changes to site conditions may have occurred since the completion of our project activities. These changes may be from the actions of man or nature. Changes in regulations may also impact the interpretation of site conditions. BGES will not disclose our findings to any parties other than our client as listed above, except as directed by our client, or as required by law.

Groundwater sampling for this monitoring event was conducted, and this report was prepared by Trevor Crosby; Environmental Scientist II with BGES and a Qualified Person (QP) as defined by the ADEC. Mr. Crosby has conducted groundwater monitoring, site characterization, and remediation activities at numerous sites in the Anchorage area and throughout Alaska. This report was reviewed by Brian Braunstein, Senior Environmental Specialist of BGES. Brian Braunstein is a QP, as defined by the ADEC, and has conducted and managed numerous site characterization and remediation efforts throughout Alaska. This report was approved by Robert N. Braunstein, a Certified Professional Geologist (C.P.G.), who has over 30 years of professional geologic and environmental experience, and has performed or managed thousands of ESAs in the lower 48-States and in Alaska. He has extensive knowledge and experience with contaminated sites and remediation.

Prepared By:



Trevor Crosby
Environmental Scientist II

Reviewed By:

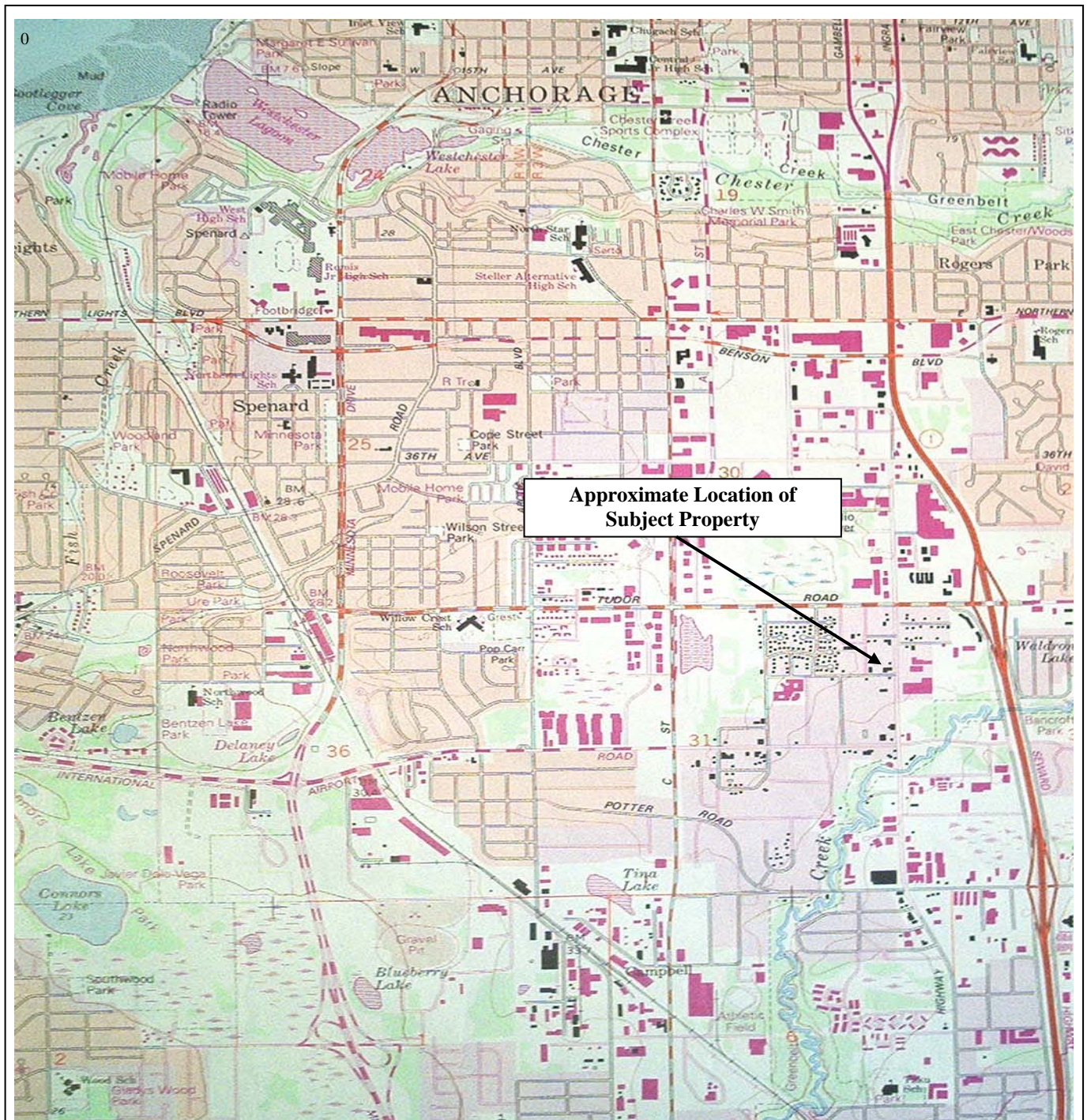


Brian Braunstein
Senior Environmental Specialist

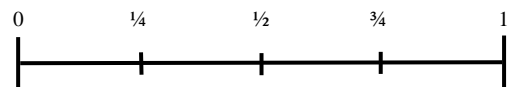
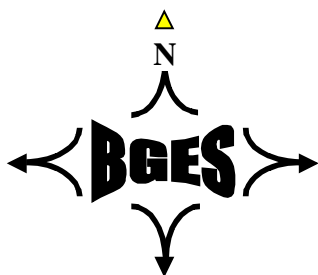
Approved By:



Robert N. Braunstein, C.P.G.
Principal



Source: USGS Map, Anchorage (A-8) NW, Alaska 1979, Revised 1994.



Approximate Scale in Miles

4748 Old Seward Highway
Anchorage, Alaska
Property Vicinity Map

BGES, INC.

July 2014

Figure 1

Continental Motors

MW2
 GRO: 64.4 mg/L
 Benzene: 8.460 mg/L
 Toluene: 17.500 mg/L
 Ethylbenzene: 1.340 mg/L
 DRO: 70.1 mg/L
 RRO: 6.140 mg/L

East 48th Avenue

MW13
 GRO: 159 mg/L
 Benzene: 10.600 mg/L
 Toluene: 42.200 mg/L
 Ethylbenzene: 5.600 mg/L
 Total Xylenes: 28.510 mg/L
 DRO: 22.30 mg/L
 RRO: 2.720 mg/L

6 Robblee's

MW3
 NS

MW10
 NS

MW9
 NS

MW15
 GRO: 7.980 mg/L
 Benzene: 1.790 mg/L
 DRO: 1.830 mg/L
 RRO: 2.250 mg/L

MW14 & MW16 (Duplicate)
(Highest Concentration Shown)
 GRO: 113 mg/L
 Benzene: 19.100 mg/L
 Toluene: 26.200 mg/L
 Ethylbenzene: 2.070 mg/L
 Total Xylenes: 15.240 mg/L
 DRO: 52.300 mg/L
 RRO: 10.900 mg/L

MW1
 GRO: 29.8 mg/L
 Benzene: 2.420 mg/L
 Toluene: 5.310 mg/L
 Ethylbenzene: 1.080 mg/L
 DRO: 8.380 mg/L

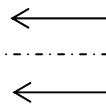
MW8
 NS

B6/VE
 GRO: 22.7 mg/L
 Benzene: 1.730 mg/L
 Toluene: 3.870 mg/L
 Ethylbenzene: 0.734 mg/L
 DRO: 5.570 mg/L
 RRO: 1.280 mg/L

MW5
 Benzene: 0.0839 mg/L

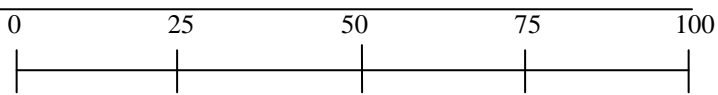
MW12
 RRO: 1.220 mg/L

MW11
 Analyte concentrations do not exceed ADEC cleanup criteria.



Old Seward Highway

Figure adapted from Chemtrack DRO history diagram.



Approximate Scale in Feet

Former Custom Truck (Currently Six Robblee's)
 4748 Old Seward Highway
 Anchorage, Alaska
**Monitoring Well Locations and
 Sampling Results (April 2014)**

- LEGEND**
- = Monitoring Well Location and Sampling Results
 - = Traffic Pattern
 - = Inferred perimeter of benzene contamination exceeding the ADEC cleanup criteria, based on current and historical sampling data.
 - mg/L = Milligrams/Liter
 - NS = Not Sampled
- Note: Only concentrations exceeding ADEC cleanup criteria are shown.

**TABLE 1
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA
MONITORING WELL SAMPLING DATA
(APRIL 28 & 29, 2014)**

Well Number	MW1	MW2	MW3	MW5	MW8	MW9	MW10	MW11	MW12	MW13	MW14	MW15	B6/VE
Date Sampled	4/28/2014	4/29/2014		4/28/2014				4/28/2014	4/28/2014	4/29/2014	4/29/2014	4/29/2014	4/29/2014
Date of Depth and Elevation Measurement	4/28/2014	4/28/2014	4/28/2014	4/28/2014	4/28/2014		4/28/2014	4/28/2014	4/28/2014	4/28/2014	4/28/2014	4/28/2014	4/28/2014
Time of Depth to Water Measurement	15:46	16:21	16:07	13:56	16:31		15:10	9:41	12:20	14:59	14:25	14:36	14:16
Time Sample Collected	17:02	17:05		14:48				11:26	13:20	19:15	13:07	15:30	11:50
Top of Casing Elevation (feet)	102.65	99.89	100.02	101.19	99.62		103.35	103.35	103.35	101.51	101.39	99.81	101.92
Depth to Water (feet below top of casing)	8.83	6.28	6.25	8.00	6.85		7.44	5.79	5.60	7.80	7.79	6.14	7.56
Water Elevation (feet)	93.82	93.61	93.77	93.19	92.77		95.91	97.56	97.75	93.71	93.60	93.67	94.36
Total Depth of Well (feet below top of casing)	21.93	13.49	9.21	13.08	14.88		14.92	13.95	8.94	11.63	13.38	10.40	14.04
Well Casing Diameter (Inches)	2	2	2	2	2		2	2	2	2	2	2	4
Standing Water Well Volume (gallons)	2.14	1.18	0.48	0.83	1.31		1.22	1.33	0.55	0.63	0.91	0.70	4.23
Purge Volume-Actual (gallons)	6.4	3.5		3.0				4.0	4.0	2.5	3.5	3.0	13.0
Temperature (degrees Celsius)	6.5/7.5/7.4/6.7/6.6	5.9/5.3/7.9/5.8		5.8/5.8/5.3				6.1/5.1/4.7/4.2	3.1/3.2/5.1	5.6/4.5/4.6	8.1/6.2/4.5	7.4/4.8/6.3	5
pH (standard units)	6.94/6.80/6.78/6.78/6.89	6.19/6.27/6.31/5.97		6.98/6.64/6.68				6.26/7.29/7.38/8.15	7.26/6.92/7.46	4.62/5.06/5.26	7.09/6.73/6.67	6.68/6.46/6.48	6.32/6.71/6.65/6.78/6.77/6.73/6.88/6.89/6.91/6.94/6.96/6.91
Conductivity (microsiemens per centimeter)	1227/1170/1156/1125/1200	760/790/738/703		851/998/1012				590/618/639/618	615/615/678	1327/1294/1301	970/694/851	622/512/481.2	677/592/619/657/634/628/681/698/724/728/702/685
Oxidation Reduction Potential (millivolts)	128.1/-112.5/-110.5	3.3/-21.2/-44.4/-52.6		-68.1/-62.7/-63.8				90.1/-66.1/-14.4/-93.2	-116.5/-120.2/-137	17.1/-41.5/-42.4	-38.5/-64.2/-59.1	-66.2/-51.7/-57.3	-85.2/-120.9/-93.3/-103.2/-99.5/-85.0/-86.6/-93.8/-90.8/-83.8/-82.6/-72.2
Notes: Values separated by / indicate readings for successive well volumes Sampler: T. Crosby Field parameters measured with a YSI Profession Plus Multi-Meter Weather conditions on April 28 and 29, 2014 were partially cloudy to clear skies with temperatures ranging from approximately 44°F to 57°F .	PVC and flush mount cap in good operable condition.	No PVC cap present at time of sampling. Flush mount cap in good operable condition (no bolts in place to affix lid tightly to cap).	PVC cap was damaged and may need to be replaced. Flush mount cap in good operable condition.	No PVC cap present at time of sampling. Flush mount cap in good operable condition.	No PVC cap present at time of sampling. Flush mount cap in good operable condition (no bolts in place to affix lid tightly to cap).	Flush mount cap submerged in approx. 1.5 inches of water. Not sampled.	PVC cap was is in moderately damaged condition and may need to be replaced. Flush mount cap in good operable condition (no bolts in place to affix lid tightly to cap).	PVC cap was damaged and may need to be replaced. Flush mount cap present but not affixed to monitoring well and filled with sands.	PVC cap present at time of sampling. Flush mount cap in good operable condition.	No PVC cap present at time of sampling. Flush mount cap in good operable condition.	A duplicate sample was collected from MW-14 and labeled MW-16. PVC cap slightly broken and may need to be replaced. Flush mount cap present and in good operable condition.	No PVC cap present at time of sampling. Flush mount cap in good operable condition.	No PVC cap in present at time of sampling. Flush mount cap present but not affixed to monitoring well.

TABLE 2
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA
ANALYTICAL RESULTS - WATER (APRIL 2014)

Water Sample No.	Parameter	Results (mg/L)	LOQ (mg/L)	ADEC Soil Cleanup Criterion (mg/L) ¹	Analytical Method
MW-1-0428	Gasoline Range Organics	29.800	10.0	2.2	AK101
	Benzene	2.420	0.0500	0.005	SW8021B
	Toluene	5.310	0.100	1.0	SW8021B
	Ethylbenzene	1.080	0.100	0.7	SW8021B
	Total Xylenes	6.150	0.200	10	SW8021B
	Diesel Range Organics	8.380	0.619	1.5	AK102
	Residual Range Organics	0.779	0.515	1.1	AK103
MW-2-0429	Gasoline Range Organics	64.400	10.0	2.2	AK101
	Benzene	8.460	0.0500	0.005	SW8021B
	Toluene	17.500	0.100	1.0	SW8021B
	Ethylbenzene	1.340	0.100	0.7	SW8021B
	Total Xylenes	8.970	0.200	10	SW8021B
	Diesel Range Organics	70.100	3.33	1.5	AK102
	Residual Range Organics	6.140	0.556	1.1	AK103
MW-5-0428	Gasoline Range Organics	0.207	0.1	2.2	AK101
	Benzene	0.0839	0.0005	0.005	SW8021B
	Toluene	ND	0.0010	1.0	SW8021B
	Ethylbenzene	ND	0.0010	0.7	SW8021B
	Total Xylenes	0.0121	0.002	10	SW8021B
	Diesel Range Organics	0.757	0.619	1.5	AK102
	Residual Range Organics	0.995	0.515	1.1	AK103
B6/VE-0429	Gasoline Range Organics	22.700	5.00	2.2	AK101
	Benzene	1.730	0.0250	0.005	SW8021B
	Toluene	3.870	0.0500	1.0	SW8021B
	Ethylbenzene	0.734	0.0500	0.7	SW8021B
	Total Xylenes	3.473	0.1000	10	SW8021B
	Diesel Range Organics	5.570	0.600	1.5	AK102
	Residual Range Organics	1.280	0.500	1.1	AK103
MW-11-0428	Gasoline Range Organics	ND	0.1	2.2	AK101
	Benzene	ND	0.0005	0.005	SW8021B
	Toluene	ND	0.001	1.0	SW8021B
	Ethylbenzene	ND	0.001	0.7	SW8021B
	Total Xylenes	ND	0.002	10	SW8021B
	Diesel Range Organics	ND	0.619	1.5	AK102
	Residual Range Organics	0.723	0.515	1.1	AK103
MW-12-0428	Gasoline Range Organics	ND	0.100	2.2	AK101
	Benzene	0.0011	0.0005	0.005	SW8021B
	Toluene	ND	0.001	1.0	SW8021B
	Ethylbenzene	ND	0.001	0.7	SW8021B
	Total Xylenes	ND	0.002	10	SW8021B
	Diesel Range Organics	0.611	0.600	1.5	AK102
	Residual Range Organics	1.220	0.500	1.1	AK103

¹ = Groundwater cleanup criteria based on 18 AAC 75.345 Table C; April 8, 2012

ADEC = Alaska Department of Environmental Conservation; AK = Alaska Method

mg/L = milligrams per Liter; LOQ = Limit of Quantitation; RPD = relative percent difference;

ND = Analyte not detected.

BOLD = indicates concentration exceeds applicable cleanup criterion.

TABLE 2
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA
ANALYTICAL RESULTS - WATER (APRIL 2014)

Water Sample No.	Parameter	Results (mg/L)	LOQ (mg/L)	ADEC Soil Cleanup Criterion (mg/L) ¹	Analytical Method
MW-13-0429	Gasoline Range Organics	159.000	20	2.2	AK101
	Benzene	10.600	0.100	0.005	SW8021B
	Toluene	42.200	0.200	1.0	SW8021B
	Ethylbenzene	5.600	0.200	0.7	SW8021B
	Total Xylenes	28.510	0.400	10	SW8021B
	Diesel Range Organics	22.300	2.40	1.5	AK102
	Residual Range Organics	2.720	0.500	1.1	AK103
MW-14-0429	Gasoline Range Organics	113.000	20	2.2	AK101
	Benzene	19.100	0.100	0.005	SW8021B
	Toluene	26.200	0.200	1.0	SW8021B
	Ethylbenzene	2.070	0.200	0.7	SW8021B
	Total Xylenes	15.240	0.400	10	SW8021B
	Diesel Range Organics	38.600	2.61	1.5	AK102
	Residual Range Organics	6.400	0.543	1.1	AK103
MW-16-0429 (Duplicate of MW-14-0429)					
RPD = 4.83%	Gasoline Range Organics	105.000	20	2.2	AK101
RPD = 9.89%	Benzene	16.400	0.100	0.005	SW8021B
RPD = 7.39%	Toluene	23.400	0.200	1.0	SW8021B
RPD = 2.61%	Ethylbenzene	1.990	0.200	0.7	SW8021B
RPD = 3.25%	Total Xylenes	14.510	0.400	10	SW8021B
RPD = 21.16%	Diesel Range Organics	52.300	2.67	1.5	AK102
RPD = 37.97%	Residual Range Organics	10.900	0.556	1.1	AK103
MW-15-0429	Gasoline Range Organics	7.980	1.00	2.2	AK101
	Benzene	1.790	0.0050	0.005	SW8021B
	Toluene	0.492	0.0100	1.0	SW8021B
	Ethylbenzene	0.113	0.0100	0.7	SW8021B
	Total Xylenes	0.367	0.0200	10	SW8021B
	Diesel Range Organics	1.830	0.619	1.5	AK102
	Residual Range Organics	2.250	0.515	1.1	AK103
¹ = Groundwater cleanup criteria based on 18 AAC 75.345 Table C; April 8, 2012 ADEC = Alaska Department of Environmental Conservation; AK = Alaska Method mg/L = milligrams per Liter; LOQ = Limit of Quantitation; RPD = relative percent difference; ND = Analyte not detected. BOLD = indicates concentration exceeds applicable cleanup criterion.					

TABLE 3
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA
HISTORICAL GROUNDWATER SAMPLING ANALYTICAL RESULTS

Well No.	Date Collected: Parameter	Jan-95	Jul-95	Mar-96	Dec-96	Nov-99	Aug-00	Nov-00	Jun-02	Nov-02	Jul-03	Jan-04	Jun-05	Aug-05	Mar-06	Sept-06	Oct-07	Sep-12	Jun-13	Apr-14	Analytical Method	ADEC Method Two Groundwater Cleanup Level (mg/L) ¹	
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)			
MW-01	GRO	97.6	NS	NS	66.9	NS	14.5	NS	48	NS	NS	NS	30.600	53.300	54.400	28.100	50.400	32.4	40.6	29.80	AK101	1.3	
	DRO	NS	NS	NS	2.45	NS	NS	NS	17	NS	NS	NS	21.3	37.200	19.3	20.1	28.2	22	29.1	8.38	AK102	1.5	
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.05	2.08	1.87	1.46	1.45	1.32	0.78	AK103	1.1	
	Benzene	14.6	NS	NS	11	NS	1.49	NS	4.7	NS	NS	NS	3.140	5.540	7.010	0.109	3.210	2.42	2.720	2.42	SW8021b	0.005	
	Toluene	27.6	NS	NS	16.8	NS	1.68	NS	8.4	NS	NS	NS	6.770	12.300	17.100	8.940	8.930	4.53	6.640	5.31	SW8021b	1.0	
	Ethylbenzene	2.79	NS	NS	2.23	NS	0.41	NS	1.1	NS	NS	NS	0.945	1.490	2.420	1.080	1.100	1.16	1.110	1.08	SW8021b	0.7	
	Total Xylenes	14.8	NS	NS	11.63	NS	2.15	NS	6.1	NS	NS	NS	5.540	9.380	14.120	7.400	7.800	7.91	8.000	6.15	SW8021b	10.0	
MW-02	GRO	156	108	NS	152	NS	58.5	162	89.5	NS	88.400	NS	111.000	107.000	121.000	41.000	37.20	74.1	94.7	64.40	AK101	1.3	
	DRO	NS	NS	NS	9.81	NS	NS	NS	16.3	NS	58	NS	56.0	74.300	70.2	70.1	27.30	58.6	105	70.10	AK102	1.5	
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<5.00	5.63	9.89	1.53	5.5	5.96	6.14	AK103	1.1	
	Benzene	32.8	20.7	NS	25.8	NS	5.23	28.5	10.4	NS	10.2	NS	19.800	19.700	19.000	12.300	2.49	7.36	11.300	8.46	SW8021b	0.005	
	Toluene	44	NS	NS	36.7	NS	7.48	28.7	10.6	NS	10.2	NS	26.500	23.100	31.800	20.200	6.68	19.8	22.600	17.50	SW8021b	1.0	
	Ethylbenzene	3.4	NS	NS	4.4	NS	1.4	2.5	1.3	NS	10.2	NS	2.190	2.230	2.810	1.670	0.82	1.56	1.760	1.34	SW8021b	0.7	
	Total Xylenes	17.5	NS	NS	21.9	NS	9.47	13.45	7.5	NS	10.2	NS	10.550	10.860	14.190	9.500	4.950	10.23	10.120	8.97	SW8021b	10.0	
	Naphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.042	NS	NS	NS	8270C	0.7
	2-Methylnaphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.013	NS	NS	NS	8270C	0.78
	1-Methylnaphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0062	NS	NS	NS	8270C	1.5
	Acenaphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000032	NS	NS	NS	8270C	2.2
	Acenaphthene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000026	NS	NS	NS	8270C	2.2
	Fluorene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000069	NS	NS	NS	8270C	1.46
	Phenanthrene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000051	NS	NS	NS	8270C	11.0
	Anthracene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000097	NS	NS	NS	8270C	11.0
	Fluoranthene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000016	NS	NS	NS	8270C	1.46
	Pyrene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000020	NS	NS	NS	8270C	1.1
	Benzo[a]anthracene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000019	NS	NS	NS	8270C	--
	All other analytes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	8270C	varies
	MW-03	GRO	<MRL	NS	NS	NS	NS	<MRL	NS	<MRL	NS	NS	NS	NS	<0.090	NS	NS	<0.0500	ND	NS	NS	AK101	1.3
		DRO	NS	NS	NS	NS	NS	NS	NS	0.41	NS	NS	NS	NS	0.333	NS	NS	<0.407	ND	NS	NS	AK102	1.5
		RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.764	NS	NS	<0.407	0.556	NS	NS	AK103	1.1
		Benzene	<MRL	NS	NS	NS	NS	<MRL	NS	<MRL	NS	NS	NS	NS	<0.0005	NS	NS	<0.0005	ND	NS	NS	SW8021b	0.005
Toluene		<MRL	NS	NS	NS	NS	<MRL	NS	0.0008	NS	NS	NS	NS	<0.002	NS	NS	<0.0005	ND	NS	NS	SW8021b	1.0	
Ethylbenzene		<MRL	NS	NS	NS	NS	NS	NS	<MRL	NS	NS	NS	NS	<0.002	NS	NS	<0.0005	ND	NS	NS	SW8021b	0.7	
Total Xylenes		<MRL	NS	NS	NS	NS	<MRL	NS	<MRL	NS	NS	NS	NS	<0.002	NS	NS	<1.50	ND	NS	NS	SW8021b	10.0	
MW-05	GRO	0.244	0.287	0.462	0.303	0.7	<MRL	0.148	NS	NS	NS	NS	0.938	2.200	NS	0.456	0.121	ND	NS	0.207	AK101	1.3	
	DRO	NS	NS	NS	0.39	NS	NS	NS	NS	NS	NS	NS	0.603	1.24	NS	0.700	<0.407	ND	NS	0.757	AK102	1.5	
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.79	NS	0.865	<0.407	0.974	NS	0.995	AK103	1.1	
	Benzene	0.13	0.18	0.243	0.157	0.272	0.011	0.079	NS	NS	NS	NS	0.467	1.170	NS	0.180	0.0119	0.00113	NS	0.0839	SW8021b	0.005	
	Toluene	<MRL	NS	<MRL	<MRL	<MRL	<MRL	<MRL	NS	NS	NS	NS	<MRL	<0.020	NS	0.00450	0.000861	ND	NS	ND	NS	SW8021b	1.0
	Ethylbenzene	<MRL	NS	<MRL	<MRL	<MRL	<MRL	<MRL	NS	NS	NS	NS	0.00236	<0.020	NS	ND	<0.0005	ND	NS	ND	NS	SW8021b	0.7
	Total Xylenes	<MRL	NS	<MRL	<MRL	<MRL	<MRL	<MRL	NS	NS	NS	NS	0.00586	<0.020	NS	0.02128	0.00204	ND	NS	0.0121	NS	SW8021b	10.0

GRO = Gasoline Range Organics DRO = Diesel Range Organics NS = Not Sampled ND = Not Detected NA = Not Analyzed
 <MRL = Value less than Method Reporting Limit. mg/L = milligrams per Liter VOCs = Volatile Organic Compounds
BOLD = Value exceeds ADEC cleanup threshold. ¹ Groundwater cleanup thresholds based on 18AAC 75.345 Table C.

TABLE 3
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA
HISTORICAL GROUNDWATER SAMPLING ANALYTICAL RESULTS

Well No.	Date Collected: Parameter	Jan-95	Jul-95	Mar-96	Dec-96	Nov-99	Aug-00	Nov-00	Jun-02	Nov-02	Jul-03	Jan-04	Jun-05	Aug-05	Mar-06	Sept-06	Oct-07	Sept-12	Jun-13	Apr-14	Analytical Method	ADEC Method Two Groundwater Cleanup Level (mg/L) ¹
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)		
B6VE	GRO	20.7	23	13.5	18.6	24	42.1	25.9	15	NS	NS	NS	50.700	57.900	27.400	40.600	54.600	8.290	25.8	22.7	AK101	1.3
	DRO	NS	NS	NS	2.52	NS	NS	NS	1.6	NS	NS	NS	20.1	20.100	90.0	10.80	15.6	4.690	8.80	5.57	AK102	1.5
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	9.630	1.93	2.01	1.02	1.430	1.21	1.28	AK103	1.1
	Benzene	1.53	3.11	1.34	2.29	1.75	3.82	2.5	1.69	NS	NS	NS	4.540	7.660	2.020	0.0939	3.880	1.060	2.750	1.730	SW8021b	0.005
	Toluene	3.74	NS	2.21	4	3.12	4.48	3.16	1.9	NS	NS	NS	9.980	12.500	5.660	9.450	9.190	1.430	4.310	3.870	SW8021b	1.0
	Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	0.231	NS	NS	NS	1.440	1.090	1.070	0.555	1.100	0.122	0.721	0.734	SW8021b	0.7
	Total Xylenes	3.51	NS	2.2	2.3	2.9	3.36	2.9	1.5	NS	NS	NS	7.220	8.810	5.240	6.730	5.950	1.139	3.660	3.473	SW8021b	10.0
MW-08	GRO	3.45	3.92	9.89	NS	1.8	1.2	5.3	9.5	NS	0.8	NS	2.070	4.220	NS	0.577	4.280	0.79	NS	NS	AK101	1.3
	DRO	NS	NS	NS	NS	NS	NS	NS	14.4	2.06	<MRL	NS	0.558	<0.306	NS	ND	<0.394	ND	NS	NS	AK102	1.5
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.510	NS	ND	<0.394	0.506	NS	NS	AK103	1.1
	Benzene	1.51	2.49	4.91	NS	0.69	0.5	2.31	3.6	NS	0.33	NS	1.090	2.180	NS	0.165	1.450	0.355	NS	NS	SW8021b	0.005
	Toluene	0.0027	NS	NS	NS	NS	NS	NS	0.016	NS	0.0008	NS	0.00285	<0.020	NS	0.0452	<0.025	ND	NS	NS	SW8021b	1.0
	Ethylbenzene	0.004	NS	0.1	<MRL	<MRL	<MRL	<MRL	0.021	NS	<MRL	NS	<MRL	<0.020	NS	0.00415	<0.025	ND	NS	NS	SW8021b	0.7
	Total Xylenes	0.007	NS	0.23	<MRL	<MRL	<MRL	<MRL	0.34	NS	<MRL	NS	0.0147	0.0256	NS	0.0539	<0.075	ND	NS	NS	SW8021b	10.0
MW-09	GRO	<MRL	NS	NS	NS	NS	<MRL	NS	<MRL	NS	NS	NS	NS	<0.090	NS	NS	<0.050	ND	NS	NS	AK101	1.3
	DRO	NS	NS	NS	NS	NS	NS	NS	0.44	NS	NS	NS	NS	0.798	NS	NS	<0.407	ND	NS	NS	AK102	1.5
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.23	NS	NS	<0.407	ND	NS	NS	AK103	1.1
	Benzene	<MRL	NS	NS	NS	NS	<MRL	NS	<MRL	NS	NS	NS	NS	<0.0005	NS	NS	<0.0005	ND	NS	NS	SW8021b	0.005
	Toluene	<MRL	NS	NS	NS	NS	<MRL	NS	<MRL	NS	NS	NS	NS	<0.002	NS	NS	<0.0005	ND	NS	NS	SW8021b	1.0
	Ethylbenzene	<MRL	NS	NS	NS	NS	<MRL	NS	<MRL	NS	NS	NS	NS	<0.002	NS	NS	<0.0005	ND	NS	NS	SW8021b	0.7
	Total Xylenes	<MRL	NS	NS	NS	NS	<MRL	NS	<MRL	NS	NS	NS	NS	<0.002	NS	NS	<0.0015	ND	NS	NS	SW8021b	10.0
MW-10	GRO	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	NS	NS	NS	NS	<0.090	NS	NS	<0.050	ND	NS	NS	AK101	1.3
	DRO	NS	NS	NS	0.39	NS	NS	NS	0.32	NS	NS	NS	NS	<0.303	NS	NS	<0.391	ND	NS	NS	AK102	1.5
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	<0.505	NS	NS	<0.391	ND	NS	NS	AK103	1.1
	Benzene	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	NS	NS	NS	NS	<0.0005	NS	NS	<0.0005	ND	NS	NS	SW8021b	0.005
	Toluene	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	NS	NS	NS	NS	<0.002	NS	NS	<0.0005	ND	NS	NS	SW8021b	1.0
	Ethylbenzene	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	NS	NS	NS	NS	<0.002	NS	NS	<0.0005	ND	NS	NS	SW8021b	0.7
	Total Xylenes	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	NS	NS	NS	NS	<0.002	NS	NS	<0.0005	ND	NS	NS	SW8021b	10.0
MW-11	GRO	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	<0.090	0.233	ND	<0.050	ND	NS	ND	AK101	1.3
	DRO	NS	NS	NS	NS	NS	NS	NS	3.82	NS	1.72	<MRL	1.16	2.01	0.650	0.481	0.759	ND	NS	ND	AK102	1.5
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	3.45	0.945	0.535	1.79	0.601	NS	0.723	AK103	1.1
	Benzene	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	0.004	<MRL	0.000899	0.00586	0.02280	0.0142	0.00576	ND	NS	ND	SW8021b	0.005
	Toluene	NS	NS	NS	NS	NS	NS	NS	0.0027	NS	<MRL	<MRL	<MRL	<0.002	0.0601	ND	<0.0005	ND	NS	ND	SW8021b	1.0
	Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	<0.002	0.00659	ND	<0.0005	ND	NS	ND	SW8021b	0.7
	Total Xylenes	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	<0.002	0.03412	ND	<0.0015	ND	NS	ND	SW8021b	10.0
MW-12	GRO	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	0.53	<MRL	0.635	1.170	0.262	0.497	0.035	NS	NS	ND	AK101	1.3
	DRO	NS	NS	NS	0.44	NS	NS	NS	0.44	NS	1.53	<MRL	0.498	0.756	0.415	0.588	0.714	NS	NS	0.611	AK102	1.5
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2.730	1.77	0.536	1.060	NS	NS	1.22	AK103	1.1
	Benzene	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	0.237	0.00218	0.247	0.398	0.101	0.205	0.142	NS	NS	0.0011	SW8021b	0.005
	Toluene	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	<0.002	0.0322	0.0176	<0.0005	NS	NS	ND	SW8021b	1.0
	Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	<0.002	0.00407	0.00260	<0.0005	NS	NS	ND	SW8021b	0.7
	Total Xylenes	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	<MRL	<MRL	<MRL	<0.002	0.02015	0.01967	<0.0015	NS	NS	ND	SW8021b	10.0

GRO = Gasoline Range Organics DRO = Diesel Range Organics NS = Not Sampled ND = Not Detected NA = Not Analyzed

<MRL = Value less than Method Reporting Limit. mg/L = milligrams per Liter VOCs = Volatile Organic Compounds

BOLD = Value exceeds ADEC cleanup threshold. ¹ Groundwater cleanup thresholds based on 18AAC 75.345 Table C.

**TABLE 3
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA
HISTORICAL GROUNDWATER SAMPLING ANALYTICAL RESULTS**

Well No.	Date Collected: Parameter	Jan-95	Jul-95	Mar-96	Dec-96	Nov-99	Aug-00	Nov-00	Jun-02	Nov-02	Jul-03	Jan-04	Jun-05	Aug-05	Mar-06	Sept-06	Oct-07	Sep-12	Jun-13	Analytical Method	ADEC Method Two Groundwater Cleanup Level (mg/L) ¹			
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)					
MW-13	GRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	217	236	159	AK101	1.3		
	DRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	20.1	31.1	22.3	AK102	1.5		
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.75	1.90	2.72	AK103	1.1		
	Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	19.6	18.500	10.600	SW8021b	0.005	
	Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	63.9	58.300	42.200	SW8021b	1.0	
	Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	5.29	4.900	5.600	SW8021b	0.7	
	Total Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	26.7	26.900	28.510	SW8021b	10.0	
	1,2,4-Trimethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2.140	NS	SW8260B		
	n-Propylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.399	NS	SW8260B		
MW-14	GRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	118	140	113	AK101	1.3		
	DRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	58.6	56.4	52.3	AK102	1.5		
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	8.88	9.52	10.9	AK103	1.1		
	Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	19.6	17.300	19.100	SW8021b	0.005	
	Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	26.1	25.800	26.200	SW8021b	1.0	
	Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2.51	2.240	2.070	SW8021b	0.7	
	Total Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	14.78	15.320	15.240	SW8021b	10.0	
MW-15	GRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	86.100	NS	NS	NS	56.500	1.33	2.25	7.98	AK101	1.3	
	DRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	14.6	NS	NS	NS	4.96	1.03	2.01	1.83	AK102	1.5	
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.19	NS	NS	NS	0.439	1.010	1.19	2.25	AK103	1.1	
	Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	16.900	NS	NS	NS	6.690	0.0467	0.517	1.790	SW8021b	0.005
	Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	19.800	NS	NS	NS	8.630	0.0514	0.213	0.492	SW8021b	1.0
	Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	2.030	NS	NS	NS	1.270	0.0229	0.0567	0.1130	SW8021b	0.7
	Total Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	10.010	NS	NS	NS	6.810	0.1119	0.2171	0.3670	SW8021b	10.0
Tap Well (facility well)	GRO	NS	NS	<MRL	NS	<MRL	<MRL	NS	<MRL	NS	NS	NS	<MRL	NS	NS	0.305	NS	NS	NS	NS	NS	NS	AK101	1.3
	DRO	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	NS	NS	<MRL	NS	NS	ND	NS	NS	NS	NS	NS	NS	AK102	1.5
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS	NS	AK103	1.1
	Benzene	NS	NS	<MRL	NS	<MRL	<MRL	NS	<MRL	NS	NS	NS	NS	ND	NS	NS	0.0108	NS	ND	NS	NS	NS	SW8021b ²	0.005
	Toluene	NS	NS	<MRL	NS	<MRL	<MRL	NS	<MRL	NS	NS	NS	NS	ND	NS	NS	0.0495	NS	ND	NS	NS	NS	SW8021b ²	1.0
	Ethylbenzene	NS	NS	<MRL	NS	<MRL	<MRL	NS	<MRL	NS	NS	NS	NS	ND	NS	NS	0.00947	NS	ND	NS	NS	NS	SW8021b ²	0.7
	Total Xylenes	NS	NS	<MRL	NS	<MRL	<MRL	NS	<MRL	NS	NS	NS	NS	ND	NS	NS	0.0613	NS	ND	NS	NS	NS	SW8021b ²	10.0
VOCs	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NA	NS	ND	NS	NS	NS	EPA 524.2	varies	

GRO = Gasoline Range Organics DRO = Diesel Range Organics NS = Not Sampled ND = Not Detected NA = Not Analyzed
 <MRL = Value less than Method Reporting Limit. mg/L = milligrams per Liter VOCs = Volatile Organic Compounds
BOLD = Value exceeds ADEC cleanup threshold. ¹ Groundwater cleanup thresholds based on 18AAC 75.345 Table C.

**APPENDIX A
FIELD NOTES**

- 4/28/14 partially cloudy, 44°F
- 08:30 BGES on site to set up and collect water samples.
- 09:15 Traffic control on site to set up barriers around MW 11 and MW 12.
- 09:30 Set up on MW-11. Purged; sampled; deconned. MW-11-0428 at 11:26
- 12:15 Completed MW-11. Moved to MW-12.
- 12:20 Set up on MW-12. Purged; sampled; deconned. MW-12-0428 at 13:20.
- 13:50 Completed MW-12. Moved to MW-5
- 14:30 Traffic Control off-site
- 13:55 Set up on MW-5. Purged; sampled; deconned. MW-5-0428 at ~~15:30~~ 14:48
- 15:30 Completed MW-5. moved to MW-1
- 15:35 Set up on MW-1. Purged; sampled; deconned. MW-1-0428 at 15:58
- 17:15 Completed MW-1
- 17:30 BGES off-site

Traun

Time	Well	DTW	TDW	Notes
15:46	MW1	8.83'	21.93'	Good condition
16:21	MW2	6.28'	13.49'	No PVC cap in place. No bolts in place.
16:07	MW3	6.25'	9.21'	PVC cap broken. May need repair.
13:56	MW5	8.00'	13.08'	No PVC cap in place
14:16	B6/VE	7.56'	14.04'	No bolts on lid. No PVC cap in place. May need repair.
-	MW9	-	-	Well submerged in approximately 1.5" water in the gutter
16:31	MW8	6.85'	14.88'	No bolts or bolt holes in lid. No PVC cap in place.
15:10	MW10	7.44'	14.92'	No bolts on lid. (No holes for bolts). PVC cap broken
09:41	MW11	5.79'	13.95'	Lid not secure. May need repair
12:20	MW12	5.60'	8.94'	Good condition
14:59	MW13	7.80'	11.63'	Good condition No PVC cap in place
14:25	MW14	7.79'	13.38'	PVC cap slightly broken. May need repair.
14:36	MW15	6.14'	10.40'	No PVC cap in place.

DTW = Depth to water

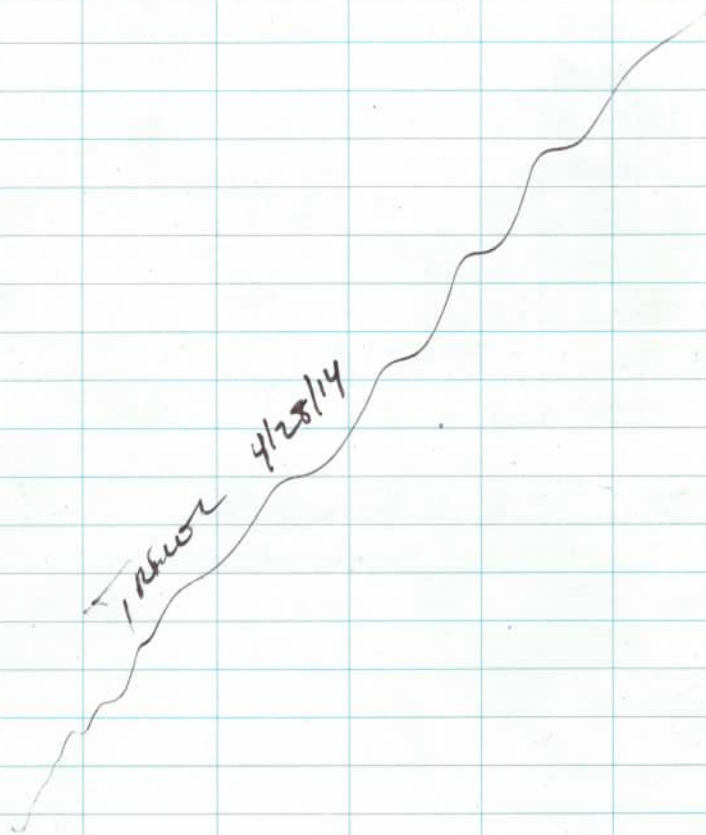
TDW = Total Depth of well

Traun

WELL	Time Purge	Time Sample	Bladder Intake	Volume purged	Purge rate
BG/VE	09:30	11:50	8.06'	~13 gal	150-500 ml
MW-14	12:26	13:07	8.29'	3 gal	350-400 ml min
MW-16 (duplicate of MW-14)		13:50	-	-	-
MW-15-0429	14:45	15:30	8.64'	3 gal	300 ml/min
MW-2-0429	16:15	17:05	10.78'	3.5 gal	250-350 ml
MW-13-0429	18:10	19:15	8.30'	2.5 gal	250-400 min

Trevor 4/22/19

Well	Time Purge	Time Sample	Bladder Intake	Volume Purged	Purge Rate
MW 11	10:30	11:26	6.29'	4 gals	150 mL/min -300
MW 12	12:45	13:20	6.1'	4.5 gals	400 mL/min
MW 5	14:10	14:48	8.5'	3 gals	400 mL/min
MW 1	15:58	17:02	9.33'	7 gals	400 mL/min



4/29/14

CFAE SURFS, 44°F

08:50 - Arrived on site

08:55 - SET UP ON BG/VE, REPLACED 36" BLADDER

Purged, Sampled, disconnected

12:10 completed BG/VE. BGVE-0429 @

12:20 set up on MW14., purged, sampled, disconnected

- Very difficult sampling due to bladder/scurry

Appearance - reducing surface tension.

MW14-0429 @ 13:07 and duplicate

14:35 Sample MW16-0429 @ 13:50.

~~14:35~~ Completed MW-14.14:40 ~~14:40~~ moved to MW-15. Set up for purge, sample and decon. MW15-0429 @ 15:30

16:00 completed MW15 moved to MW-2.

16:00 setup on MW 2, purged, Sampled, disconnected. difficulty sampling similar to MW-14.

18:00 moved to MW-13. purged, sampled, disconnected. Trouble w/ dead battery, bladder plugged up with silt, cleaned, redeployed - worked MW-13-0429 @ 19:15.

BFS left site @ - 19:40.

Trewer 4/29/14

GROUND WATER MONITORING LOG

BGES, INC.

Well Number: MW-1

57°F

Time Arrived On Site: _____

Weather Conditions: partially cloudy. 10 mph wind SSE.

Date of Depth to Water Measurement: 4/28/14

Time of Depth to Water Measurement: _____

Top of Casing Elevation: _____
 Depth to Water (feet below TOC): _____
 Water Elevation: _____

At asphalt grade
8.83'
-

Type of Sampling Equipment:
MP 50 Controller, QED Bladder
Pump - 1.75"

Total Depth of Well (feet below TOC): _____
 Depth to Water (feet below TOC): _____
 Water Column (feet): _____

21.93'
8.83'
13.1'

Volume of well (gals) _____

2.13'

=0.1632 X Water Column (For 2-inch well)
 =0.6528 X Water Column (For 4-inch well)
 =1.4688 X Water Column (For 6-inch well)

Bladder pump placed at 9.33'

Time Purging Began: 15:58

Time of Sampling: 17:02

Volume purged 7 gallons

PURGE A MINIMUM OF THREE WELL VOLUMES ≈ 6.4 gallons

16:06 pH 6.94
 Conductivity 122.7
 ORP -152.8
 Temperature 6.5°C

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

purge volumes
total volume after
Sampling.

16:13 pH 6.80
 Conductivity 117.0
 ORP -122.1
 Temperature 7.5°C

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

purge rate = approx 400 mL/min
Sample rate = 150 mL/min

16:21 pH 6.78
 Conductivity 115.6
 ORP -128.1
 Temperature 7.4°C

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

16:31 pH 6.78
 Conductivity 112.5
 ORP -112.5
 Temperature 6.7°C

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

16:53 pH 6.89
 Conductivity 120.0
 ORP -110.5
 Temperature 6.6°C

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

pH _____
 Conductivity _____
 ORP _____
 Dissolved Oxygen _____
 Temperature _____

pH _____
 Conductivity _____
 ORP _____
 Dissolved Oxygen _____
 Temperature _____

GROUND WATER MONITORING LOG

BGES, INC.

Well Number: MW-2

Time Arrived On Site: _____

Weather Conditions: Clear 55°f

Date of Depth to Water Measurement: 4/25/14

Time of Depth to Water Measurement: 16:21

Top of Casing Elevation:
Depth to Water (feet below TOC):
Water Elevation:

At asphalt grade
6.28'
+

Type of Sampling Equipment:
MP 50 Controller, QED Bladder
Pump 1.75"

Total Depth of Well (feet below TOC):
Depth to Water (feet below TOC):
Water Column (feet):

13.49'
6.28'
7.21'

Volume of well (gals)

1.17

=0.1632 X Water Column (For 2-inch well)
=0.6528 X Water Column (For 4-inch well)
=1.4688 X Water Column (For 6-inch well)

Bladder pump placed at 6.28' below TOC.

Time Purging Began: 16:15

Time of Sampling: 17:05

Volume purged 3.5 gallons

PURGE A MINIMUM OF THREE WELL VOLUMES ~3.5 gallons

pH 6.19
Conductivity 760
ORP 3.3
Temperature 5.9°C

pH _____
Conductivity _____
ORP _____
Temperature _____

purge volume = 3.5 gallons
total volume = 4.0 gallons

pH 6.27
Conductivity 790
ORP -21.2
Temperature 5.3°C

pH _____
Conductivity _____
ORP _____
Temperature _____

purge rate = $\frac{250-400}{min}$
Sample rate = $\frac{100-150}{min}$

pH 6.31
Conductivity 738
ORP -44.4
Temperature 7.9°C

pH _____
Conductivity _____
ORP _____
Temperature _____

pH 5.97
Conductivity 703
ORP -52.6
Temperature 5.8°C

pH _____
Conductivity _____
ORP _____
Temperature _____

→ low flow - dropped bladder pump to 7.78'

→ low flow - dipped bladder pump to 7.78' @ 16:45

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

→ low-flow - dropped bladder pump to 10.78' @ 16:54
* ~ 3 gallons purged

pH _____
Conductivity _____
ORP _____
Disolved Oxygen _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Disolved Oxygen _____
Temperature _____

sampling VOCs very difficult! soapy / bubbles at surface of sample - surface tension not in favor for VOC sampling. (one vial has small air bubble due to difficult sampling)

GROUND WATER MONITORING LOG

BGES, INC.

Well Number: MW-5

Time Arrived On Site: 13:56

Weather Conditions: Partially cloudy, 51°F

Date of Depth to Water Measurement: 4/28/14

Time of Depth to Water Measurement: 13:56

Top of Casing Elevation:
Depth to Water (feet below TOC):
Water Elevation:

At Asphalt grade Type of Sampling Equipment:
8.00' MP50 Controller, RED Bladder
- Pump 1.75"

Total Depth of Well (feet below TOC):
Depth to Water (feet below TOC):
Water Column (feet):

13.08'
8.00'
5.08'

Volume of well (gals)

.82

=0.1632 X Water Column (For 2-inch well)
=0.6528 X Water Column (For 4-inch well)
=1.4688 X Water Column (For 6-inch well)

Bladder pump placed at 8.5' below TOC.

Time Purging Began: 14:10

Time of Sampling: 14:48

Volume purged 3 gallons

PURGE A MINIMUM OF THREE WELL VOLUMES

14:15

pH 6.98
Conductivity 851
ORP -68.1
Temperature 5.8°C

pH _____
Conductivity _____
ORP _____
Temperature _____

purged vol. = 3 gallons
total vol. after sampling:
3.5 gallons

14:27

pH 6.64
Conductivity 998
ORP -62.7
Temperature 5.8°C

pH _____
Conductivity _____
ORP _____
Temperature _____

purge rate = Approx 400 mL/min.
sample rate = 150 mL/min

14:36

pH 6.68
Conductivity 1012
ORP -63.8
Temperature 5.3°C

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Dissolved Oxygen _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Dissolved Oxygen _____
Temperature _____

Samples collected and recorded at approx. one-gallon intervals.

GROUND WATER MONITORING LOG

BGES, INC.

Well Number: B6/VE

Time Arrived On Site: 08:50

Weather Conditions: CLEAR SKIES

Date of Depth to Water Measurement: 4/28/14

Time of Depth to Water Measurement: 14:16

Top of Casing Elevation:
Depth to Water (feet below TOC):
Water Elevation:

AT Asphalt grade Type of Sampling Equipment:
7.56' MP 50 Controller, QED Bladder Pump
- 1.75" x 36"

Total Depth of Well (feet below TOC):
Depth to Water (feet below TOC):
Water Column (feet):

14.04'
7.56'
6.48'

Volume of well (gals)

Bladder pump placed at 8.06' below TOC
4.23
- Dropped to 9.06' @ 11:20

= 0.1632 X Water Column (For 2-inch well)
= 0.6528 X Water Column (For 4-inch well)
= 1.4688 X Water Column (For 6-inch well)

Time Purging Began: 09:30 - Dropped to 10.06' @ 11:30

Time of Sampling: 11:50 - sample depth = 10.06'

PURGE A MINIMUM OF THREE WELL VOLUMES ~ 125 gallow

Volume purged 12.5 gal.

09:38
pH 6.32
Conductivity 677
ORP -85.2
Temperature 4.9°C

pH 10:34 6.88
Conductivity 681
ORP -86.6
Temperature 5.7°C

prge volume = 500 mL/min
total volume = 13 gal

09:45
pH 6.71
Conductivity 592
ORP -120.9
Temperature 4.2°C

pH 10:45 6.89
Conductivity 698
ORP -93.8
Temperature 6.1°C

purge rate = ~ 400-500 mL/min

09:53
pH 6.65
Conductivity 619
ORP -93.3
Temperature 4.7°C

pH 11:03 6.91
Conductivity 724
ORP -90.8
Temperature 6.5°C

Sample rate = 150 mL/min

10:02
pH 6.78
Conductivity 657
ORP -163.2
Temperature 6.1°C

pH 11:18 6.94
Conductivity 728
ORP -83.8
Temperature 6.9°C

① Slowed flow rate!
~ 9 gallons discharged by 11:07.

10:12
pH 6.77
Conductivity 634
ORP -99.5
Temperature 5.5°C

pH 11:30 6.96
Conductivity 702
ORP -82.6
Temperature 6.6°C

② At 11:20 pump lowered 1.5' to increase flow rate
at 11:30 pump lowered 1.0' to increase flow rate.

10:23
pH 6.73
Conductivity 628
ORP -85.0
Dissolved Oxygen -
Temperature 5.1°C

pH 11:40 6.91
Conductivity 685
ORP -72.2
Dissolved Oxygen -
Temperature 6.5°C

Flow rate from well has slowed to ~ 175-250 mL @ 10:20 AM. Well appears to have slow recharge -

GROUND WATER MONITORING LOG

BGES, INC.

Well Number: MW 11

Time Arrived On Site: 08:30

Weather Conditions: partially cloudy, 44°F

Date of Depth to Water Measurement: 4/28/14

Time of Depth to Water Measurement: 09:40

Top of Casing Elevation:
Depth to Water (feet below TOC):
Water Elevation:

At Asphalt Grade Type of Sampling Equipment:
5.79' MP50 Controller, RED Bladder
- Pump 1.75"

Total Depth of Well (feet below TOC):
Depth to Water (feet below TOC):
Water Column (feet):

13.95'
5.79'
8.16'

Volume of well (gals)

1.33

=0.1632 X Water Column (For 2-inch well)
=0.6528 X Water Column (For 4-inch well)
=1.4688 X Water Column (For 6-inch well)

Bladder Pump Placed at 6.29' below TOC

Time Purging Began: 10:30
Time of Sampling: 11:26
Volume purged 4 gallons

PURGE A MINIMUM OF THREE WELL VOLUMES

10:40

pH 6.210
Conductivity 590
ORP 90.1
Temperature 6.1°C

pH _____
Conductivity _____
ORP _____
Temperature _____

purged volume = 4 gals.
total volume (after sampling) = 5 gals.

11:00

pH 7.29
Conductivity 618
ORP -66.1
Temperature 5.1°C

pH _____
Conductivity _____
ORP _____
Temperature _____

Purge Rate: 250-300 mL/min

11:15

pH 7.38
Conductivity 639
ORP -14.4
Temperature 4.7°C

pH _____
Conductivity _____
ORP _____
Temperature _____

Sample Rate: 150 mL/min

11:25

pH 8.15
Conductivity 618
ORP -93.2
Temperature 4.2°C

pH _____
Conductivity _____
ORP _____
Temperature _____

Discharge Rate =
(0.5 x Depth) + 10 PSI
of bladder

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Dissolved Oxygen _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Dissolved Oxygen _____
Temperature _____

MP50 Controller set to 15 PSI for discharge per Steve's (TPT) instruction. Water samples collected and recorded at one-gallon intervals

GROUND WATER MONITORING LOG

BGES, INC.

Well Number: MW-12

Time Arrived On Site: 12:20

Weather Conditions: Partially cloudy, 56°F

Date of Depth to Water Measurement: 4/28/14

Time of Depth to Water Measurement: 12:20

Top of Casing Elevation:
Depth to Water (feet below TOC):
Water Elevation:

At Asphalt grade Type of Sampling Equipment:
5.60' MPSO Controller, QED Bladder
Pump 1.75"

Total Depth of Well (feet below TOC):
Depth to Water (feet below TOC):
Water Column (feet):

8.94'
5.60'
3.34

Volume of well (gals)

.54

= 0.1632 X Water Column (For 2-inch well)
= 0.6528 X Water Column (For 4-inch well)
= 1.4688 X Water Column (For 6-inch well)

Bladder Pump Placed at 6.1' below TOC

Time Purging Began: 12:45

PURGE A MINIMUM OF THREE WELL VOLUMES

Time of Sampling: 13:20

Volume purged 4.5 gals
4.0

pH 7.26
Conductivity 615
ORP -116.5
Temperature 3.1°C

pH _____
Conductivity _____
ORP _____
Temperature _____

purged vol. = ⁴~~5~~ gals
total vol. after sampling
4.5 gals

pH 6.92
Conductivity 615
ORP -120.2
Temperature 3.2°C

pH _____
Conductivity _____
ORP _____
Temperature _____

PURGE rate = 400 mL/min
Sample rate = 150 mL/min

pH 7.46
Conductivity 678
ORP -137
Temperature 5.1°C

pH _____
Conductivity _____
ORP _____
Temperature _____

Discharge rate =
(0.5 x Depth) + 10 PSI
↓
of bladder

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Dissolved Oxygen _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Dissolved Oxygen _____
Temperature _____

Purged water is discolored, and has slight sewer odor.
Water samples collected and recorded at approximately
one-gallon intervals. MPSO to

GROUND WATER MONITORING LOG

BGES, INC.

Well Number: MW-13

Time Arrived On Site: _____

Weather Conditions: clear, 55°F

Date of Depth to Water Measurement: 4/28/14

Time of Depth to Water Measurement: 14:59

Top of Casing Elevation: _____

At asphalt grade

Type of Sampling Equipment: _____

Depth to Water (feet below TOC): _____

7.80'

MP50 Controller, RED Bladder

Water Elevation: _____

-

Pump 1.75"

Total Depth of Well (feet below TOC): _____

11.63'

Depth to Water (feet below TOC): _____

7.80'

Water Column (feet): _____

3.83'

Volume of well (gals) _____

0.62

=0.1632 X Water Column (For 2-inch well)

bladder pump placed at 8.30' below TOC.

=0.6528 X Water Column (For 4-inch well)

=1.4688 X Water Column (For 6-inch well)

Time Purging Began: 16:10 18:10

Time of Sampling: 19:15

PURGE A MINIMUM OF THREE WELL VOLUMES 1.8 gallons

Volume purged 2.5 gal - water cleared

80% well volume = 8.42' ✓

18:58

pH 4.62
 Conductivity 1327
 ORP 17.1
 Temperature 5.6°C

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

purge volume = 2.5 gal
total volume =

19:01

pH 5.06
 Conductivity 1294
 ORP -41.5
 Temperature 4.5°C

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

purge rate = 1250 - 400 ml/min
sample rate = 150 ml/min

19:10

pH 5.26
 Conductivity 1301
 ORP -42.4
 Temperature 4.6°C

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

pH _____
 Conductivity _____
 ORP _____
 Temperature _____

pH _____
 Conductivity _____
 ORP _____
 Dissolved Oxygen _____
 Temperature _____

pH _____
 Conductivity _____
 ORP _____
 Dissolved Oxygen _____
 Temperature _____

18:45
pump clogged @ 18:32 - cleaned
pump - redeployed - working ✓
used 2 bladder pumps -

16:30 Battery (TT) died - looked up to truck and idled vehicle to continue sampling.
16:32 - NO more water pumping from well - pump about 1/2 gallon

GROUND WATER MONITORING LOG

BGES, INC.

Well Number: M/W-14

Time Arrived On Site: _____

Weather Conditions: Partially cloudy 54°F

Date of Depth to Water Measurement: 4/28/14

Time of Depth to Water Measurement: 14:25

Top of Casing Elevation:
Depth to Water (feet below TOC):
Water Elevation:

At Asphalt grade
7.79'
-

Type of Sampling Equipment:
MP 50 Controller, QED Bladder
Pump 1.75" x

Total Depth of Well (feet below TOC):
Depth to Water (feet below TOC):
Water Column (feet):

13.38'
7.79'
5.59'

Volume of well (gals)

0.9 gal

= 0.1632 X Water Column (For 2-inch well)
= 0.6528 X Water Column (For 4-inch well)
= 1.4688 X Water Column (For 6-inch well)

Bladder pump placed at 8.29'

Time Purging Began: 12:26

PURGE A MINIMUM OF THREE WELL VOLUMES \approx 2.73 gal

Time of Sampling: 13:07

Volume purged 3.5 gal.

12:35
pH 7.09
Conductivity 970
ORP -38.5
Temperature 8.1°C

pH _____
Conductivity _____
ORP _____
Temperature _____

purged volume = 3.5 gal.
total volume = 4.5 gal

12:55
pH 6.73
Conductivity 694
ORP -64.2
Temperature 6.2°C

pH _____
Conductivity _____
ORP _____
Temperature _____

purge rate = 400 mL/min
sample rate = 150 mL/min

1:02
pH 6.67
Conductivity 851
ORP -59.1
Temperature 4.5°C

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Dissolved Oxygen _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Dissolved Oxygen _____
Temperature _____

*M/W16-0429 - duplicate sample collected @ 13:50.

Discharge rate dropped to 205 mL/min - dropped bladder pump to 9.29' @ 1:40 pm
BTEX / CLO samples very difficult to sample. Many VOC vials used and discarded due to difficult sampling. Soap / bubbles on water appear to be reducing surface tension.

GROUND WATER MONITORING LOG

BGES, INC.

Well Number: MW-15

Time Arrived On Site: _____

Weather Conditions: Clear 55°F

Date of Depth to Water Measurement: 4/22/14

Time of Depth to Water Measurement: 14:36

Top of Casing Elevation:
Depth to Water (feet below TOC):
Water Elevation:

At asphalt grade Type of Sampling Equipment:
6.14' MPSO Controller, QED Bladder
- pump 1.75'

Total Depth of Well (feet below TOC):
Depth to Water (feet below TOC):
Water Column (feet):

10.40'
6.14'
4.26'

Volume of well (gals)

Bladder pump placed at 6.64'

0.69 gal

=0.1632 X Water Column (For 2-inch well)
=0.6528 X Water Column (For 4-inch well)
=1.4688 X Water Column (For 6-inch well)

Time Purging Began: 14:45

Time of Sampling: 15:30

Volume purged 3 gallons

PURGE A MINIMUM OF THREE WELL VOLUMES \approx 2.08

14:58
pH 6.68
Conductivity 622
ORP -66.2
Temperature 7.40c

pH _____
Conductivity _____
ORP _____
Temperature _____
purge volume - 3 gallons
total volume - ~~3.5~~ 3.25 gallons

15:10
pH 6.46
Conductivity 512
ORP -51.7
Temperature 4.80c

pH _____
Conductivity _____
ORP _____
Temperature _____

15:20
pH 6.48
Conductivity 481.2
ORP -57.3
Temperature 6.30c

pH _____
Conductivity _____
ORP _____
Temperature _____
purge rate - 250 ml
sample rate 150 ml.

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____
@ 15:04 - dropped bladder pump 1.0' to increase flow rate.

pH _____
Conductivity _____
ORP _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Temperature _____
* 15:22 dropped bladder pump to 1.0' to 8.64' for sampling - low flow rate!

pH _____
Conductivity _____
ORP _____
Disolved Oxygen _____
Temperature _____

pH _____
Conductivity _____
ORP _____
Disolved Oxygen _____
Temperature _____

APPENDIX B
LABORATORY ANALYTICAL DATA



Laboratory Report of Analysis

To: BGES Inc.
1042 E 6th Avenue
Anchorage, AK 99501
(907) 644-2900

Report Number: **1141606**

Client Project: **Old Seward**

Dear Jayne Martin,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of five years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Victoria at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,
SGS North America Inc.

Victoria Pennick
Project Manager
Victoria.Pennick@sgs.com

Date

Print Date: 05/13/2014 3:42:07PM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Case Narrative

SGS Client: **BGES Inc.**
SGS Project: **1141606**
Project Name/Site: **Old Seward**
Project Contact: **Jayne Martin**

Refer to sample receipt form for information on sample condition.

MW-1-0428 (1141606001) PS

AK102/103 - Unknown hydrocarbon with several peaks is present.

MW-2-0429 (1141606002) PS

AK102/103 - Unknown hydrocarbon with several peaks is present.

MW-5-0428 (1141606003) PS

AK102/103 - Unknown hydrocarbon with several peaks is present.

B6/VE-0429 (1141606004) PS

AK102 - The pattern is consistent with a weathered gasoline.
AK103 - Unknown hydrocarbon with several peaks is present.

MW-11-0428 (1141606005) PS

AK103 - Unknown hydrocarbon with several peaks is present.

MW-12-0428 (1141606006) PS

AK102/103 - Unknown hydrocarbon with several peaks is present.

MW-13-0429 (1141606007) PS

AK103 - Unknown hydrocarbon with several peaks is present.

MW-14-0429 (1141606008) PS

AK103 - Unknown hydrocarbon with several peaks is present.

MW-15-0429 (1141606009) PS

AK102 - The pattern is consistent with a weathered gasoline.
AK103 - Unknown hydrocarbon with several peaks is present.

MW-16-0429 (1141606010) PS

AK102 - Unknown hydrocarbon with several peaks is present.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 05/13/2014 3:42:07PM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

Note: Sample summaries which include a result for "Total Solids" have already been adjusted for moisture content. All DRO/RRO analyses are integrated per SOP.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
MW-1-0428	1141606001	04/28/2014	04/30/2014	Water (Surface, Eff., Ground)
MW-2-0429	1141606002	04/29/2014	04/30/2014	Water (Surface, Eff., Ground)
MW-5-0428	1141606003	04/28/2014	04/30/2014	Water (Surface, Eff., Ground)
B6/VE-0429	1141606004	04/29/2014	04/30/2014	Water (Surface, Eff., Ground)
MW-11-0428	1141606005	04/28/2014	04/30/2014	Water (Surface, Eff., Ground)
MW-12-0428	1141606006	04/28/2014	04/30/2014	Water (Surface, Eff., Ground)
MW-13-0429	1141606007	04/29/2014	04/30/2014	Water (Surface, Eff., Ground)
MW-14-0429	1141606008	04/29/2014	04/30/2014	Water (Surface, Eff., Ground)
MW-15-0429	1141606009	04/29/2014	04/30/2014	Water (Surface, Eff., Ground)
MW-16-0429	1141606010	04/29/2014	04/30/2014	Water (Surface, Eff., Ground)
Trip Blank	1141606011	04/28/2014	04/30/2014	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
AK101	AK101/8021 Combo.
SW8021B	AK101/8021 Combo.
AK102	Diesel/Residual Range Organics Water
AK103	Diesel/Residual Range Organics Water

Print Date: 05/13/2014 3:42:09PM

Detectable Results Summary

Client Sample ID: **MW-1-0428**

Lab Sample ID: 1141606001

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	8.38	mg/L
Residual Range Organics	0.779	mg/L
Benzene	2420	ug/L
Ethylbenzene	1080	ug/L
Gasoline Range Organics	29.8	mg/L
o-Xylene	1960	ug/L
P & M -Xylene	4190	ug/L
Toluene	5310	ug/L

Client Sample ID: **MW-2-0429**

Lab Sample ID: 1141606002

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	70.1	mg/L
Residual Range Organics	6.14	mg/L
Benzene	8460	ug/L
Ethylbenzene	1340	ug/L
Gasoline Range Organics	64.4	mg/L
o-Xylene	2630	ug/L
P & M -Xylene	6340	ug/L
Toluene	17500	ug/L

Client Sample ID: **MW-5-0428**

Lab Sample ID: 1141606003

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.757	mg/L
Residual Range Organics	0.995	mg/L
Benzene	83.9	ug/L
Gasoline Range Organics	0.207	mg/L
P & M -Xylene	12.1	ug/L

Client Sample ID: **B6/VE-0429**

Lab Sample ID: 1141606004

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	5.57	mg/L
Residual Range Organics	1.28	mg/L
Benzene	1730	ug/L
Ethylbenzene	734	ug/L
Gasoline Range Organics	22.7	mg/L
o-Xylene	863	ug/L
P & M -Xylene	2610	ug/L
Toluene	3870	ug/L

Client Sample ID: **MW-11-0428**

Lab Sample ID: 1141606005

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	0.723	mg/L

Detectable Results Summary

Client Sample ID: **MW-12-0428**

Lab Sample ID: 1141606006

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.611	mg/L
Residual Range Organics	1.22	mg/L
Benzene	1.10	ug/L

Volatile Fuels

Client Sample ID: **MW-13-0429**

Lab Sample ID: 1141606007

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	22.3	mg/L
Residual Range Organics	2.72	mg/L
Benzene	10600	ug/L
Ethylbenzene	5600	ug/L
Gasoline Range Organics	159	mg/L
o-Xylene	8710	ug/L
P & M -Xylene	19800	ug/L
Toluene	42200	ug/L

Volatile Fuels

Client Sample ID: **MW-14-0429**

Lab Sample ID: 1141606008

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	38.6	mg/L
Residual Range Organics	6.40	mg/L
Benzene	19100	ug/L
Ethylbenzene	2070	ug/L
Gasoline Range Organics	113	mg/L
o-Xylene	4440	ug/L
P & M -Xylene	10800	ug/L
Toluene	26200	ug/L

Volatile Fuels

Client Sample ID: **MW-15-0429**

Lab Sample ID: 1141606009

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	1.83	mg/L
Residual Range Organics	2.25	mg/L
Benzene	1790	ug/L
Ethylbenzene	113	ug/L
Gasoline Range Organics	7.98	mg/L
o-Xylene	103	ug/L
P & M -Xylene	264	ug/L
Toluene	492	ug/L

Volatile Fuels

Detectable Results Summary

Client Sample ID: **MW-16-0429**

Lab Sample ID: 1141606010

Semivolatile Organic Fuels

Volatile Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	52.3	mg/L
Residual Range Organics	10.9	mg/L
Benzene	16400	ug/L
Ethylbenzene	1990	ug/L
Gasoline Range Organics	105	mg/L
o-Xylene	4210	ug/L
P & M -Xylene	10300	ug/L
Toluene	23400	ug/L

Print Date: 05/13/2014 3:42:10PM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 f 907.561.5301 www.us.sgs.com

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Results of MW-1-0428

Client Sample ID: **MW-1-0428**
Client Project ID: **Old Seward**
Lab Sample ID: 1141606001
Lab Project ID: 1141606

Collection Date: 04/28/14 17:02
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	8.38	0.619	0.186	mg/L	1		05/01/14 22:41
Surrogates							
5a Androstane	76.3	50-150		%	1		05/01/14 22:41

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 05/01/14 22:41
Container ID: 1141606001-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.779	0.515	0.155	mg/L	1		05/01/14 22:41
Surrogates							
n-Triacontane-d62	76.6	50-150		%	1		05/01/14 22:41

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/01/14 22:41
Container ID: 1141606001-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-1-0428

Client Sample ID: **MW-1-0428**
Client Project ID: **Old Seward**
Lab Sample ID: 1141606001
Lab Project ID: 1141606

Collection Date: 04/28/14 17:02
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	29.8	10.0	3.10	mg/L	100		05/07/14 08:24
Surrogates							
4-Bromofluorobenzene	83.5	50-150		%	100		05/07/14 08:24

Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 08:24
Container ID: 1141606001-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	2420	50.0	15.0	ug/L	100		05/07/14 08:24
Ethylbenzene	1080	100	31.0	ug/L	100		05/07/14 08:24
o-Xylene	1960	100	31.0	ug/L	100		05/07/14 08:24
P & M -Xylene	4190	200	62.0	ug/L	100		05/07/14 08:24
Toluene	5310	100	31.0	ug/L	100		05/07/14 08:24
Surrogates							
1,4-Difluorobenzene	98.6	77-115		%	100		05/07/14 08:24

Batch Information

Analytical Batch: VFC11870
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/07/14 08:24
Container ID: 1141606001-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-2-0429

Client Sample ID: MW-2-0429
Client Project ID: Old Seward
Lab Sample ID: 1141606002
Lab Project ID: 1141606

Collection Date: 04/29/14 17:05
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC11291
Analytical Method: AK102
Analyst: HM
Analytical Date/Time: 05/02/14 14:16
Container ID: 1141606002-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/01/14 22:50
Container ID: 1141606002-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-2-0429

Client Sample ID: **MW-2-0429**
Client Project ID: **Old Seward**
Lab Sample ID: 1141606002
Lab Project ID: 1141606

Collection Date: 04/29/14 17:05
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	64.4	10.0	3.10	mg/L	100		05/07/14 08:43
Surrogates							
4-Bromofluorobenzene	84.2	50-150		%	100		05/07/14 08:43

Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 08:43
Container ID: 1141606002-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	8460	50.0	15.0	ug/L	100		05/07/14 08:43
Ethylbenzene	1340	100	31.0	ug/L	100		05/07/14 08:43
o-Xylene	2630	100	31.0	ug/L	100		05/07/14 08:43
P & M -Xylene	6340	200	62.0	ug/L	100		05/07/14 08:43
Toluene	17500	100	31.0	ug/L	100		05/07/14 08:43
Surrogates							
1,4-Difluorobenzene	106	77-115		%	100		05/07/14 08:43

Batch Information

Analytical Batch: VFC11870
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/07/14 08:43
Container ID: 1141606002-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-5-0428

Client Sample ID: MW-5-0428
Client Project ID: Old Seward
Lab Sample ID: 1141606003
Lab Project ID: 1141606

Collection Date: 04/28/14 14:48
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 05/01/14 23:00
Container ID: 1141606003-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/01/14 23:00
Container ID: 1141606003-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-5-0428

Client Sample ID: MW-5-0428
Client Project ID: Old Seward
Lab Sample ID: 1141606003
Lab Project ID: 1141606

Collection Date: 04/28/14 14:48
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 0.207, 0.100, 0.0310, mg/L, 1, 05/07/14 06:14

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene, 79.5, 50-150, %, 1, 05/07/14 06:14

Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 06:14
Container ID: 1141606003-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene, 104, 77-115, %, 1, 05/07/14 06:14

Batch Information

Analytical Batch: VFC11870
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/07/14 06:14
Container ID: 1141606003-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of **B6/VE-0429**

Client Sample ID: **B6/VE-0429**
Client Project ID: **Old Seward**
Lab Sample ID: 1141606004
Lab Project ID: 1141606

Collection Date: 04/29/14 11:50
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	5.57	0.600	0.180	mg/L	1		05/01/14 23:10
Surrogates							
5a Androstane	80.1	50-150		%	1		05/01/14 23:10

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 05/01/14 23:10
Container ID: 1141606004-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	1.28	0.500	0.150	mg/L	1		05/01/14 23:10
Surrogates							
n-Triacontane-d62	82.5	50-150		%	1		05/01/14 23:10

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/01/14 23:10
Container ID: 1141606004-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Print Date: 05/13/2014 3:42:10PM



Results of **B6/VE-0429**

Client Sample ID: **B6/VE-0429**
Client Project ID: **Old Seward**
Lab Sample ID: 1141606004
Lab Project ID: 1141606

Collection Date: 04/29/14 11:50
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	22.7	5.00	1.55	mg/L	50		05/07/14 09:01
Surrogates							
4-Bromofluorobenzene	84.7	50-150		%	50		05/07/14 09:01

Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 09:01
Container ID: 1141606004-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	1730	25.0	7.50	ug/L	50		05/07/14 09:01
Ethylbenzene	734	50.0	15.5	ug/L	50		05/07/14 09:01
o-Xylene	863	50.0	15.5	ug/L	50		05/07/14 09:01
P & M -Xylene	2610	100	31.0	ug/L	50		05/07/14 09:01
Toluene	3870	50.0	15.5	ug/L	50		05/07/14 09:01
Surrogates							
1,4-Difluorobenzene	97.6	77-115		%	50		05/07/14 09:01

Batch Information

Analytical Batch: VFC11870
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/07/14 09:01
Container ID: 1141606004-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-11-0428

Client Sample ID: MW-11-0428
Client Project ID: Old Seward
Lab Sample ID: 1141606005
Lab Project ID: 1141606

Collection Date: 04/28/14 11:26
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 05/01/14 23:20
Container ID: 1141606005-D
Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/01/14 23:20
Container ID: 1141606005-D
Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-11-0428

Client Sample ID: MW-11-0428
Client Project ID: Old Seward
Lab Sample ID: 1141606005
Lab Project ID: 1141606

Collection Date: 04/28/14 11:26
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: Gasoline Range Organics, 0.100 U, 0.100, 0.0310, mg/L, 1, 05/07/14 06:32

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: 4-Bromofluorobenzene, 70.8, 50-150, %, 1, 05/07/14 06:32

Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 06:32
Container ID: 1141606005-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row 1: 1,4-Difluorobenzene, 102, 77-115, %, 1, 05/07/14 06:32

Batch Information

Analytical Batch: VFC11870
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/07/14 06:32
Container ID: 1141606005-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-12-0428

Client Sample ID: MW-12-0428
Client Project ID: Old Seward
Lab Sample ID: 1141606006
Lab Project ID: 1141606

Collection Date: 04/28/14 13:20
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 05/01/14 23:29
Container ID: 1141606006-D
Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/01/14 23:29
Container ID: 1141606006-D
Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-12-0428

Client Sample ID: **MW-12-0428**
Client Project ID: **Old Seward**
Lab Sample ID: 1141606006
Lab Project ID: 1141606

Collection Date: 04/28/14 13:20
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.100 U	0.100	0.0310	mg/L	1		05/07/14 06:51

Surrogates

4-Bromofluorobenzene	74.6	50-150		%	1		05/07/14 06:51
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Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 06:51
Container ID: 1141606006-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	1.10	0.500	0.150	ug/L	1		05/07/14 06:51
Ethylbenzene	1.00 U	1.00	0.310	ug/L	1		05/07/14 06:51
o-Xylene	1.00 U	1.00	0.310	ug/L	1		05/07/14 06:51
P & M -Xylene	2.00 U	2.00	0.620	ug/L	1		05/07/14 06:51
Toluene	1.00 U	1.00	0.310	ug/L	1		05/07/14 06:51

Surrogates

1,4-Difluorobenzene	99.7	77-115		%	1		05/07/14 06:51
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Batch Information

Analytical Batch: VFC11870
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/07/14 06:51
Container ID: 1141606006-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-13-0429

Client Sample ID: MW-13-0429
Client Project ID: Old Seward
Lab Sample ID: 1141606007
Lab Project ID: 1141606

Collection Date: 04/29/14 19:15
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC11291
Analytical Method: AK102
Analyst: HM
Analytical Date/Time: 05/02/14 14:26
Container ID: 1141606007-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/01/14 23:39
Container ID: 1141606007-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-13-0429

Client Sample ID: **MW-13-0429**
Client Project ID: **Old Seward**
Lab Sample ID: 1141606007
Lab Project ID: 1141606

Collection Date: 04/29/14 19:15
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	159	20.0	6.20	mg/L	200		05/07/14 09:20

Surrogates

4-Bromofluorobenzene	83	50-150		%	200		05/07/14 09:20
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Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 09:20
Container ID: 1141606007-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	10600	100	30.0	ug/L	200		05/07/14 09:20
Ethylbenzene	5600	200	62.0	ug/L	200		05/07/14 09:20
o-Xylene	8710	200	62.0	ug/L	200		05/07/14 09:20
P & M -Xylene	19800	400	124	ug/L	200		05/07/14 09:20
Toluene	42200	200	62.0	ug/L	200		05/07/14 09:20

Surrogates

1,4-Difluorobenzene	101	77-115		%	200		05/07/14 09:20
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Batch Information

Analytical Batch: VFC11870
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/07/14 09:20
Container ID: 1141606007-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-14-0429

Client Sample ID: MW-14-0429
Client Project ID: Old Seward
Lab Sample ID: 1141606008
Lab Project ID: 1141606

Collection Date: 04/29/14 13:07
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC11291
Analytical Method: AK102
Analyst: HM
Analytical Date/Time: 05/02/14 14:36
Container ID: 1141606008-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 920 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/01/14 23:49
Container ID: 1141606008-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 920 mL
Prep Extract Vol: 1 mL



Results of MW-14-0429

Client Sample ID: **MW-14-0429**
Client Project ID: **Old Seward**
Lab Sample ID: 1141606008
Lab Project ID: 1141606

Collection Date: 04/29/14 13:07
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	113	20.0	6.20	mg/L	200		05/07/14 09:39
Surrogates							
4-Bromofluorobenzene	81.6	50-150		%	200		05/07/14 09:39

Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 09:39
Container ID: 1141606008-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	19100	100	30.0	ug/L	200		05/07/14 09:39
Ethylbenzene	2070	200	62.0	ug/L	200		05/07/14 09:39
o-Xylene	4440	200	62.0	ug/L	200		05/07/14 09:39
P & M -Xylene	10800	400	124	ug/L	200		05/07/14 09:39
Toluene	26200	200	62.0	ug/L	200		05/07/14 09:39
Surrogates							
1,4-Difluorobenzene	103	77-115		%	200		05/07/14 09:39

Batch Information

Analytical Batch: VFC11870
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/07/14 09:39
Container ID: 1141606008-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-15-0429

Client Sample ID: MW-15-0429
Client Project ID: Old Seward
Lab Sample ID: 1141606009
Lab Project ID: 1141606

Collection Date: 04/29/14 15:30
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK102
Analyst: AYC
Analytical Date/Time: 05/01/14 23:59
Container ID: 1141606009-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/01/14 23:59
Container ID: 1141606009-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-15-0429

Client Sample ID: MW-15-0429
Client Project ID: Old Seward
Lab Sample ID: 1141606009
Lab Project ID: 1141606

Collection Date: 04/29/14 15:30
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Gasoline Range Organics, 7.98, 1.00, 0.310, mg/L, 10, 05/07/14 10:16

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 4-Bromofluorobenzene, 83.3, 50-150, %, 10, 05/07/14 10:16

Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 10:16
Container ID: 1141606009-B

Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows: Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 1,4-Difluorobenzene, 98.2, 77-115, %, 10, 05/08/14 19:24

Batch Information

Analytical Batch: VFC11874
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/08/14 19:24
Container ID: 1141606009-C

Prep Batch: VXX25819
Prep Method: SW5030B
Prep Date/Time: 05/08/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-16-0429

Client Sample ID: MW-16-0429
Client Project ID: Old Seward
Lab Sample ID: 1141606010
Lab Project ID: 1141606

Collection Date: 04/29/14 13:50
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC11291
Analytical Method: AK102
Analyst: HM
Analytical Date/Time: 05/02/14 14:46
Container ID: 1141606010-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC11290
Analytical Method: AK103
Analyst: AYC
Analytical Date/Time: 05/02/14 00:09
Container ID: 1141606010-D

Prep Batch: XXX30945
Prep Method: SW3520C
Prep Date/Time: 05/01/14 09:50
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

Print Date: 05/13/2014 3:42:10PM



Results of MW-16-0429

Client Sample ID: MW-16-0429
Client Project ID: Old Seward
Lab Sample ID: 1141606010
Lab Project ID: 1141606

Collection Date: 04/29/14 13:50
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Gasoline Range Organics and Surrogates (4-Bromofluorobenzene).

Batch Information

Analytical Batch: VFC11870
Analytical Method: AK101
Analyst: HM
Analytical Date/Time: 05/07/14 09:57
Container ID: 1141606010-B
Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Benzene, Ethylbenzene, o-Xylene, P & M -Xylene, Toluene, and Surrogates (1,4-Difluorobenzene).

Batch Information

Analytical Batch: VFC11870
Analytical Method: SW8021B
Analyst: HM
Analytical Date/Time: 05/07/14 09:57
Container ID: 1141606010-B
Prep Batch: VXX25809
Prep Method: SW5030B
Prep Date/Time: 05/06/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Results of Trip Blank

Client Sample ID: **Trip Blank**
Client Project ID: **Old Seward**
Lab Sample ID: 1141606011
Lab Project ID: 1141606

Collection Date: 04/28/14 11:26
Received Date: 04/30/14 09:53
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Gasoline Range Organics	0.100 U	0.100	0.0310	mg/L	1		05/05/14 22:50

Surrogates

4-Bromofluorobenzene	83.9	50-150		%	1		05/05/14 22:50
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Batch Information

Analytical Batch: VFC11869
Analytical Method: AK101
Analyst: ST
Analytical Date/Time: 05/05/14 22:50
Container ID: 1141606011-A

Prep Batch: VXX25806
Prep Method: SW5030B
Prep Date/Time: 05/05/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Benzene	0.500 U	0.500	0.150	ug/L	1		05/05/14 22:50
Ethylbenzene	1.00 U	1.00	0.310	ug/L	1		05/05/14 22:50
o-Xylene	1.00 U	1.00	0.310	ug/L	1		05/05/14 22:50
P & M -Xylene	2.00 U	2.00	0.620	ug/L	1		05/05/14 22:50
Toluene	1.00 U	1.00	0.310	ug/L	1		05/05/14 22:50

Surrogates

1,4-Difluorobenzene	96.5	77-115		%	1		05/05/14 22:50
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Batch Information

Analytical Batch: VFC11869
Analytical Method: SW8021B
Analyst: ST
Analytical Date/Time: 05/05/14 22:50
Container ID: 1141606011-A

Prep Batch: VXX25806
Prep Method: SW5030B
Prep Date/Time: 05/05/14 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:10PM



Method Blank

Blank ID: MB for HBN 1515271 [VXX/25806]

Blank Lab ID: 1208257

QC for Samples:

1141606011

Matrix: Water (Surface, Eff., Ground)

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene	81.4	50-150		%

Batch Information

Analytical Batch: VFC11869

Analytical Method: AK101

Instrument: Agilent 7890 PID/FID

Analyst: ST

Analytical Date/Time: 5/5/2014 8:02:00PM

Prep Batch: VXX25806

Prep Method: SW5030B

Prep Date/Time: 5/5/2014 8:00:00AM

Prep Initial Wt./Vol.: 5 mL

Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:13PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1141606 [VXX25806]
 Blank Spike Lab ID: 1208260
 Date Analyzed: 05/05/2014 18:47

Spike Duplicate ID: LCSD for HBN 1141606 [VXX25806]
 Spike Duplicate Lab ID: 1208261
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1141606011

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	0.999	100	1.00	0.916	92	(60-120)	8.70	(< 20)
Surrogates									
4-Bromofluorobenzene	0.0500		80	0.0500		78	(50-150)	2.40	

Batch Information

Analytical Batch: VFC11869
 Analytical Method: AK101
 Instrument: Agilent 7890 PID/FID
 Analyst: ST

Prep Batch: VXX25806
 Prep Method: SW5030B
 Prep Date/Time: 05/05/2014 08:00
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1515271 [VXX/25806]
 Blank Lab ID: 1208257

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1141606011

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Surrogates				
1,4-Difluorobenzene	100	77-115		%

Batch Information

Analytical Batch: VFC11869
 Analytical Method: SW8021B
 Instrument: Agilent 7890 PID/FID
 Analyst: ST
 Analytical Date/Time: 5/5/2014 8:02:00PM

Prep Batch: VXX25806
 Prep Method: SW5030B
 Prep Date/Time: 5/5/2014 8:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1141606 [VXX25806]
 Blank Spike Lab ID: 1208258
 Date Analyzed: 05/05/2014 19:06

Spike Duplicate ID: LCSD for HBN 1141606 [VXX25806]
 Spike Duplicate Lab ID: 1208259
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1141606011

Results by SW8021B

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	100	111	111	100	113	113	(80-120)	2.00	(< 20)
Ethylbenzene	100	112	112	100	114	114	(75-125)	1.80	(< 20)
o-Xylene	100	105	105	100	106	106	(80-120)	1.70	(< 20)
P & M -Xylene	200	217	109	200	221	110	(75-130)	1.80	(< 20)
Toluene	100	111	111	100	113	113	(75-120)	2.10	(< 20)
Surrogates									
1,4-Difluorobenzene	50		107	50		106	(77-115)	0.79	

Batch Information

Analytical Batch: **VFC11869**
 Analytical Method: **SW8021B**
 Instrument: **Agilent 7890 PID/FID**
 Analyst: **ST**

Prep Batch: **VXX25806**
 Prep Method: **SW5030B**
 Prep Date/Time: **05/05/2014 08:00**
 Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1515411 [VXX/25809]
 Blank Lab ID: 1208570

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1141606001, 1141606002, 1141606003, 1141606004, 1141606005, 1141606006, 1141606007, 1141606008, 1141606009, 1141606010

Results by AK101

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene	82.3	50-150		%

Batch Information

Analytical Batch: VFC11870
 Analytical Method: AK101
 Instrument: Agilent 7890 PID/FID
 Analyst: HM
 Analytical Date/Time: 5/7/2014 4:04:01AM

Prep Batch: VXX25809
 Prep Method: SW5030B
 Prep Date/Time: 5/6/2014 8:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1141606 [VXX25809]
 Blank Spike Lab ID: 1208572
 Date Analyzed: 05/07/2014 05:00

Spike Duplicate ID: LCSD for HBN 1141606 [VXX25809]
 Spike Duplicate Lab ID: 1208574
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1141606001, 1141606002, 1141606003, 1141606004, 1141606005, 1141606006, 1141606007, 1141606008, 1141606009, 1141606010

Results by AK101

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Gasoline Range Organics	1.00	0.955	96	1.00	0.984	98	(60-120)	2.90	(< 20)
Surrogates									
4-Bromofluorobenzene	0.0500		86	0.0500		88	(50-150)	2.30	

Batch Information

Analytical Batch: VFC11870
 Analytical Method: AK101
 Instrument: Agilent 7890 PID/FID
 Analyst: HM

Prep Batch: VXX25809
 Prep Method: SW5030B
 Prep Date/Time: 05/06/2014 08:00
 Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1515411 [VXX/25809]
 Blank Lab ID: 1208570

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1141606001, 1141606002, 1141606003, 1141606004, 1141606005, 1141606006, 1141606007, 1141606008, 1141606009, 1141606010

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Surrogates				
1,4-Difluorobenzene	102	77-115		%

Batch Information

Analytical Batch: VFC11870
 Analytical Method: SW8021B
 Instrument: Agilent 7890 PID/FID
 Analyst: HM
 Analytical Date/Time: 5/7/2014 4:04:01AM

Prep Batch: VXX25809
 Prep Method: SW5030B
 Prep Date/Time: 5/6/2014 8:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1141606 [VXX25809]
 Blank Spike Lab ID: 1208571
 Date Analyzed: 05/07/2014 04:41

Spike Duplicate ID: LCSD for HBN 1141606 [VXX25809]
 Spike Duplicate Lab ID: 1208573
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1141606001, 1141606002, 1141606003, 1141606004, 1141606005, 1141606006, 1141606007, 1141606008, 1141606009, 1141606010

Results by SW8021B

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	100	111	111	100	114	114	(80-120)	3.40	(< 20)
Ethylbenzene	100	111	111	100	115	115	(75-125)	3.50	(< 20)
o-Xylene	100	104	104	100	107	107	(80-120)	2.40	(< 20)
P & M -Xylene	200	214	107	200	222	111	(75-130)	3.40	(< 20)
Toluene	100	111	111	100	115	115	(75-120)	3.80	(< 20)
Surrogates									
1,4-Difluorobenzene	50		105	50		107	(77-115)	2.00	

Batch Information

Analytical Batch: VFC11870
 Analytical Method: SW8021B
 Instrument: Agilent 7890 PID/FID
 Analyst: HM

Prep Batch: VXX25809
 Prep Method: SW5030B
 Prep Date/Time: 05/06/2014 08:00
 Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1518361 [VXX/25819]
 Blank Lab ID: 1208811

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1141606009

Results by SW8021B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Benzene	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Surrogates				
1,4-Difluorobenzene	94.7	77-115		%

Batch Information

Analytical Batch: VFC11874
 Analytical Method: SW8021B
 Instrument: Agilent 7890 PID/FID
 Analyst: HM
 Analytical Date/Time: 5/8/2014 3:57:01PM

Prep Batch: VXX25819
 Prep Method: SW5030B
 Prep Date/Time: 5/8/2014 8:00:00AM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL

Print Date: 05/13/2014 3:42:19PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1141606 [VXX25819]
 Blank Spike Lab ID: 1208812
 Date Analyzed: 05/08/2014 16:53

Spike Duplicate ID: LCSD for HBN 1141606 [VXX25819]
 Spike Duplicate Lab ID: 1208814
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1141606009

Results by SW8021B

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Benzene	100	111	111	100	114	114	(80-120)	3.40	(< 20)
Ethylbenzene	100	110	110	100	114	114	(75-125)	3.10	(< 20)
o-Xylene	100	103	103	100	106	106	(80-120)	3.00	(< 20)
P & M -Xylene	200	212	106	200	220	110	(75-130)	3.30	(< 20)
Toluene	100	111	111	100	115	115	(75-120)	3.40	(< 20)
Surrogates									
1,4-Difluorobenzene	50		101	50		109	(77-115)	7.60	

Batch Information

Analytical Batch: VFC11874
 Analytical Method: SW8021B
 Instrument: Agilent 7890 PID/FID
 Analyst: HM

Prep Batch: VXX25819
 Prep Method: SW5030B
 Prep Date/Time: 05/08/2014 08:00
 Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1514367 [XXX/30945]
 Blank Lab ID: 1207604

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1141606001, 1141606002, 1141606003, 1141606004, 1141606005, 1141606006, 1141606007, 1141606008, 1141606009, 1141606010

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.278J	0.600	0.180	mg/L
Surrogates				
5a Androstane	72.4	60-120		%

Batch Information

Analytical Batch: XFC11290
 Analytical Method: AK102
 Instrument: HP 6890 Series II FID SV D R
 Analyst: AYC
 Analytical Date/Time: 5/1/2014 10:11:00PM

Prep Batch: XXX30945
 Prep Method: SW3520C
 Prep Date/Time: 5/1/2014 9:50:00AM
 Prep Initial Wt./Vol.: 1000 mL
 Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1141606 [XXX30945]
 Blank Spike Lab ID: 1207605
 Date Analyzed: 05/01/2014 22:21

Spike Duplicate ID: LCSD for HBN 1141606
 [XXX30945]
 Spike Duplicate Lab ID: 1207606
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1141606001, 1141606002, 1141606003, 1141606004, 1141606005, 1141606006, 1141606007,
 1141606008, 1141606009, 1141606010

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Diesel Range Organics	5	4.64	93	5	4.32	86	(75-125)	7.20	(< 20)	
Surrogates										
5a Androstane	0.1		95	0.1		89	(60-120)	6.50		

Batch Information

Analytical Batch: **XFC11290**
 Analytical Method: **AK102**
 Instrument: **HP 6890 Series II FID SV D R**
 Analyst: **AYC**

Prep Batch: **XXX30945**
 Prep Method: **SW3520C**
 Prep Date/Time: **05/01/2014 09:50**
 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL

Method Blank

Blank ID: MB for HBN 1514367 [XXX/30945]
 Blank Lab ID: 1207604

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1141606001, 1141606002, 1141606003, 1141606004, 1141606005, 1141606006, 1141606007, 1141606008, 1141606009, 1141606010

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.262J	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62	79.4	60-120		%

Batch Information

Analytical Batch: XFC11290
 Analytical Method: AK103
 Instrument: HP 6890 Series II FID SV D R
 Analyst: AYC
 Analytical Date/Time: 5/1/2014 10:11:00PM

Prep Batch: XXX30945
 Prep Method: SW3520C
 Prep Date/Time: 5/1/2014 9:50:00AM
 Prep Initial Wt./Vol.: 1000 mL
 Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1141606 [XXX30945]
 Blank Spike Lab ID: 1207605
 Date Analyzed: 05/01/2014 22:21

Spike Duplicate ID: LCSD for HBN 1141606
 [XXX30945]
 Spike Duplicate Lab ID: 1207606
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1141606001, 1141606002, 1141606003, 1141606004, 1141606005, 1141606006, 1141606007,
 1141606008, 1141606009, 1141606010

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Residual Range Organics	5	5.04	101	5	4.84	97	(60-120)	4.00	(< 20)	
Surrogates										
n-Triacontane-d62	0.1		87	0.1		81	(60-120)	6.50		

Batch Information

Analytical Batch: XFC11290
 Analytical Method: AK103
 Instrument: HP 6890 Series II FID SV D R
 Analyst: AYC

Prep Batch: XXX30945
 Prep Method: SW3520C
 Prep Date/Time: 05/01/2014 09:50
 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL



SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were custody seals intact? Note # & location, if applicable. COC accompanied samples?	Yes No <u>N/A</u> <u>Yes</u> No N/A	
Temperature blank compliant* (i.e., 0-6°C after CF)? * Note: Exemption permitted for chilled samples collected less than 8 hours ago. Cooler ID: <u>1</u> @ <u>-0.6</u> w/ Therm.ID: <u>238</u> Cooler ID: <u>2</u> @ <u>-0.3</u> w/ Therm.ID: <u>200</u> Cooler ID: <u>3</u> @ <u>-0.1</u> w/ Therm.ID: <u>#200</u> Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Note: If non-compliant, use form FS-0029 to document affected samples/analyses. If samples are received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank <u>nor</u> cooler temp can be obtained, note "ambient" or "chilled." If temperature(s) <0°C, were all sample containers ice free?	Yes <u>No</u> N/A <u>Yes</u> No N/A	Cooler 3 had volatiles.
Delivery method (specify all that apply): <u>Client</u> USPS Alert Courier C&D Delivery AK Air Lynden Carlile ERA PenAir FedEx UPS NAC Other: → For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?	Note ABN/tracking # See Attached or <u>N/A</u> Yes No <u>N/A</u>	
→ For samples received with payment, note amount (\$) and cash / check / CC (circle one) or note: → For samples received in FBKS , ANCH staff will verify all criteria are reviewed.		SRF Initiated by: <u>JA</u> <u>N/A</u> <u>N/A</u>
Were samples received within hold time? Note: Refer to form F-083 "Sample Guide" for hold time information. Do samples match COC* (i.e., sample IDs, dates/times collected)? * Note: Exemption permitted if times differ <1hr; in that case, use times on COC. Were analyses requested unambiguous?	<u>Yes</u> No N/A <u>Yes</u> No N/A <u>Yes</u> No N/A	
Were samples in good condition (no leaks/cracks/breakage)? Packing material used (specify all that apply): <u>Bubble Wrap</u> Separate plastic bags Vermiculite Other:	<u>Yes</u> No N/A <u>Yes</u> No N/A	
Were all VOA vials free of headspace (i.e., bubbles ≤6 mm)? Were all soil VOAs field extracted with MeOH+BFB?	<u>Yes</u> No N/A Yes No <u>N/A</u>	
Were proper containers (type/mass/volume/preservative*) used? * Note: Exemption permitted for waters to be analyzed for metals. Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	<u>Yes</u> No N/A <u>Yes</u> No N/A	
For special handling (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	<u>Yes</u> No N/A	
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was pH verified and compliant ? If pH was adjusted, were bottles flagged (i.e., stickers)?	<u>Yes</u> No N/A Yes No <u>N/A</u>	
For RUSH/SHORT Hold Time , were COC/Bottles flagged accordingly? Was Rush/Short HT email sent, if applicable?	Yes No <u>N/A</u>	
For SITE-SPECIFIC QC , e.g. BMS/BMSD/BDUP, were containers / paperwork flagged accordingly?	Yes No <u>N/A</u>	
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	Yes No <u>N/A</u>	SRF Completed by: <u>JM</u> PM = <u>N/A</u>
Was PEER REVIEW of sample numbering/labeling completed?	Yes No <u>N/A</u>	Peer Reviewed by: <u>N/A</u>
Additional notes (if applicable):		

Note to Client: Any "no" circled above indicates non-compliance with standard procedures and may impact data quality.



Sample Containers and Preservatives

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1141606001-A	HCL to pH < 2	OK	1141606009-C	HCL to pH < 2	OK
1141606001-B	HCL to pH < 2	OK	1141606009-D	HCL to pH < 2	OK
1141606001-C	HCL to pH < 2	OK	1141606009-E	HCL to pH < 2	OK
1141606001-D	HCL to pH < 2	OK	1141606010-A	HCL to pH < 2	OK
1141606001-E	HCL to pH < 2	OK	1141606010-B	HCL to pH < 2	OK
1141606002-A	HCL to pH < 2	OK	1141606010-C	HCL to pH < 2	OK
1141606002-B	HCL to pH < 2	OK	1141606010-D	HCL to pH < 2	OK
1141606002-C	HCL to pH < 2	OK	1141606010-E	HCL to pH < 2	OK
1141606002-D	HCL to pH < 2	OK	1141606011-A	HCL to pH < 2	OK
1141606002-E	HCL to pH < 2	OK	1141606011-B	HCL to pH < 2	OK
1141606003-A	HCL to pH < 2	OK	1141606011-C	HCL to pH < 2	OK
1141606003-B	HCL to pH < 2	OK			
1141606003-C	HCL to pH < 2	OK			
1141606003-D	HCL to pH < 2	OK			
1141606003-E	HCL to pH < 2	OK			
1141606004-A	HCL to pH < 2	OK			
1141606004-B	HCL to pH < 2	OK			
1141606004-C	HCL to pH < 2	OK			
1141606004-D	HCL to pH < 2	OK			
1141606004-E	HCL to pH < 2	OK			
1141606005-A	HCL to pH < 2	OK			
1141606005-B	HCL to pH < 2	OK			
1141606005-C	HCL to pH < 2	OK			
1141606005-D	HCL to pH < 2	OK			
1141606005-E	HCL to pH < 2	OK			
1141606006-A	HCL to pH < 2	OK			
1141606006-B	HCL to pH < 2	OK			
1141606006-C	HCL to pH < 2	OK			
1141606006-D	HCL to pH < 2	OK			
1141606006-E	HCL to pH < 2	OK			
1141606007-A	HCL to pH < 2	OK			
1141606007-B	HCL to pH < 2	OK			
1141606007-C	HCL to pH < 2	OK			
1141606007-D	HCL to pH < 2	OK			
1141606007-E	HCL to pH < 2	OK			
1141606008-A	HCL to pH < 2	OK			
1141606008-B	HCL to pH < 2	OK			
1141606008-C	HCL to pH < 2	OK			
1141606008-D	HCL to pH < 2	OK			
1141606008-E	HCL to pH < 2	OK			
1141606009-A	HCL to pH < 2	OK			
1141606009-B	HCL to pH < 2	OK			

Container Id

Preservative

Container Condition

Container Id

Preservative

Container Condition

Container Condition Glossary

OK - The container was received at an acceptable pH for the analysis requested.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

BU - The container was received with headspace greater than 6mm.

APPENDIX C
LABORATORY ANALYTICAL DATA QUALITY CONTROL CHECKLIST

Laboratory Data Review Checklist

Completed by:

Title: Date:

CS Report Name: Report Date:

Consultant Firm:

Laboratory Name: Laboratory Report Number:

ADEC File Number: ADEC Hazard ID:

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?
 Yes No NA (Please explain.) Comments:
- b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?
Yes No NA (Please explain.) Comments:

Samples were not transferred to a network laboratory.

2. Chain of Custody (COC)

- a. COC information completed, signed, and dated (including released/received by)?
 Yes No NA (Please explain.) Comments:
- b. Correct analyses requested?
 Yes No NA (Please explain.) Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?
Yes No NA (Please explain.) Comments:

The temperatures of Coolers 1, 2, and 3, were measured at -0.6, -0.3, and -0.1 degrees Celsius (C), respectively, by the laboratory at the time of receipt. The temperatures in the coolers were below the prescribed optimal temperature range of 4 degrees Celsius +/- 2 degrees. However, because this recorded temperature was below the acceptance range, there is a reduced potential for contaminant loss within the samples due to natural attenuation. For this reason, it is our opinion that this QC failure does not affect the acceptability of the data for their intended use.

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes No NA (Please explain.) Comments:

c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

Yes No NA (Please explain.) Comments:

No irregularities or abnormalities with respect to sample containers were reported.

d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

Yes No NA (Please explain.) Comments:

No irregularities were reported or observed.

e. Data quality or usability affected? (Please explain.)

Comments:

N/A

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain.) Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes No NA (Please explain.) Comments:

c. What is the effect on data quality/usability according to the case narrative?

Yes No NA (Please explain.) Comments:

See 4b, above.

Comments:

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes No NA (Please explain.) Comments:

b. All applicable holding times met?

Yes No NA (Please explain.) Comments:

c. All soils reported on a dry weight basis?
Yes No **NA** (Please explain.)

Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

Yes No NA (Please explain.)

Comments:

e. Data quality or usability affected?

Yes No **NA** (Please explain.)

Comments:

6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes No NA (Please explain.)

Comments:

ii. All method blank results less than PQL?

Yes No NA (Please explain.)

Comments:

iii. If above PQL, what samples are affected?

Comments:

N/A

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

Yes No **NA** (Please explain.)

Comments:

N/A

v. Data quality or usability affected? (Please explain.)

Comments:

N/A

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes No NA (Please explain.) Comments:

ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes No NA (Please explain.) Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain.) Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes No NA (Please explain.) Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Yes No NA (Please explain.) Comments:

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain.) Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

Yes No NA (Please explain.) Comments:

c. Surrogates – Organics Only

i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Yes No NA (Please explain.) Comments:

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes No NA (Please explain.) Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes No NA (Please explain.)

Comments:

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes No NA (Please explain.)

Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes No NA (Please explain.)

Comments:

iii. All results less than PQL?

Yes No NA (Please explain.)

Comments:

iv. If above PQL, what samples are affected?

Comments:

v. Data quality or usability affected? (Please explain.)

Comments:

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes No NA (Please explain.) Comments:

ii. Submitted blind to lab?

Yes No NA (Please explain.) Comments:

iii. Precision – All relative percent differences (RPD) less than specified DQOs?
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration
 R_2 = Field Duplicate Concentration

Yes No NA (Please explain.) Comments:

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

No

f. Decontamination or Equipment Blank (If not used explain why).

Yes No NA (Please explain.) Comments:

Not applicable. A decontamination or equipment blank was not collected; not part of our approved scope of work.

i. All results less than PQL?

Yes No NA (Please explain.) Comments:

Not applicable. A decontamination or equipment blank was not collected; not part of our approved scope of work.

ii. If above PQL, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected? (Please explain.)

N/A

Comments:

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

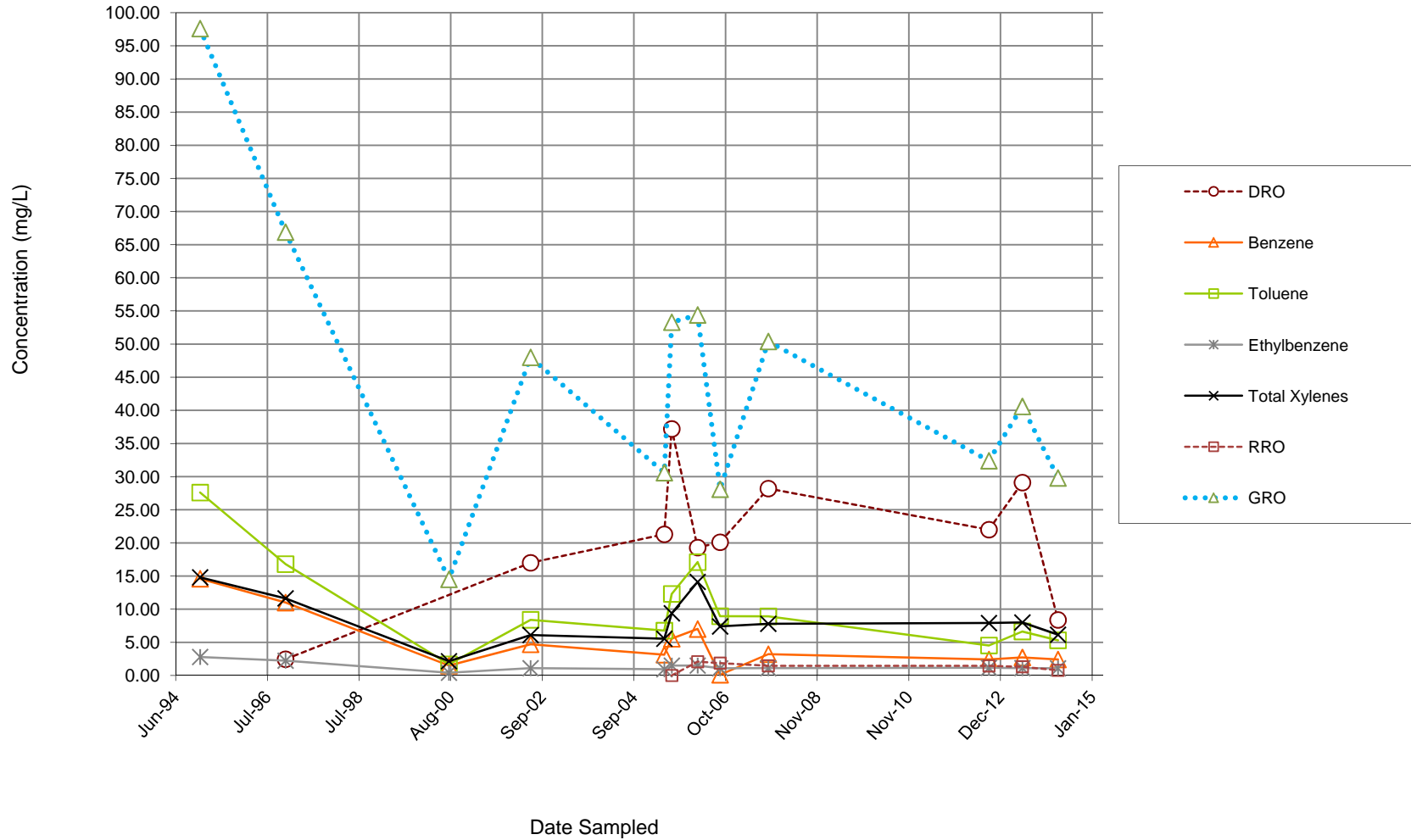
Yes No NA (Please explain.)

Comments:

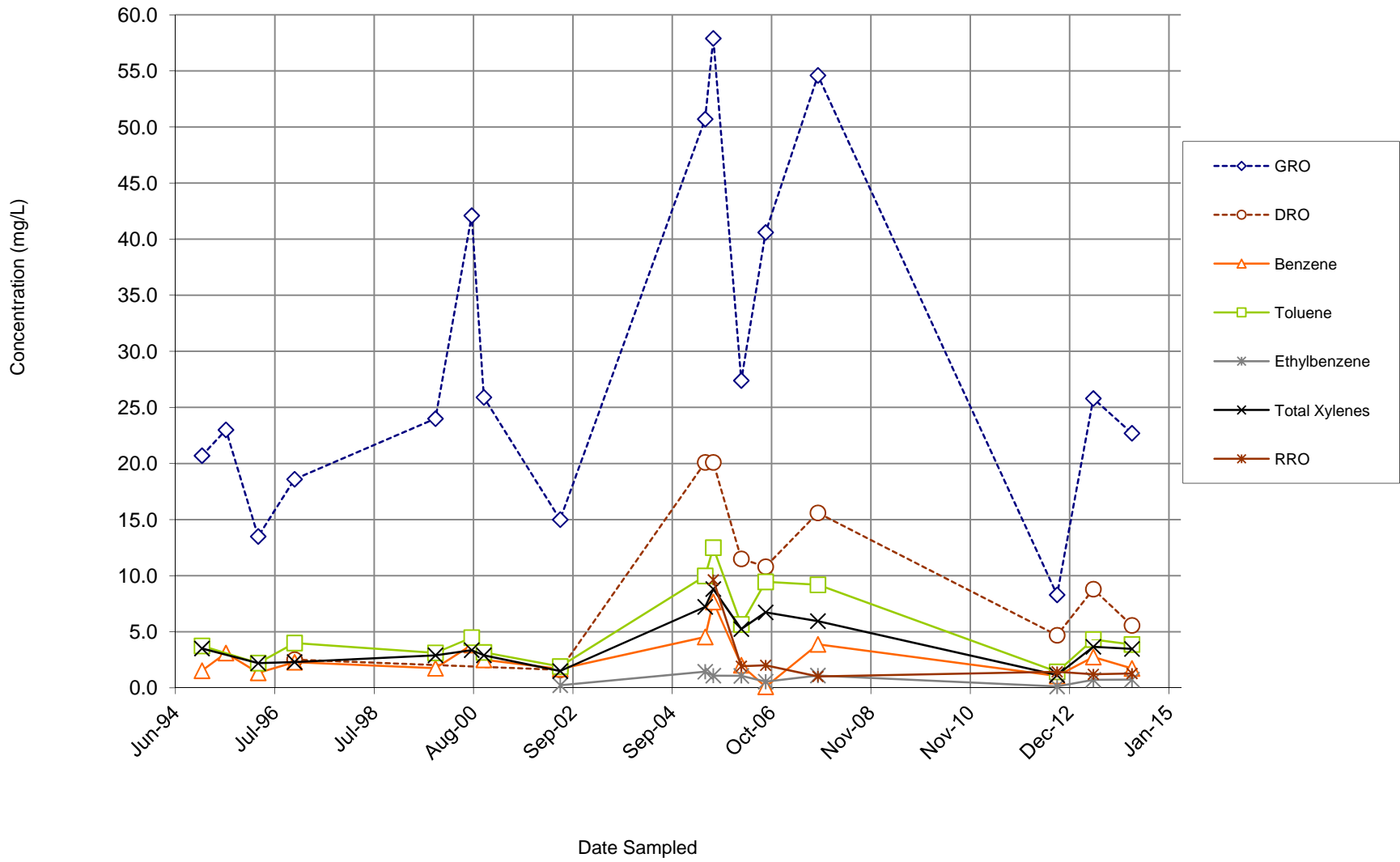
Not applicable for this project.

APPENDIX D
GRAPHS OF HISTORICAL WATER QUALITY DATA

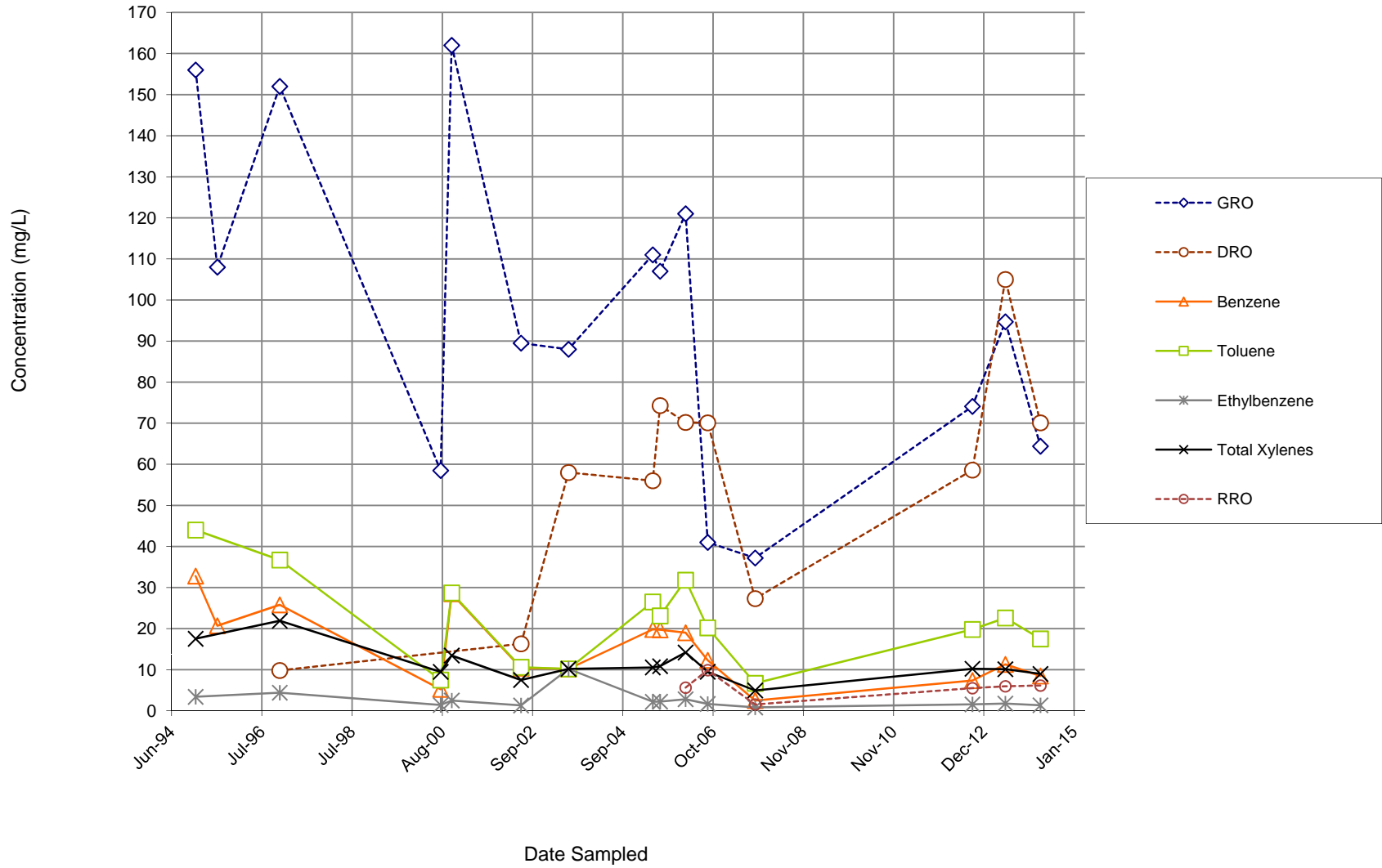
Historical Contaminant Concentration Trends MW-01



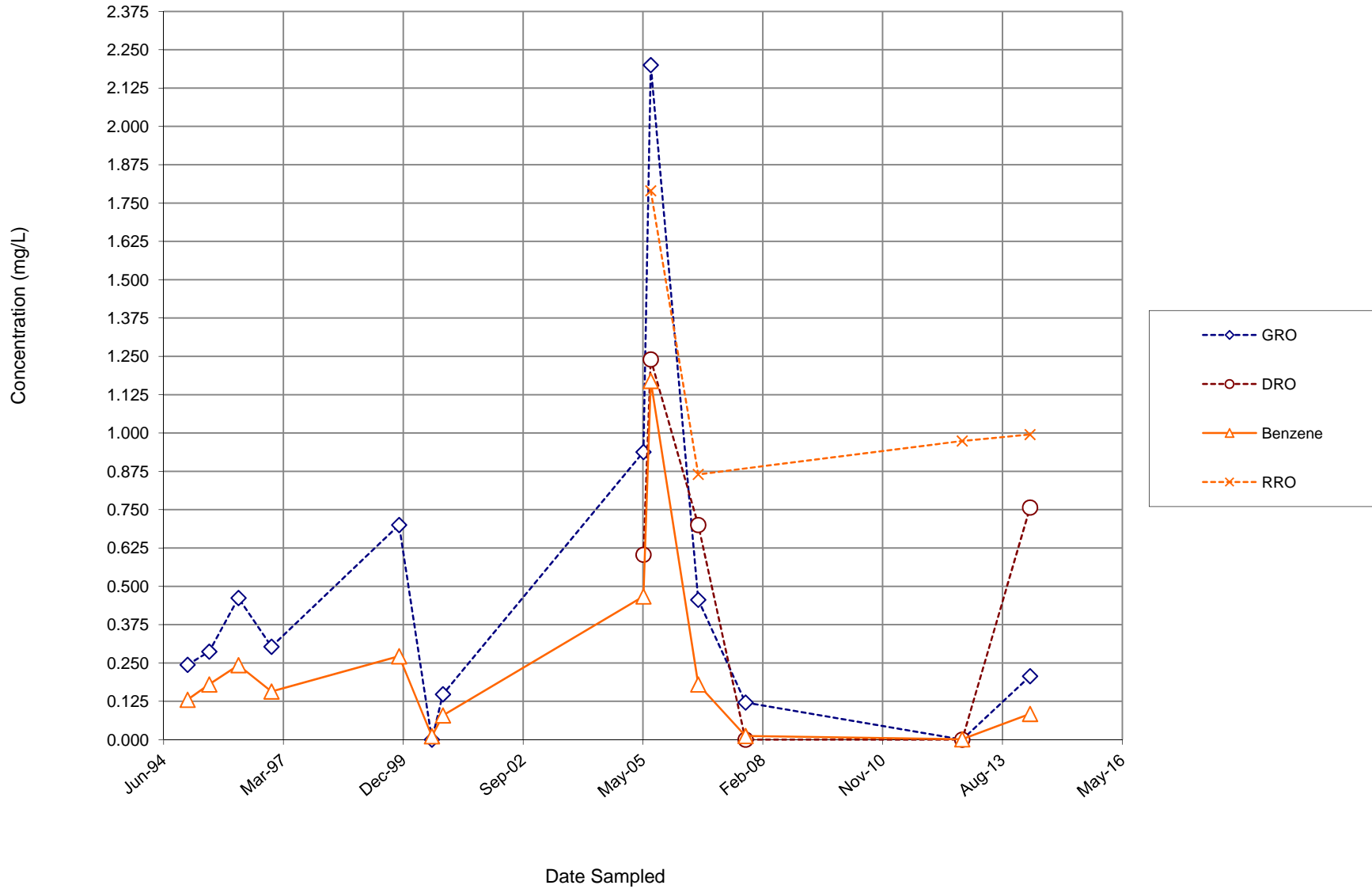
Historical Contaminant Concentration Trends B6/VE



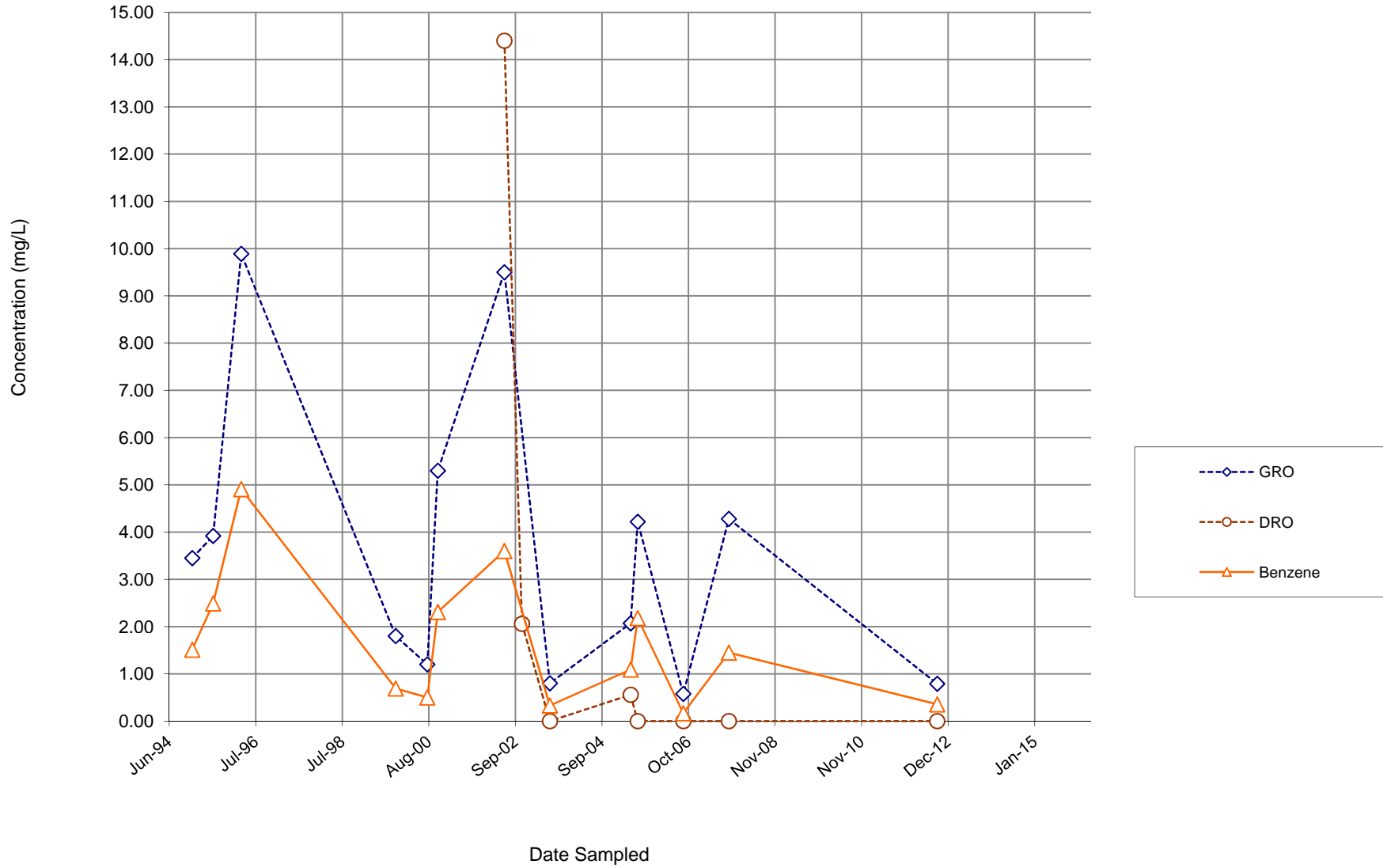
Historical Contaminant Concentration Trends MW-02



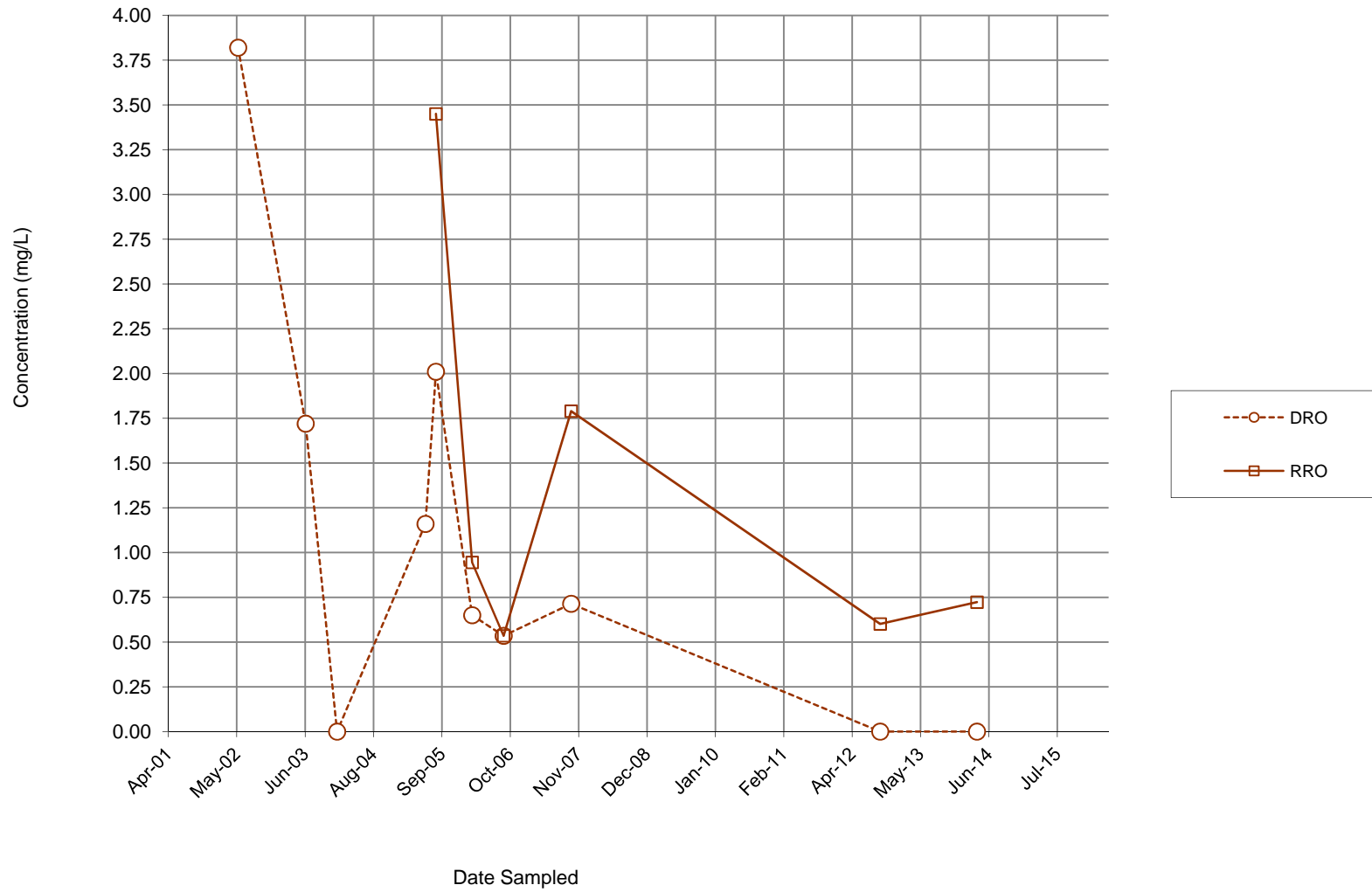
Historical Contaminant Concentration Trends MW-05



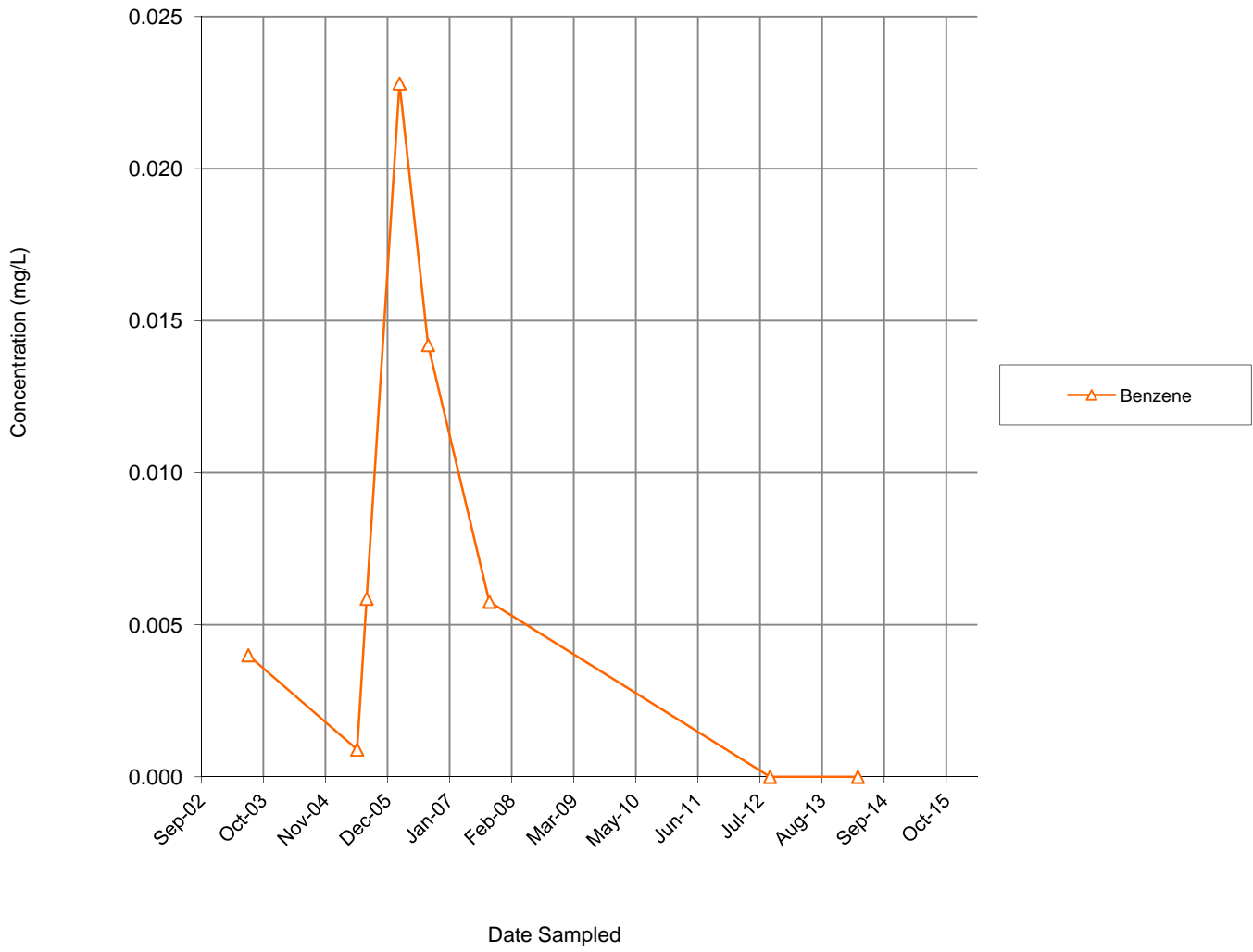
Historical Contaminant Concentration Trends MW-08



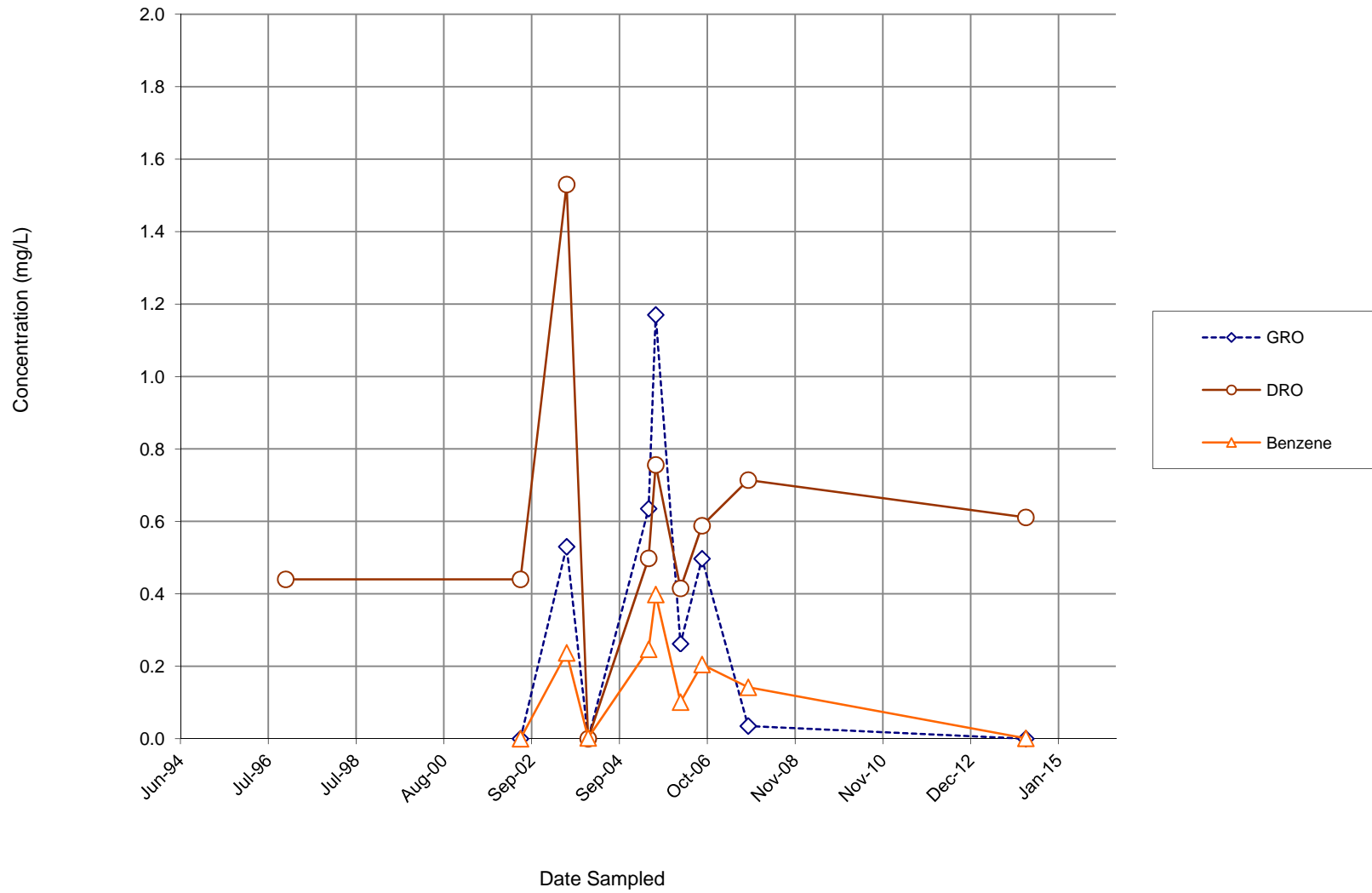
Historical Contaminant Concentration Trends MW-11



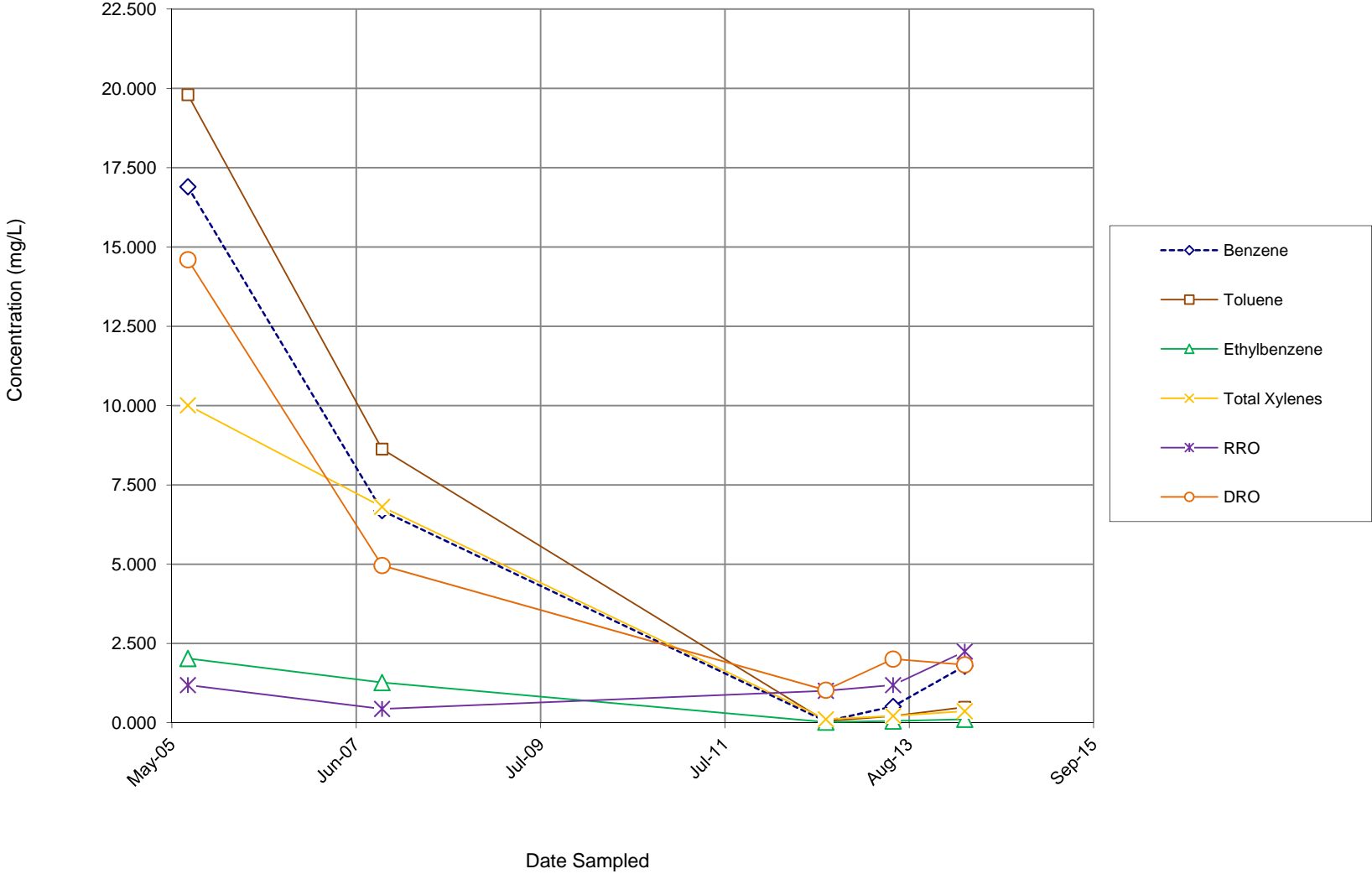
Historical Contaminant Concentration Trends MW-11



Historical Contaminant Concentration Trends MW-12



Historical Contaminant Concentration Trends MW-15



Historical Contaminant Concentration Trends MW-15

