BGES, INC.

ENVIRONMENTAL CONSULTANTS

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

GROUNDWATER MONITORING REPORT (JUNE/JULY 2015)

NOVEMBER 2015

Submitted to:

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ACRONYMS

AAC	-	Alaska Administrative Code
ADEC	-	Alaska Department of Environmental Conservation
AK	-	Alaska Method
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
GeoTek	-	GeoTek Alaska, Inc.
GRO	-	Gasoline Range Organics
HCL	-	Hydrochloric Acid
LOQ	-	Limit of Quantitation
MRL	-	Method Reporting Limit
MS	-	Matrix Spike
MSD	-	Matrix Spike Duplicate
PAHs	-	Polynuclear Aromatic Hydrocarbons
QC	-	Quality Control
QEP	-	Qualified Environmental Professional
RPD	-	Relative Percent Difference
RRO	-	Residual Range Organics
SGS	-	SGS North America, Inc.
UST	-	Underground Storage Tank
VOAs	-	Volatile Organic Analyses
VOCs	-	Volatile Organic Compounds

1.0 INTRODUCTION

BGES, Inc. (BGES) was retained by Andy Robblee of Six Robblee's, Inc. (Six Robblee's) to conduct groundwater sampling at the Six Robblee's property located at 4748 Old Seward Highway, Anchorage, Alaska; hereafter referred to as the subject property (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 ninth round of groundwater sampling performed by BGES) was performed on June 30, and July 1 and 2, 2015 in general accordance with the work plan prepared by BGES (dated November 25, 2014). The Alaska Department of Environmental Conservation (ADEC) changed the site status from "cleanup-complete with institutional controls" to "Active" in correspondence dated August 14, 2013. The ADEC Hazard Identification Number is 23658 and the ADEC File Number is 2100.26.252 for the subject property.

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 April of 2014, were presented in the October 2014 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 2013 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.

Groundwater sampling was performed by BGES in April of 2014. Wells that were sampled included MW-1, MW-2, MW-5, MW-11, MW-12, MW-13, MW-14, MW-15, and B6/VE, and were analyzed for GRO, BTEX, DRO, and RRO. Many of the monitoring wells were in a damaged condition at the time of sampling, and one of the wells (MW-9) was submerged in water and was therefore not sampled during this event. In addition, a water sample was collected from the facility well and labeled “Facility Well”, and was analyzed for VOCs. The results from the April 2014 sampling event indicated that 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. The samples collected from Monitoring Wells MW-2 and B6/VE exhibited concentrations of GRO, benzene, toluene, ethylbenzene, DRO, and RRO that exceeded their respective ADEC cleanup criteria. 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 its ADEC cleanup criterion. The sample from Monitoring Well MW-12 exhibited a concentration of RRO that

exceeded its ADEC cleanup criterion. The sample from Monitoring Well MW-15 exhibited concentrations of GRO, benzene, DRO, and RRO that exceeded their respective ADEC cleanup criteria.

On November 6, 2014, BGES met at the subject property with GeoTek Alaska, Inc. (GeoTek) of Anchorage, Alaska to repair the damaged monitoring wells. The flush-mounted covers were replaced for Monitoring Well MW-8, MW-9, MW-11, and B6/VE. The well caps were replaced on Monitoring Wells MW-2, MW-3, MW-5, B6/VE, MW-8, MW-10, MW-12, MW-13, MW-14, and MW-15.

In a letter dated December 16, 2014; Joshua Barsis, ADEC Project Manager, agreed to reduce groundwater monitoring activities at the subject property from quarterly to annually.

Annual groundwater monitoring activities that were performed in June and July of 2015 are the subject of this report, and details and the results of these activities are presented below.

4.0 JULY 2015 SAMPLING

BGES collected groundwater samples from Monitoring Wells MW-5, MW-8, MW-9, MW-12, MW-14, and a facility well on June 30 and July 1 and 2, 2015 (Figure 2) in accordance with our work plan (published November 25, 2014), which was approved by the ADEC on December 18, 2014.

In e-mail correspondence with Joshua Barsis dated March 24, 2015; Mr. Barsis that Teflon tubing and bladders would not be required for this round of groundwater monitoring at the subject property as he previously requested in his approval letter dated December 18, 2014.

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.

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 of 150 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 MW6R) and was submitted "blindly" to the laboratory for analyses.

The sample containers were labeled, placed in a chilled cooler, 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.

BGES also re-surveyed the top of casings' and ground elevations for each of the existing monitoring wells after repair of the monitoring wells. The wells were surveyed to the nearest vertical 0.01 foot, utilizing a fixed, permanent or semi-permanent reference point. The reference point for the survey was the corner of the building where the service shop building connects to the office building.

Utilizing the surveyed monitoring well elevations and the measured depths to water, the groundwater elevations in each monitoring wells were calculated. Then, the calculated groundwater elevations for the subject property were utilized to create a groundwater elevation contour map which suggests that general groundwater flow direction at the site was to the southeast (Figure 3). The calculated hydraulic gradient was 0.005 foot per linear foot. The depth to water, the total depth of the wells, the water quality parameters, and the calculated water elevations are presented in Table 1.

Investigation-derived waste generated (purge water) was containerized in four 5-gallon buckets. The investigation-derived wastes are currently stored outside in the southwest corner of the facility yard. The 5-gallon buckets 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 DECOMISSIONING SUB-SLAB SOIL GAS IMPLANT

BGES personnel decommissioned the sub-slab soil gas sampling point on July 21, 2015. The sampling point was previously installed through the concrete slab in 2013 and was positioned in the southeastern portion of the building. Efforts were made to break the stainless steel sampling point free from the concrete. After several attempts, the implant would not break free. Therefore, the threaded stainless steel cap was removed from the implant, and the 1.5-inch diameter hole was then filled with concrete to match the existing surface.

6.0 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 a copy of the laboratory data package is 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 as revised on June 17, 2015.

The water samples for MW-5, MW-8, MW-9, MW-12, MW-14, and MW-6R (duplicate of MW-14) 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 Environmental Protection Agency (EPA) Method 8021B.

The water sample for the facility well was analyzed for VOCs by EPA method 524.2.

The water samples collected from the subject property were numbered, for example, MW5-0630, where the prefix MW5 indicates the monitoring well from which the water sample was collected; and 0630 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-5 with the date omitted. MW6R-0630 is a duplicate sample collected from MW-14 and is labeled in the same format as described above. WSW1-0701 is the sample collected from the facility well and is labeled in the same format as described above.

Seven water samples, including a duplicate sample, were collected from five existing monitoring wells and the facility well at the subject property; Samples MW-5, MW-8, MW-9, MW-12, MW-14, MW6R (duplicate of MW-14), and WSW1-0630.

The samples collected from Monitoring Well MW-14 and MW6R (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-5 and MW-8 exhibited concentrations 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 remaining analytes within the water samples were either detected at concentrations that were below the applicable ADEC cleanup criteria, or were non-detectable above the laboratory limits of quantitation (LOQs). 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.

7.0 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. The checklist provides an overview of the quality of the laboratory data. The following is a discussion of our evaluation of sample conditions and laboratory procedures for the water samples collected during the June and July 2015 sampling activities.

The sample containers were labeled, placed in an ice-filled cooler, and hand-delivered by BGES personnel to SGS under chain of custody protocol. The samples contained the proper preservatives for the requested analyses.

SGS Work Order 1153342

One of the three sample containers collected for volatile organic analyses (VOAs) for Field Sample MW5-0630 contained an air bubble greater than 6 millimeters (mm) in diameter (headspace). However, since there were two other jars collected as part of this sample and were utilized for analysis of this sample, it is our opinion that this quality control (QC) failure does not affect the acceptability of the data for its intended use. No other unusual sample conditions were noted by the laboratory at the time of their receipt.

The temperature of the sample cooler that contained the water samples was measured at the laboratory at the time of receipt to be 0.2 degrees Celsius (C). The temperature in the cooler was below the prescribed, optimal temperature range of 4 degrees Celsius +/- 2 degrees. However, because the recorded temperature was 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.

The trip blank accompanied the volatile samples (GRO and BTEX) throughout the entirety of the sampling process and transportation to the laboratory. The samples contained the proper preservatives for the requested analyses. The case narrative for Work Order Number 1153342 (samples collected during June and July 2015 sampling activities) noted that there were a couple of QC failures identified by SGS.

The percent recovery of 4-bromofluorobenzene, associated with the analysis of GRO within the Matrix Spike (MS) and MS Duplicate (MSD) samples exceeded the laboratory acceptance limit. This indicates a potential for the reported concentrations of GRO to be biased high in Field Samples MW5-0630, MW8-0630, MW9-0702, and MW12-0630. Because the MS and MSD samples were derived from a field sample collected as part of another project, it is our opinion that there is a potential for the data QC failure to be caused by matrix effects associated with soils different than those at the subject property. The case narrative indicated that this QC failure was caused by matrix interference. For these reasons, it is our opinion that this QC failure does not affect the acceptability of the data for Field Samples MW5-0630, MW8-0630, MW9-0702, and MW12-0630 for their intended use.

Sample MW-6R 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 1 percent and 28 percent, which are 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, it is our opinion that good field sampling precision was achieved, and the data are acceptable for their intended use.

8.0 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.

9.0 CONCLUSIONS

A groundwater monitoring event at this site was conducted on June 30 and July 1 and 2, 2015. Groundwater samples were collected from Monitoring Wells MW-5, MW-8, MW-9, MW-12, and MW-14, and were analyzed for GRO, DRO, RRO, and BTEX. An additional sample was collected from a facility well and was analyzed for VOCs. Each of the wells sampled, with the exception of Monitoring Well MW-9 and the facility well exhibited concentrations of one or more analytes that exceeded the applicable ADEC cleanup criteria. The samples collected from Monitoring MW-14 and MW-6R (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-5 and MW-8 exhibited concentrations of benzene that exceeded the ADEC cleanup criterion for this analytes. The sample from Monitoring Well MW-12 exhibited a concentration of RRO that

exceeded the ADEC cleanup criterion for this analyte. We recommend that groundwater monitoring activities are performed every two to three years.

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. 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. It is recommended that all purge water be disposed of at an appropriate disposal facility such as NRC Alaska.

10.0 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.

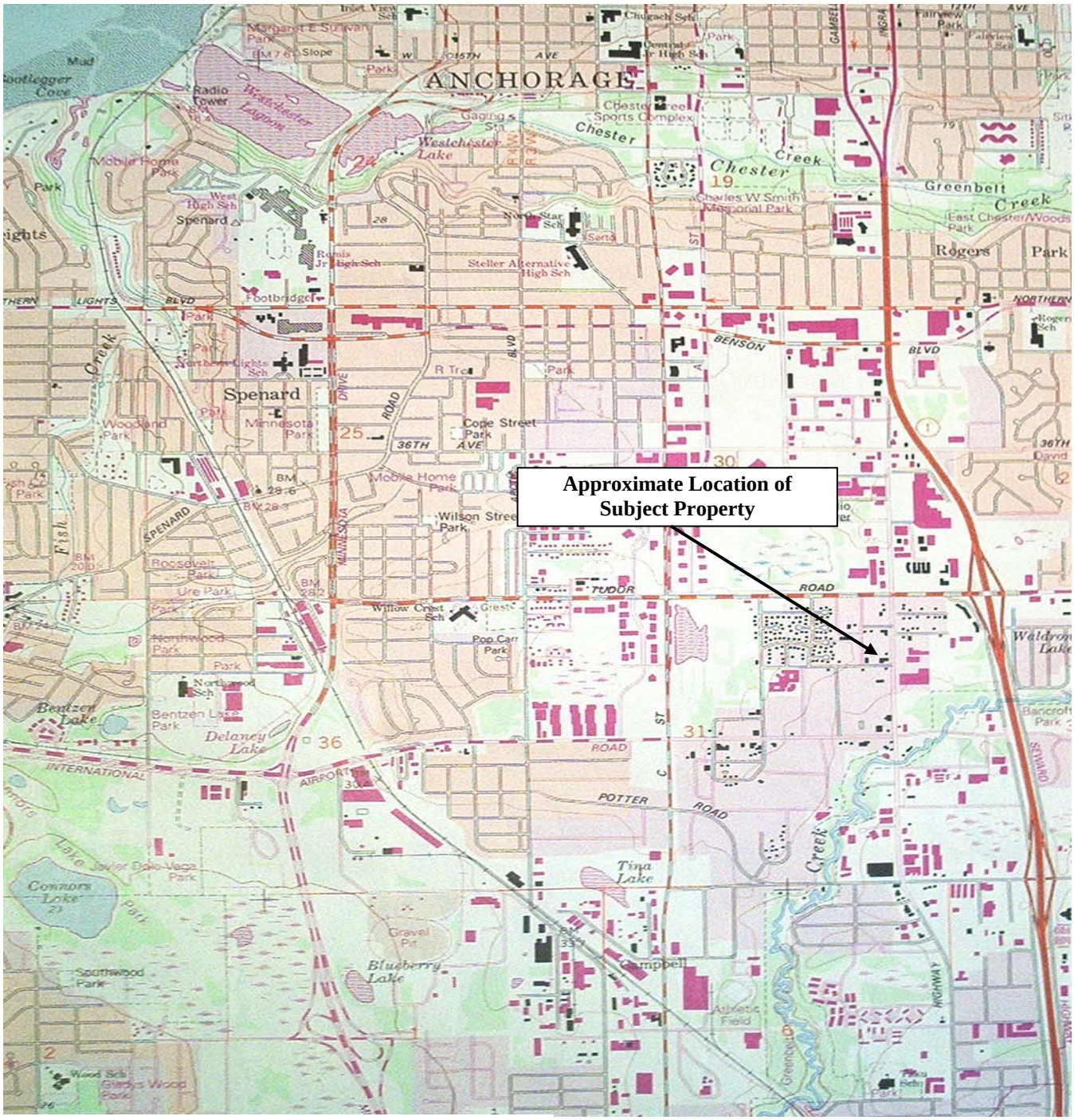
Groundwater sampling for this monitoring event was conducted, and this report was prepared by William Schmaltz; Environmental Scientist with BGES and a Qualified Environmental Professional (QEP) as defined by the ADEC. Mr. Schmaltz has conducted groundwater monitoring, site characterization, and remediation activities at numerous sites in the Anchorage area and throughout Alaska. This report was reviewed by Jayne Martin, Senior Environmental Scientist of BGES, who is a QEP as defined by the ADEC, and has more than 25 years of environmental consulting experience, and has conducted and managed hundreds of site characterization and remediation efforts throughout Alaska and the lower 48 states.

Prepared By:

William Schmaltz
Environmental Scientist

Reviewed By:

Jayne Martin
Senior Environmental Scientist



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

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Approximate Scale in Miles

4748 Old Seward Highway
Anchorage, Alaska
Property Vicinity Map

BGES, INC.	November 2015	Figure 1

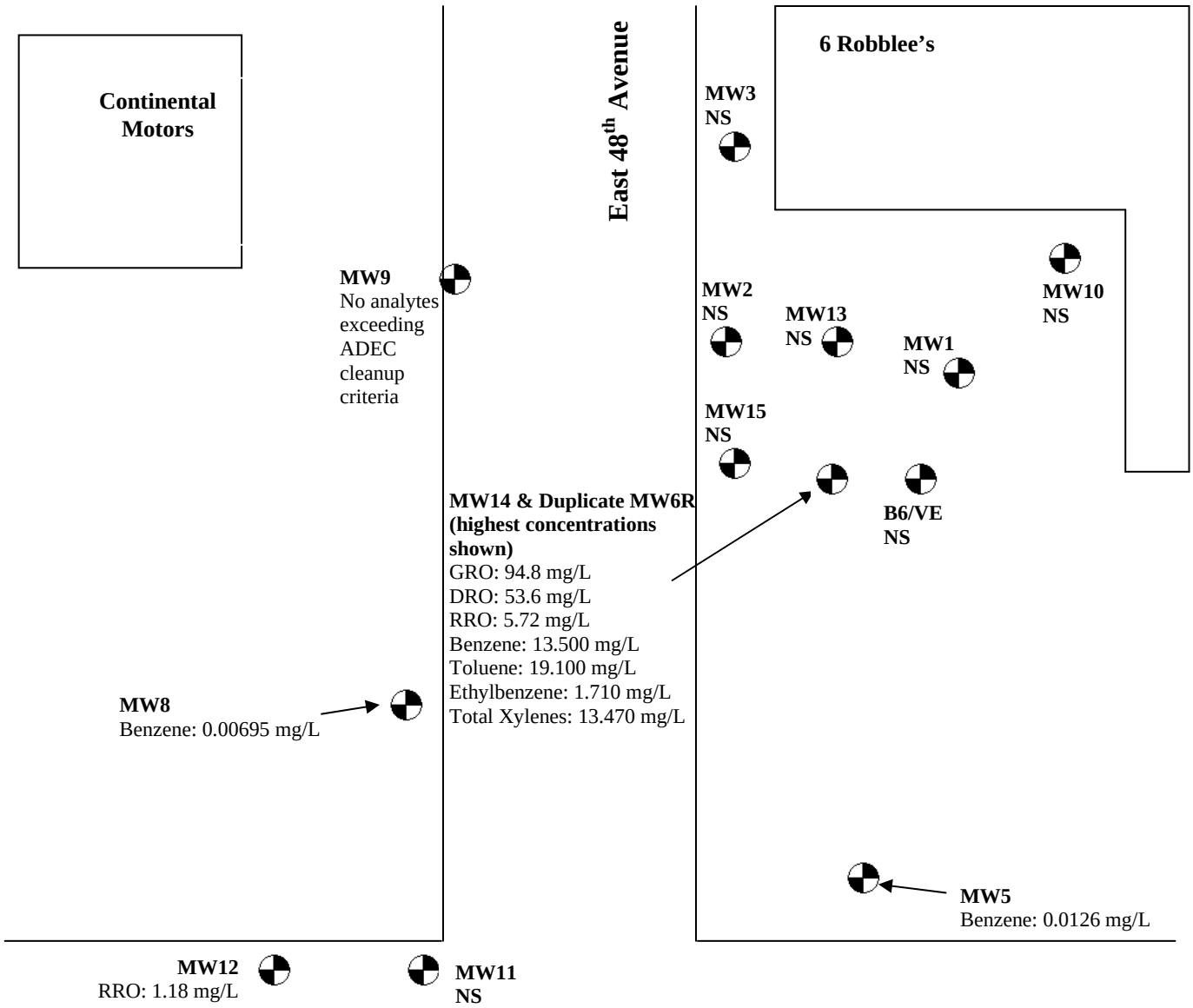


Figure adapted from Chemtrack DRO history diagram.

N

0 25 50

Approximate Scale in Feet

LEGEND

= Monitoring Well

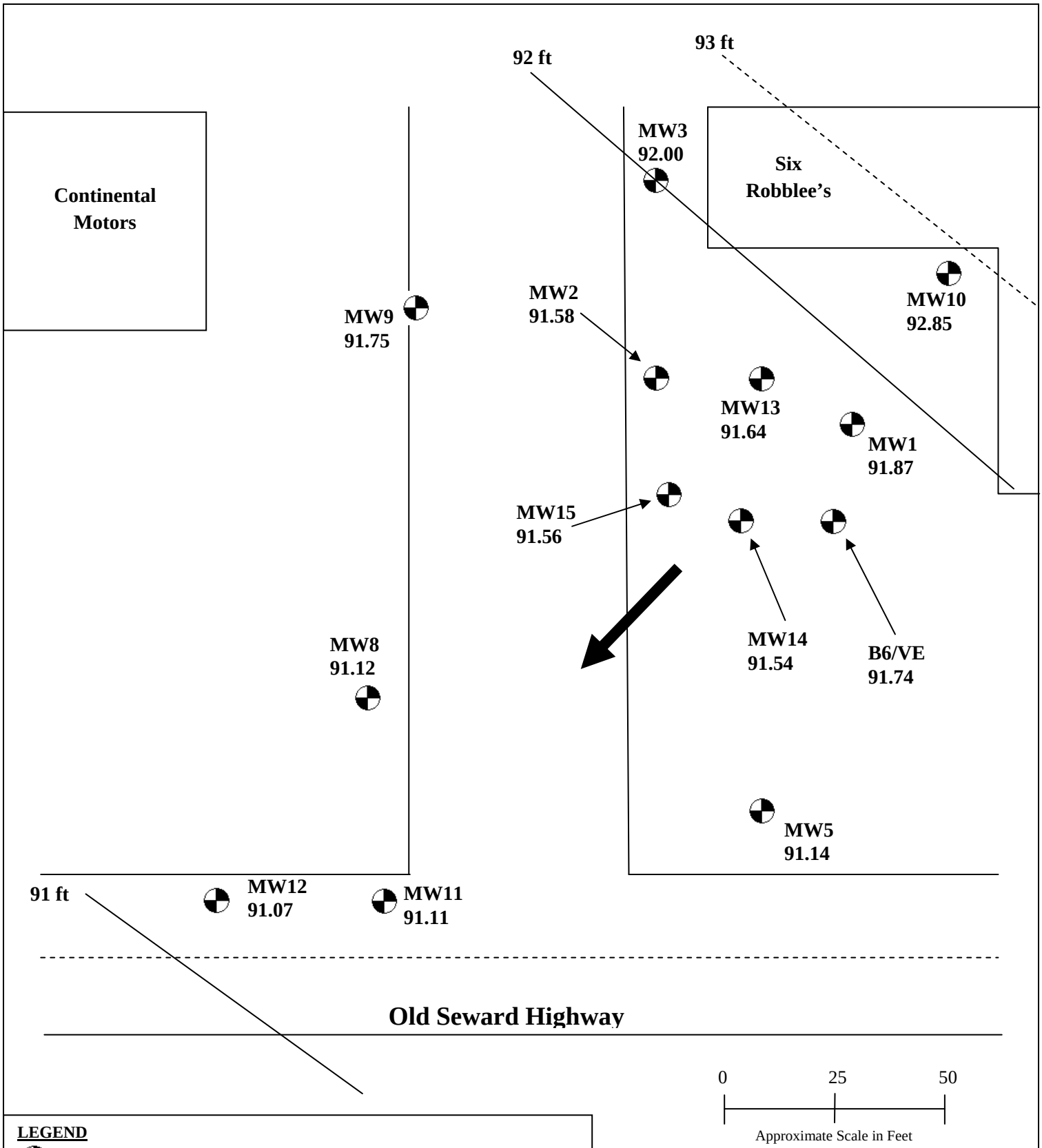
mg/L = milligrams/liter

NS = Not Sampled

Note: Only parameter concentrations exceeding ADEC cleanup criteria are presented.

Former Custom Truck (Currently Six Robblee's)
4748 Old Seward Highway
Anchorage, Alaska
Monitoring Well Locations and Sampling Results (July 2015)

BGES, INC.	November 2015	Figure 2



LEGEND

= Monitoring Well

= Groundwater Elevation (ft) Contour (dashed where inferred)

= Groundwater Flow Direction

Notes:

- Water elevations are noted in bold next to each monitoring well number
- The hydraulic gradient is approximately 0.005 foot per linear foot

Six Robblee's
4748 Old Seward Highway
Anchorage, Alaska
Groundwater Elevation Contour Map

BGES, INC.	November 2015	Figure 3

TABLE 1
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA
MONITORING WELL SAMPLING DATA

BGES, INC.

Well Number	MW1	MW2	MW3	MW5	MW8	MW9	MW10	MW11	MW12	MW13	MW14	MW15	B6/VE
Date Sampled	-	-	-	6/30/2015	6/30/2015	7/2/2015	-	-	6/30/2015	-	6/30/2015	-	-
Date of Depth and Elevation Measurement	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015	6/30/2015
Time of Depth to Water Measurement	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00
Time Sample Collected	-	-	-	16:53	12:47	08:55	-	-	11:25	-	15:37	-	-
Top of Casing Elevation (feet)	100.59	97.79	97.65	99.13	97.22	97.50	101.32	96.62	96.03	99.21	99.33	97.78	99.75
Depth to Water (feet below top of casing)	8.72	6.21	5.65	7.99	6.10	5.75	8.47	5.51	4.96	7.57	7.79	6.22	8.01
Water Elevation (feet)	91.87	91.58	92.00	91.14	91.12	91.75	92.85	91.11	91.07	91.64	91.54	91.56	91.74
Total Depth of Well (feet below top of casing)	21.93	13.49	9.21	12.98	13.74	13.24	14.92	13.95	8.20	11.63	12.83	10.40	14.04
Well Casing Diameter (Inches)	2	2	2	2	2	2	2	2	2	2	2	2	4
Standing Water Well Volume (gallons)	2.16	1.19	0.58	0.81	1.25	1.22	1.05	1.38	0.53	0.66	0.82	0.68	3.94
Purge Volume-Actual (gallons)	-	-	-	2.5	3.75	4	-	-	2.5	-	2.5	-	-
Temperature (degrees Celsius)	-	-	-	10.8/11.3	11.6/11.1/11.1	10.9/9.9/10.8	-	-	13.0/12.3	-	12/12.3	-	-
pH (standard units)	-	-	-	6.75/6.37	6.52/6.84/7.05	6.70/7.25/7.11	-	-	6.5/7.38	-	6.75/7.01	-	-
Conductivity (microsiemans per centimeter)	-	-	-	1,079/1,110	602/590/576	789/793/924	-	-	574/570	-	938/1,023	-	-
Oxidation Reduction Potential (millivolts)	-	-	-	-19.3/-51.2	30.1/-25.0/-53.2	75.6/64.8/53.5	-	-	83.7/76.7	-	6.4/-35.6	-	-
Notes: Values separated by / indicate readings for successive well volumes Sampler: W. Schmaltz Field parameters measured with a YSI Professional Plus Multi-Meter Weather conditions on June 30 and July 1 - 2, 2015 were partially cloudy to clear skies with temperatures ranging from approximately 50 to 60 degrees fahrenheit.											A duplicate sample was collected from MW-14 and was labeled MW6R-0630.		

TABLE 2
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA
ANALYTICAL RESULTS - GROUNDWATER (JULY 2015)

Water Sample No.	Parameter	Results (mg/L)	LOQ (mg/L)	ADEC Cleanup Criterion (mg/L)[1]	Analytical Method
MW5-0630	GRO	ND	0.100	2.2	AK 101
	DRO	ND	0.600	1.5	AK 102
	RRO	ND	0.500	1.1	AK 103
	Benzene	**0.0126**	0.000500	0.005	SW8021B
	Toluene	0.00207	0.00100	1.0	SW8021B
	Ethylbenzene	ND	0.00100	0.7	SW8021B
	Total Xylenes	0.00416	0.00300	10	SW8021B
MW8-0630	GRO	ND	0.100	2.2	AK 101
	DRO	ND	0.600	1.5	AK 102
	RRO	ND	0.500	1.1	AK 103
	Benzene	**0.00695**	0.000500	0.005	SW8021B
	Toluene	ND	0.00100	1.0	SW8021B
	Ethylbenzene	ND	0.00100	0.7	SW8021B
	Total Xylenes	ND	0.00300	10	SW8021B
MW9-0702	GRO	ND	0.100	2.2	AK 101
	DRO	ND	0.600	1.5	AK 102
	RRO	0.651	0.500	1.1	AK 103
	Benzene	ND	0.000500	0.005	SW8021B
	Toluene	ND	0.00100	1.0	SW8021B
	Ethylbenzene	ND	0.00100	0.7	SW8021B
	Total Xylenes	ND	0.00300	10	SW8021B
MW12-0630	GRO	ND	0.100	2.2	AK 101
	DRO	ND	0.600	1.5	AK 102
	RRO	**1.18**	0.500	1.1	AK 103
	Benzene	0.000580	0.000500	0.005	SW8021B
	Toluene	ND	0.00100	1.0	SW8021B
	Ethylbenzene	ND	0.00100	0.7	SW8021B
	Total Xylenes	ND	0.00300	10	SW8021B
MW14-0630	GRO	**92.7**	10.0	2.2	AK 101
	DRO	**53.6**	2.40	1.5	AK 102
	RRO	**5.72**	0.500	1.1	AK 103
	Benzene	**13.200**	0.0500	0.005	SW8021B
	Toluene	**18.700**	0.100	1.0	SW8021B
	Ethylbenzene	**1.650**	0.100	0.7	SW8021B
	Total Xylenes	**13.190**	0.300	10	SW8021B
MW6R-0630 **Duplicate of MW14-0630**					
RPD = 1 %	GRO	**94.8**	10.0	2.2	AK 101
RPD = 23 %	DRO	**38.6**	0.600	1.5	AK 102
RPD = 28 %	RRO	**3.85**	0.500	1.1	AK 103
RPD = 1 %	Benzene	**13.500**	0.0500	0.005	SW8021B
RPD = 1 %	Toluene	**19.100**	0.100	1.0	SW8021B
RPD = 2 %	Ethylbenzene	**1.710**	0.100	0.7	SW8021B
RPD = 1 %	Total Xylenes	**13.470**	0.300	10	SW8021B

TABLE 2
4748 OLD SEWARD HIGHWAY
ANCHORAGE, ALASKA
ANALYTICAL RESULTS - GROUNDWATER (JULY 2015)

Water Sample No.	Parameter	Results (mg/L)	LOQ (mg/L)	ADEC Cleanup Criterion (mg/L)[1]	Analytical Method
WSW1-0701	Benzene	ND	0.000500	0.005	EPA 524.2
	Toluene	ND	0.00500	1.0	EPA 524.2
	Ethylbenzene	ND	0.00500	0.7	EPA 524.2
	Total Xylenes	ND	0.00500	10	EPA 524.2
	All Other VOCs	ND	varies	varies	EPA 524.2

[1] Water cleanup criteria obtained from ADEC 18 AAC 75.341, Table C, Groundwater Cleanup Levels (June 17, 2015)

ADEC = Alaska Department of Environmental Conservation; LOQ = Limit of Quantitation

mg/L = milligrams per Liter; RPD = relative percent difference; ND = Analyte not detected

BOLD = concentration exceeds applicable ADEC cleanup criterion.

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

BGES, INC.

Well No.	Date Collected: / Parameter	Jan-95 (mg/L)	Jul-95 (mg/L)	Mar-96 (mg/L)	Dec-96 (mg/L)	Nov-99 (mg/L)	Aug-00 (mg/L)	Nov-00 (mg/L)	Jun-02 (mg/L)	Nov-02 (mg/L)	Jul-03 (mg/L)	Jan-04 (mg/L)	Jun-05 (mg/L)	Aug-05 (mg/L)	Mar-06 (mg/L)	Sept-06 (mg/L)	Oct-07 (mg/L)	Sep-12 (mg/L)	Jun-13 (mg/L)	Apr-14 (mg/L)	Jul-15 (mg/L)	Analytical Method	ADEC Method Two Groundwater Cleanup Level (mg/L)[1]
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**	NS	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**	NS	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**	NS	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**	NS	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**	NS	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**	NS	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	NS	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**	NS	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**	NS	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**	NS	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**	NS	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**	NS	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**	NS	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	NS	SW8021b	10.0
	Naphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.042	NS	NS	NS	NS	8270C	0.7
	2-Methylnaphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.013	NS	NS	NS	NS	8270C	0.78
	1-Methylnaphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0062	NS	NS	NS	NS	8270C	1.5
	Acenaphthalene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000032	NS	NS	NS	NS	8270C	2.2
	Acenaphthene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000026	NS	NS	NS	NS	8270C	2.2
	Fluorene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000069	NS	NS	NS	NS	8270C	1.46
	Phenanthrene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000051	NS	NS	NS	NS	8270C	11.0
	Anthracene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.0000097	NS	NS	NS	NS	8270C	11.0
	Fluoranthene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000016	NS	NS	NS	NS	8270C	1.46
	Pyrene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000020	NS	NS	NS	NS	8270C	1.1
	Benzo[a]anthracene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0.000019	NS	NS	NS	NS	8270C	--
	All other analytes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	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	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	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	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	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	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	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	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	ND	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	ND	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	ND	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**	**0.0126**	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	0.00207	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	ND	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	0.00416	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 = miligrams per Liter VOCs = Volatile Organic Compunds
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 (mg/L)	Jul-95 (mg/L)	Mar-96 (mg/L)	Dec-96 (mg/L)	Nov-99 (mg/L)	Aug-00 (mg/L)	Nov-00 (mg/L)	Jun-02 (mg/L)	Nov-02 (mg/L)	Jul-03 (mg/L)	Jan-04 (mg/L)	Jun-05 (mg/L)	Aug-05 (mg/L)	Mar-06 (mg/L)	Sept-06 (mg/L)	Oct-07 (mg/L)	Sep-12 (mg/L)	Jun-13 (mg/L)	Apr-14 (mg/L)	Jul-15 (mg/L)	Analytical Method	ADEC Method Two Groundwater Cleanup Level (mg/L)[1]
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**	NS	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**	NS	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**	NS	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**	NS	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**	NS	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**	NS	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	NS	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	ND	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	ND	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	ND	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	**0.00695**	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	ND	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	ND	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	ND	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	ND	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	ND	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	0.651	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	ND	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	ND	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	ND	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	ND	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	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	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	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	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	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	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	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	NS	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	NS	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	NS	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	NS	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	NS	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	NS	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	NS	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	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	ND	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**	**1.18**	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	0.000580	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	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	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	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 = miligrams per Liter VOCs = Volatile Organic Compunds
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 (mg/L)	Jul-95 (mg/L)	Mar-96 (mg/L)	Dec-96 (mg/L)	Nov-99 (mg/L)	Aug-00 (mg/L)	Nov-00 (mg/L)	Jun-02 (mg/L)	Nov-02 (mg/L)	Jul-03 (mg/L)	Jan-04 (mg/L)	Jun-05 (mg/L)	Aug-05 (mg/L)	Mar-06 (mg/L)	Sept-06 (mg/L)	Oct-07 (mg/L)	Sep-12 (mg/L)	Jun-13 (mg/L)	Apr-14 (mg/L)	Jul-15 (mg/L)	Analytical Method	ADEC Method Two Groundwater Cleanup Level (mg/L)[1]
MW-13	GRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**217**	**236**	**159**	NS	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**	NS	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**	NS	AK103	1.1
	Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**19.6**	**18.500**	**10.600**	NS	SW8021b	0.005
	Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**63.9**	**58.300**	**42.200**	NS	SW8021b	1.0
	Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**5.29**	**4.900**	**5.600**	NS	SW8021b	0.7
	Total Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**26.7**	**26.900**	**28.510**	NS	SW8021b	10.0
	1,2,4-Trimethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**2.140**	NS	NS	SW8260B	
	n-Propylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**0.399**	NS	NS	SW8260B	
MW-14	GRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**118**	**140**	**113**	**94.8**	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**	**53.6**	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**	**5.72**	AK103	1.1
	Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**19.6**	**17.300**	**19.100**	**13.500**	SW8021b	0.005
	Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**26.1**	**25.800**	**26.200**	**19.100**	SW8021b	1.0
	Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**2.51**	**2.240**	**2.070**	**1.710**	SW8021b	0.7
	Total Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**14.78**	**15.320**	**15.240**	**13.470**	SW8021b	10.0
MW-15	GRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**86.100**	NS	NS	**56.500**	1.33	**2.25**	**7.98**	NS	AK101	1.3
	DRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**14.6**	NS	NS	**4.96**	1.03	**2.01**	**1.83**	NS	AK102	1.5
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**1.19**	NS	NS	0.439	**1.010**	**1.19**	**2.25**	NS	AK103	1.1
	Benzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**16.900**	NS	NS	**6.690**	**0.0467**	**0.517**	**1.790**	NS	SW8021b	0.005
	Toluene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**19.800**	NS	NS	**8.630**	0.0514	0.213	0.492	NS	SW8021b	1.0
	Ethylbenzene	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**2.030**	NS	NS	**1.270**	0.0229	0.0567	0.1130	NS	SW8021b	0.7
	Total Xylenes	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	**10.010**	NS	NS	6.810	0.1119	0.2171	0.3670	NS	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	AK101	1.3
	DRO	NS	NS	NS	NS	NS	NS	NS	<MRL	NS	NS	NS	<MRL	NS	NS	ND	NS	NS	NS	NS	NS	AK102	1.5
	RRO	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	ND	NS	NS	NS	NS	NS	AK103	1.1
	Benzene	NS	NS	<MRL	NS	<MRL	<MRL	NS	<MRL	NS	NS	NS	ND	NS	NS	**0.0108**	NS	ND	NS	NS	ND	EPA 524.2	0.005
	Toluene	NS	NS	<MRL	NS	<MRL	<MRL	NS	<MRL	NS	NS	NS	ND	NS	NS	0.0495	NS	ND	NS	NS	ND	EPA 524.2	1.0
	Ethylbenzene	NS	NS	<MRL	NS	<MRL	<MRL	NS	<MRL	NS	NS	NS	ND	NS	NS	0.00947	NS	ND	NS	NS	ND	EPA 524.2	0.7
	Total Xylenes	NS	NS	<MRL	NS	<MRL	<MRL	NS	<MRL	NS	NS	NS	ND	NS	NS	0.0613	NS	ND	NS	NS	ND	EPA 524.2	10.0
	VOCs	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	ND	NS	NS	NA	NS	ND	NS	NS	ND	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 = miligrams per Liter VOCs = Volatile Organic Compunds
BOLD = Value exceeds ADEC cleanup threshold.
[1] Groundwater cleanup thresholds based on 18AAC 75.345 Table C.

APPENDIX A
FIELD NOTES

		To PVC	To Grade
	MW1	3.74	3.48
	MW2	6.54	6.24
	MW3	6.68	6.14
	MW5	5.2	4.99
	MW8	7.11	6.48
6.83	MW9	~~[illegible]~~ 6.83	~~[illegible]~~ 6.45
	MW10	3.01	2.74
	MW11	7.71	7.36
	MW12	8.3	7.84
	MW13	5.12	4.62
	MW14	5.0	4.75
	MW15	6.55	6.35
	B6/VE	4.58	4.29

T1-R1 = 4.33

10:20 Set up on MW12. Started pump and began purging

11:25 took ~~[illegible]~~ water sample MW12-0630 from MW12.
moved to MW8

11:50 started purging MW8

12:47 took sample MW8-0630 from MW8. cleaned equipment and loaded up to get lunch

13:10 off site for lunch.

13:40 return to site.

13:50 took cap off MW9 to check depths. ~~[illegible]~~ obstruction down hole when lower water level indicator but was able to work it through. Rigged up 1.75" pump to put down hole. Hung up at water. Cannot get pump down hole. Unable to purge/sample MW9.
Moved equipment to MW14

14:48 started purging MW14

10:35 BGES LEFT THE SITE. GEOTEK WORKING ON MW8-MW11 REPAIRS.

15:06 STOPPED BY SITE TO OBSERVE. PROJECT STAINS. - * EXPANDABLE PLUG WAS TAKEN FROM THIS PROJECT 100th AVENUE *

15:05 BGES ARRIVED LEFT THE SITE.

15:40 BGES ARRIVED ON SITE TO OBSERVE ACTIVITIES, OBSERVE TRAFFIC CONTROL LEAVE SITE.

16:05 BGES LEFT THE SITE FOR THE DAY. GEOTEK ONSITE TO COMPLETE ADDTL. MONITORING WELL REPAIRS.

0840 BGES on site met w/ Northern Dame to discuss TCP. Spoke w/ Allen from six robbers Started removing well covers.

	To water
MW1	8.72
MW2	6.21
MW3	5.65
MW5	7.99
MW8	6.10
MW9	5.75
MW10	8.47
MW11	5.51
MW12	4.96
MW13	7.57
MW14	7.79
MW15	6.22
B6/VE	8.01

15:37 took water sample MW14-0630
15:40 took water sample MW6R-0630 (Duplicate of MW14-0630)
Moved equipment to MW5
16:12 Started purging MW5
16:53 took water sample MW5-0630
began cleanup
17:18 Schmaltz off site for day

7-1-15 60°F Cloudy

10:50 arrive on site. Met w/ manager.
11:00 opened MW9 to try and free obstruction. Made a hook w/ steel rod. Pulled out ~8 ft of tubing from MW9
11:35 started faucet to purge water supply well.
11:40 opened up cover of soil gas sampling point. Tried several different techniques to free sampling point w/out any success.
12:15 took water sample WSW1-0701 from water supply well.
12:24 Schmaltz off sit. Will come back later to sample MW9
1730 arrived back on site. Took water depth measurements in MW9. hooked up pump and tubing. Forgot battery.
1755 off site

7-2-15 55°F Cloudy

0720 Schmaltz arrive on site. Remove well cover MW9. Started purge

0855 took sample MW9-0702 from MW9 Started cleaned up. Placed purge/decon bucket in fenced area around back of building. Total of 4 buckets of water remain on site for disposal.

0925 Schmaltz off site

7-21-15

11:00 BGES arrived on site. Spoke with shop foima about decommissioning sub-slab soil gas implant. Located implant. Twisted off top cap. The Hole was then filled with concrete to match the existing surface.

11:24 BGES off site

BGES, INC.

GROUNDWATER MONITORING LOG

Well Number: MW5
Date of Sampling Event: 6-30-15

Weather Conditions: 65°F Overcast Wind
Time of Depth to Water Measurement: 16:00
Date of Depth to Water Measurement: 6-30-15

Total Depth of Well (feet below TOC): 12.98
Depth to Water (feet below TOC): 7.99
Water Column (feet): 4.99

Type of Sampling Equipment: MP50 controller, 1.75" bladder pump, YSI Pro Plus

Volume of well (gals): .814

=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: 16:12
Time of Sampling: 1653
Volume purged: 2.5 gal **PURGE A MINIMUM OF THREE WELL VOLUMES**

Temperature (°C)	10.8	Temperature (°C)			
Conductivity	1079	Conductivity			
pH	6.75	pH			
ORP	-19.3	ORP			
Volume Purged	1 gal	Volume Purged			
Depth To Water	-	Depth To Water			
Time of Measurement	16:29	Time of Measurement			
Temperature (°C)	11.3	Temperature (°C)			
Conductivity	1110	Conductivity			
pH	6.37	pH			
ORP	-51.2	ORP			
Volume Purged	2 gal	Volume Purged			
Depth To Water	-	Depth To Water			
Time of Measurement	16:45	Time of Measurement			
Temperature (°C)		Temperature (°C)			
Conductivity		Conductivity			
pH		pH			
ORP		ORP			
Volume Purged		Volume Purged			
Depth To Water		Depth To Water			
Time of Measurement		Time of Measurement			
Temperature (°C)		Temperature (°C)			
Conductivity		Conductivity			
pH		pH			
ORP		ORP			
Volume Purged		Volume Purged			
Depth To Water		Depth To Water			
Time of Measurement		Time of Measurement			

Depth of Bladder intake: 8.5 ft

Purge Rate: 200 mL/min

Sample Rate: 150 mL/min

Sample ID: MW5-0630

Additional Notes:

BGES, INC.

GROUNDWATER MONITORING LOG

BGES, INC.

Well Number: MW8

Date of Sampling Event: 6-30-15

Weather Conditions: 60°F Sunny

Time of Depth to Water Measurement: 09:20

Date of Depth to Water Measurement: 6-30-15

Total Depth of Well (feet below TOC): 13.74

Depth to Water (feet below TOC): 6.10

Water Column (feet): 7.64

Type of Sampling Equipment: MP50 Controller, 1.75" bladder pump. YSI pro plus

Volume of well (gals): 1.25

=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: 11:50

Time of Sampling: 12:47

Volume purged: 3.75 gal **PURGE A MINIMUM OF THREE WELL VOLUMES**

Temperature (°C)	11.6	Temperature (°C)		**Depth of Bladder intake:** 6.6 ft
Conductivity	602	Conductivity		
pH	6.52	pH		
ORP	30.1	ORP		
Volume Purged	1 gal	Volume Purged		
Depth To Water	-	Depth To Water		
Time of Measurement	12:12	Time of Measurement		
Temperature (°C)	11.1	Temperature (°C)		**Purge Rate:** 200 mL/min
Conductivity	590	Conductivity		
pH	6.84	pH		
ORP	-25	ORP		
Volume Purged	2 gal	Volume Purged		
Depth To Water	-	Depth To Water		
Time of Measurement	12:30	Time of Measurement		
				Sample Rate: 150 mL/min
Temperature (°C)	11.1	Temperature (°C)		
Conductivity	576	Conductivity		
pH	7.05	pH		
ORP	-53.2	ORP		**Sample ID:** MW8-0630
Volume Purged	3 gal	Volume Purged		
Depth To Water	-	Depth To Water		
Time of Measurement	12:24	Time of Measurement		
Temperature (°C)		Temperature (°C)		
Conductivity		Conductivity		
pH		pH		
ORP		ORP		
Volume Purged		Volume Purged		
Depth To Water		Depth To Water		
Time of Measurement		Time of Measurement		

Additional Notes:

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ENVIRONMENTAL CONSULTANTS

GROUNDWATER MONITORING LOG

BGES, INC.

Well Number: MW9
Date of Sampling Event: 7-2-15

Weather Conditions: 55°F Cloudy
Time of Depth to Water Measurement: 07:30
Date of Depth to Water Measurement: 7-2-15

Total Depth of Well (feet below TOC): 13.24
Depth to Water (feet below TOC): 5.82
Water Column (feet): 7.42

Type of Sampling Equipment: MP50 Controller, 3.75" Bladder Pump, YSI Pro Plus

Volume of well (gals): 1.21

=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: 7:40
Time of Sampling: 0855
Volume purged: 4 gal

PURGE A MINIMUM OF THREE WELL VOLUMES

Temperature (°C)	10.9	Temperature (°C)	
Conductivity	789	Conductivity	
pH	6.70	pH	
ORP	75.6	ORP	
Volume Purged	1 gal	Volume Purged	
Depth To Water	-	Depth To Water	
Time of Measurement	07:58	Time of Measurement	
Temperature (°C)	9.9	Temperature (°C)	
Conductivity	793	Conductivity	
pH	7.25	pH	
ORP	64.8	ORP	
Volume Purged	2 gal	Volume Purged	
Depth To Water	-	Depth To Water	
Time of Measurement	08:14	Time of Measurement	
Temperature (°C)	10.8	Temperature (°C)	
Conductivity	924	Conductivity	
pH	7.11	pH	
ORP	53.5	ORP	
Volume Purged	3 gal	Volume Purged	
Depth To Water	-	Depth To Water	
Time of Measurement	08:38	Time of Measurement	
Temperature (°C)		Temperature (°C)	
Conductivity		Conductivity	
pH		pH	
ORP		ORP	
Volume Purged		Volume Purged	
Depth To Water		Depth To Water	
Time of Measurement		Time of Measurement	

Depth of Bladder intake: 6.4 ft

Purge Rate: 200 mL/min

Sample Rate: 150 mL/min

Sample ID: MW9-0702

Additional Notes:
After 2 gallons were purged, pump was slowed to 150 mL/min.

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GROUNDWATER MONITORING LOG

BGES, INC.

Well Number: MW12
Date of Sampling Event: 6-30-15

Weather Conditions: 55°F Overcast
Time of Depth to Water Measurement: 09:20
Date of Depth to Water Measurement: 6-30-15

Total Depth of Well (feet below TOC): 8.2
Depth to Water (feet below TOC): 4.96
Water Column (feet): 3.24

Type of Sampling Equipment: MP50 Controller, 1.75" bladder Pump. YSI Pro Plus

Volume of well (gals): 0.53

=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: 10:35
Time of Sampling: 11:25
Volume purged: 2.5 gal **PURGE A MINIMUM OF THREE WELL VOLUMES**

Temperature (°C)	13.0	Temperature (°C)	
Conductivity	574	Conductivity	
pH	6.5	pH	
ORP	83.7	ORP	
Volume Purged	1 gal	Volume Purged	
Depth To Water	-	Depth To Water	
Time of Measurement	10:50	Time of Measurement	
Temperature (°C)	12.3	Temperature (°C)	
Conductivity	570	Conductivity	
pH	7.38	pH	
ORP	76.7	ORP	
Volume Purged	2.5 gal	Volume Purged	
Depth To Water	-	Depth To Water	
Time of Measurement	11:12	Time of Measurement	
Temperature (°C)		Temperature (°C)	
Conductivity		Conductivity	
pH		pH	
ORP		ORP	
Volume Purged		Volume Purged	
Depth To Water		Depth To Water	
Time of Measurement		Time of Measurement	
Temperature (°C)		Temperature (°C)	
Conductivity		Conductivity	
pH		pH	
ORP		ORP	
Volume Purged		Volume Purged	
Depth To Water		Depth To Water	
Time of Measurement		Time of Measurement	

Depth of Bladder intake: 5.5 ft

Purge Rate: 150 mL/min

Sample Rate: 150 mL/min

Sample ID: MW12-0630

Additional Notes:

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GROUNDWATER MONITORING LOG

BGES, INC.

Well Number: MW14
Date of Sampling Event: 6-30-15

Weather Conditions: 60°F Cloudy
Time of Depth to Water Measurement: 14:30
Date of Depth to Water Measurement: 6-30-15

Total Depth of Well (feet below TOC): 12.83
Depth to Water (feet below TOC): 7.79
Water Column (feet): 5.04

Type of Sampling Equipment: MP50 controller. 1.75" Bladder Pump, YSI Pro Plus

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)

Time Purging Began: 14:48
Time of Sampling: 15:37
Volume purged: 2.5 gal **PURGE A MINIMUM OF THREE WELL VOLUMES**

Temperature (°C)	12	Temperature (°C)	
Conductivity	938	Conductivity	
pH	6.75	pH	
ORP	6.4	ORP	
Volume Purged	1 gal	Volume Purged	
Depth To Water	-	Depth To Water	
Time of Measurement	15:10	Time of Measurement	
Temperature (°C)	12.3	Temperature (°C)	
Conductivity	1023	Conductivity	
pH	7.01	pH	
ORP	-35.6	ORP	
Volume Purged	2 gal	Volume Purged	
Depth To Water	-	Depth To Water	
Time of Measurement	15:29	Time of Measurement	
Temperature (°C)		Temperature (°C)	
Conductivity		Conductivity	
pH		pH	
ORP		ORP	
Volume Purged		Volume Purged	
Depth To Water		Depth To Water	
Time of Measurement		Time of Measurement	
Temperature (°C)		Temperature (°C)	
Conductivity		Conductivity	
pH		pH	
ORP		ORP	
Volume Purged		Volume Purged	
Depth To Water		Depth To Water	
Time of Measurement		Time of Measurement	

Depth of Bladder intake: 8.3 ft.

Purge Rate: 200 mL/min

Sample Rate: 150 mL/min

Sample ID: MW14-0630
Duplicate → MW6R-0630

Additional Notes:
15:40 duplicate MW6R-0630 taken from MW14

APPENDIX B
LABORATORY ANALYTICAL DATA

Laboratory Report of Analysis

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

Report Number: **1153342**

Client Project: **4748 Old Seward Highway**

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 ten 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.

SGS North America Inc.
Environmental Services – Alaska Division
Project Manager
Victoria Pennick
2015.07.21
16:10:22 -08'00'

Victoria Pennick Date
Project Manager
Victoria.Pennick@sgs.com

Print Date: 07/21/2015 2:15:53PM

Case Narrative

SGS Client: **BGES Inc.**
SGS Project: **1153342**
Project Name/Site: **4748 Old Seward Highway**
Project Contact: **Jayne Martin**

Refer to sample receipt form for information on sample condition.

1153093002 MS (1153093003) BMS

AK101 - Surrogate recovery for 4-bromofluorobenzene (200%) does not meet QC criteria due to matrix interference.

1153093002 MSD (1153093004) BMSD

AK101 - Surrogate recovery for 4-bromofluorobenzene (201%) does not meet QC criteria due to matrix interference.

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

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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. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

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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: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 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/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing 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.

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
GW-062715-MW2-02 MS	1153093003	06/27/2015	06/29/2015	Water (Surface, Eff., Ground)
GW-062715-MW2-02 MSD	1153093004	06/27/2015	06/29/2015	Water (Surface, Eff., Ground)

Method	Method Description
AK101	AK101/8021 Combo.
SW8021B	AK101/8021 Combo.
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
EPA 524.2	Volatile Organics by 524.2 (DW)

MW5-0630	1153342001	06/30/2015	07/02/2015	Water (Surface, Eff., Ground)
MW8-0630	1153342002	06/30/2015	07/02/2015	Water (Surface, Eff., Ground)
MW9-0702	1153342003	07/02/2015	07/02/2015	Water (Surface, Eff., Ground)
MW12-0630	1153342004	06/30/2015	07/02/2015	Water (Surface, Eff., Ground)
MW14-0630	1153342005	06/30/2015	07/02/2015	Water (Surface, Eff., Ground)
MW6R-0630	1153342006	06/30/2015	07/02/2015	Water (Surface, Eff., Ground)
WSW1-0701	1153342007	07/01/2015	07/02/2015	Drinking Water
Trip Blank	1153342008	06/30/2015	07/02/2015	Drinking Water
Trip Blank	1153342009	06/30/2015	07/02/2015	Water (Surface, Eff., Ground)

Method	Method Description
AK101	AK101/8021 Combo.
SW8021B	AK101/8021 Combo.
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
EPA 524.2	Volatile Organics by 524.2 (DW)

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Detectable Results Summary

Client Sample ID: **MW5-0630**
Lab Sample ID: 1153342001

Parameter	Result	Units
Volatile Fuels		
Benzene	12.6	ug/L
o-Xylene	1.20	ug/L
P & M -Xylene	2.96	ug/L
Toluene	2.07	ug/L

Client Sample ID: **MW8-0630**
Lab Sample ID: 1153342002

Parameter	Result	Units
Volatile Fuels		
Benzene	6.95	ug/L

Client Sample ID: **MW9-0702**
Lab Sample ID: 1153342003

Parameter	Result	Units
Semivolatile Organic Fuels		
Residual Range Organics	0.651	mg/L

Client Sample ID: **MW12-0630**
Lab Sample ID: 1153342004

Parameter	Result	Units
Semivolatile Organic Fuels		
Residual Range Organics	1.18	mg/L
Volatile Fuels		
Benzene	0.580	ug/L

Client Sample ID: **MW14-0630**
Lab Sample ID: 1153342005

Parameter	Result	Units
Semivolatile Organic Fuels		
Diesel Range Organics	53.6	mg/L
Residual Range Organics	5.72	mg/L
Volatile Fuels		
Benzene	13200	ug/L
Ethylbenzene	1650	ug/L
Gasoline Range Organics	92.7	mg/L
o-Xylene	3970	ug/L
P & M -Xylene	9220	ug/L
Toluene	18700	ug/L

Client Sample ID: **MW6R-0630**
Lab Sample ID: 1153342006

Parameter	Result	Units
Semivolatile Organic Fuels		
Diesel Range Organics	38.6	mg/L
Residual Range Organics	3.85	mg/L
Volatile Fuels		
Benzene	13500	ug/L
Ethylbenzene	1710	ug/L
Gasoline Range Organics	94.8	mg/L
o-Xylene	4030	ug/L
P & M -Xylene	9440	ug/L
Toluene	19100	ug/L

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Results of **MW5-0630**

Client Sample ID: **MW5-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342001
Lab Project ID: 1153342

Collection Date: 06/30/15 16:53
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.600	U	0.600	0.180	mg/L	1		07/14/15 01:59
Surrogates								
5a Androstane (surr)	88.6		50-150		%	1		07/14/15 01:59

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK102
Analyst: NLL
Analytical Date/Time: 07/14/15 01:59
Container ID: 1153342001-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.500	U	0.500	0.150	mg/L	1		07/14/15 01:59
Surrogates								
n-Triacontane-d62 (surr)	86.5		50-150		%	1		07/14/15 01:59

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK103
Analyst: NLL
Analytical Date/Time: 07/14/15 01:59
Container ID: 1153342001-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **MW5-0630**

Client Sample ID: **MW5-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342001
Lab Project ID: 1153342

Collection Date: 06/30/15 16:53
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.100	U	0.100	0.0310	mg/L	1		07/06/15 17:43
Surrogates								
4-Bromofluorobenzene (surr)	104		50-150		%	1		07/06/15 17:43

Batch Information

Analytical Batch: VFC12505
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 07/06/15 17:43
Container ID: 1153342001-C

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 07/06/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	12.6		0.500	0.150	ug/L	1		07/06/15 17:43
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/06/15 17:43
o-Xylene	1.20		1.00	0.310	ug/L	1		07/06/15 17:43
P & M -Xylene	2.96		2.00	0.620	ug/L	1		07/06/15 17:43
Toluene	2.07		1.00	0.310	ug/L	1		07/06/15 17:43
Surrogates								
1,4-Difluorobenzene (surr)	86.6		77-115		%	1		07/06/15 17:43

Batch Information

Analytical Batch: VFC12505
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 07/06/15 17:43
Container ID: 1153342001-C

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 07/06/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/21/2015 2:15:58PM

Results of **MW8-0630**

Client Sample ID: **MW8-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342002
Lab Project ID: 1153342

Collection Date: 06/30/15 12:47
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.600	U	0.600	0.180	mg/L	1		07/14/15 02:20
Surrogates								
5a Androstane (surr)	100		50-150		%	1		07/14/15 02:20

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK102
Analyst: NLL
Analytical Date/Time: 07/14/15 02:20
Container ID: 1153342002-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.500	U	0.500	0.150	mg/L	1		07/14/15 02:20
Surrogates								
n-Triacontane-d62 (surr)	93.8		50-150		%	1		07/14/15 02:20

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK103
Analyst: NLL
Analytical Date/Time: 07/14/15 02:20
Container ID: 1153342002-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 07/21/2015 2:15:58PM

Results of **MW8-0630**

Client Sample ID: **MW8-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342002
Lab Project ID: 1153342

Collection Date: 06/30/15 12:47
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.100	U	0.100	0.0310	mg/L	1		07/06/15 18:40
Surrogates								
4-Bromofluorobenzene (surr)	107		50-150		%	1		07/06/15 18:40

Batch Information

Analytical Batch: VFC12505
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 07/06/15 18:40
Container ID: 1153342002-C

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 07/06/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	6.95		0.500	0.150	ug/L	1		07/06/15 18:40
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/06/15 18:40
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/06/15 18:40
P & M -Xylene	2.00	U	2.00	0.620	ug/L	1		07/06/15 18:40
Toluene	1.00	U	1.00	0.310	ug/L	1		07/06/15 18:40
Surrogates								
1,4-Difluorobenzene (surr)	85.3		77-115		%	1		07/06/15 18:40

Batch Information

Analytical Batch: VFC12505
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 07/06/15 18:40
Container ID: 1153342002-C

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 07/06/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/21/2015 2:15:58PM

Results of **MW9-0702**

Client Sample ID: **MW9-0702**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342003
Lab Project ID: 1153342

Collection Date: 07/02/15 08:55
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.600	U	0.600	0.180	mg/L	1		07/14/15 02:40
Surrogates								
5a Androstane (surr)	93.3		50-150		%	1		07/14/15 02:40

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK102
Analyst: NLL
Analytical Date/Time: 07/14/15 02:40
Container ID: 1153342003-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.651		0.500	0.150	mg/L	1		07/14/15 02:40
Surrogates								
n-Triacontane-d62 (surr)	94.9		50-150		%	1		07/14/15 02:40

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK103
Analyst: NLL
Analytical Date/Time: 07/14/15 02:40
Container ID: 1153342003-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Results of **MW9-0702**

Client Sample ID: **MW9-0702**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342003
Lab Project ID: 1153342

Collection Date: 07/02/15 08:55
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.100	U	0.100	0.0310	mg/L	1		07/06/15 18:59
Surrogates								
4-Bromofluorobenzene (surr)	101		50-150		%	1		07/06/15 18:59

Batch Information

Analytical Batch: VFC12505
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 07/06/15 18:59
Container ID: 1153342003-C

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 07/06/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500	U	0.500	0.150	ug/L	1		07/06/15 18:59
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/06/15 18:59
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/06/15 18:59
P & M -Xylene	2.00	U	2.00	0.620	ug/L	1		07/06/15 18:59
Toluene	1.00	U	1.00	0.310	ug/L	1		07/06/15 18:59
Surrogates								
1,4-Difluorobenzene (surr)	84.4		77-115		%	1		07/06/15 18:59

Batch Information

Analytical Batch: VFC12505
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 07/06/15 18:59
Container ID: 1153342003-C

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 07/06/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW12-0630**

Client Sample ID: **MW12-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342004
Lab Project ID: 1153342

Collection Date: 06/30/15 11:25
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.600	U	0.600	0.180	mg/L	1		07/14/15 03:00
Surrogates								
5a Androstane (surr)	101		50-150		%	1		07/14/15 03:00

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK102
Analyst: NLL
Analytical Date/Time: 07/14/15 03:00
Container ID: 1153342004-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	1.18		0.500	0.150	mg/L	1		07/14/15 03:00
Surrogates								
n-Triacontane-d62 (surr)	104		50-150		%	1		07/14/15 03:00

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK103
Analyst: NLL
Analytical Date/Time: 07/14/15 03:00
Container ID: 1153342004-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 07/21/2015 2:15:58PM

Results of **MW12-0630**

Client Sample ID: **MW12-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342004
Lab Project ID: 1153342

Collection Date: 06/30/15 11:25
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.100	U	0.100	0.0310	mg/L	1		07/06/15 19:18
Surrogates								
4-Bromofluorobenzene (surr)	101		50-150		%	1		07/06/15 19:18

Batch Information

Analytical Batch: VFC12505
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 07/06/15 19:18
Container ID: 1153342004-C

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 07/06/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.580		0.500	0.150	ug/L	1		07/06/15 19:18
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/06/15 19:18
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/06/15 19:18
P & M -Xylene	2.00	U	2.00	0.620	ug/L	1		07/06/15 19:18
Toluene	1.00	U	1.00	0.310	ug/L	1		07/06/15 19:18
Surrogates								
1,4-Difluorobenzene (surr)	85.1		77-115		%	1		07/06/15 19:18

Batch Information

Analytical Batch: VFC12505
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 07/06/15 19:18
Container ID: 1153342004-C

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 07/06/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **MW14-0630**

Client Sample ID: **MW14-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342005
Lab Project ID: 1153342

Collection Date: 06/30/15 15:37
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	53.6		2.40	0.720	mg/L	4		07/21/15 05:01
Surrogates								
5a Androstane (surr)	110		50-150		%	4		07/21/15 05:01

Batch Information

Analytical Batch: XFC11956
Analytical Method: AK102
Analyst: KJO
Analytical Date/Time: 07/21/15 05:01
Container ID: 1153342005-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	5.72		0.500	0.150	mg/L	1		07/14/15 04:01
Surrogates								
n-Triacontane-d62 (surr)	116		50-150		%	1		07/14/15 04:01

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK103
Analyst: NLL
Analytical Date/Time: 07/14/15 04:01
Container ID: 1153342005-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 07/21/2015 2:15:58PM

Results of **MW14-0630**

Client Sample ID: **MW14-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342005
Lab Project ID: 1153342

Collection Date: 06/30/15 15:37
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	92.7		10.0	3.10	mg/L	100		07/07/15 22:31
Surrogates								
4-Bromofluorobenzene (surr)	108		50-150		%	100		07/07/15 22:31

Batch Information

Analytical Batch: VFC12507
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 07/07/15 22:31
Container ID: 1153342005-D

Prep Batch: VXX27546
Prep Method: SW5030B
Prep Date/Time: 07/07/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	13200		50.0	15.0	ug/L	100		07/07/15 22:31
Ethylbenzene	1650		100	31.0	ug/L	100		07/07/15 22:31
o-Xylene	3970		100	31.0	ug/L	100		07/07/15 22:31
P & M -Xylene	9220		200	62.0	ug/L	100		07/07/15 22:31
Toluene	18700		100	31.0	ug/L	100		07/07/15 22:31
Surrogates								
1,4-Difluorobenzene (surr)	98		77-115		%	100		07/07/15 22:31

Batch Information

Analytical Batch: VFC12507
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 07/07/15 22:31
Container ID: 1153342005-D

Prep Batch: VXX27546
Prep Method: SW5030B
Prep Date/Time: 07/07/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

SGS North America Inc.
200 West Potter Drive Anchorage, AK 95518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Results of **MW6R-0630**

Client Sample ID: **MW6R-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342006
Lab Project ID: 1153342

Collection Date: 06/30/15 15:40
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	38.6		0.600	0.180	mg/L	1		07/14/15 04:21
Surrogates								
5a Androstane (surr)	101		50-150		%	1		07/14/15 04:21

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK102
Analyst: NLL
Analytical Date/Time: 07/14/15 04:21
Container ID: 1153342006-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	3.85		0.500	0.150	mg/L	1		07/14/15 04:21
Surrogates								
n-Triacontane-d62 (surr)	109		50-150		%	1		07/14/15 04:21

Batch Information

Analytical Batch: XFC11939
Analytical Method: AK103
Analyst: NLL
Analytical Date/Time: 07/14/15 04:21
Container ID: 1153342006-A

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 07/09/15 09:55
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 07/21/2015 2:15:58PM

Results of **MW6R-0630**

Client Sample ID: **MW6R-0630**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342006
Lab Project ID: 1153342

Collection Date: 06/30/15 15:40
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	94.8		10.0	3.10	mg/L	100		07/07/15 22:12
Surrogates								
4-Bromofluorobenzene (surr)	107		50-150		%	100		07/07/15 22:12

Batch Information

Analytical Batch: VFC12507
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 07/07/15 22:12
Container ID: 1153342006-D

Prep Batch: VXX27546
Prep Method: SW5030B
Prep Date/Time: 07/07/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	13500		50.0	15.0	ug/L	100		07/07/15 22:12
Ethylbenzene	1710		100	31.0	ug/L	100		07/07/15 22:12
o-Xylene	4030		100	31.0	ug/L	100		07/07/15 22:12
P & M -Xylene	9440		200	62.0	ug/L	100		07/07/15 22:12
Toluene	19100		100	31.0	ug/L	100		07/07/15 22:12
Surrogates								
1,4-Difluorobenzene (surr)	99.3		77-115		%	100		07/07/15 22:12

Batch Information

Analytical Batch: VFC12507
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 07/07/15 22:12
Container ID: 1153342006-D

Prep Batch: VXX27546
Prep Method: SW5030B
Prep Date/Time: 07/07/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **WSW1-0701**

Client Sample ID: **WSW1-0701**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342007
Lab Project ID: 1153342

Collection Date: 07/01/15 12:15
Received Date: 07/02/15 09:54
Matrix: Drinking Water
Solids (%):
Location:

Results by **Volatile Gas Chromatography/Mass Spectrome**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,1,1-Trichloroethane	0.500	U	0.500	0.150	ug/L	1	(<200)	07/03/15 05:54
1,1,2,2-Tetrachloroethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,1,2-Trichloroethane	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:54
1,1-Dichloroethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,1-Dichloroethene	0.500	U	0.500	0.150	ug/L	1	(<7)	07/03/15 05:54
1,1-Dichloropropene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,2,3-Trichlorobenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,2,3-Trichloropropane	0.500	U	0.500	0.180	ug/L	1		07/03/15 05:54
1,2,4-Trichlorobenzene	0.500	U	0.500	0.150	ug/L	1	(<70)	07/03/15 05:54
1,2,4-Trimethylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,2-Dibromo-3-chloropropane	2.00	U	2.00	0.620	ug/L	1		07/03/15 05:54
1,2-Dibromoethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,2-Dichlorobenzene	0.500	U	0.500	0.150	ug/L	1	(<600)	07/03/15 05:54
1,2-Dichloroethane	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:54
1,2-Dichloropropane	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:54
1,3,5-Trimethylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,3-Dichlorobenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,3-Dichloropropane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
1,4-Dichlorobenzene	0.500	U	0.500	0.150	ug/L	1	(<75)	07/03/15 05:54
2,2-Dichloropropane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
2-Chlorotoluene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
4-Chlorotoluene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
4-Isopropyltoluene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Benzene	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:54
Bromobenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Bromochloromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Bromodichloromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Bromoform	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Bromomethane	2.00	U	2.00	0.620	ug/L	1		07/03/15 05:54
Carbon tetrachloride	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:54
Chlorobenzene	0.500	U	0.500	0.150	ug/L	1	(<100)	07/03/15 05:54
Chloroethane	1.00	U	1.00	0.310	ug/L	1		07/03/15 05:54
Chloroform	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Chloromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
cis-1,2-Dichloroethene	0.500	U	0.500	0.150	ug/L	1	(<70)	07/03/15 05:54
cis-1,3-Dichloropropene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54

Print Date: 07/21/2015 2:15:58PM

Results of **WSW1-0701**

Client Sample ID: **WSW1-0701**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342007
Lab Project ID: 1153342

Collection Date: 07/01/15 12:15
Received Date: 07/02/15 09:54
Matrix: Drinking Water
Solids (%):
Location:

Results by **Volatile Gas Chromatography/Mass Spectrome**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Dibromochloromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Dibromomethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Dichlorodifluoromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Ethylbenzene	0.500	U	0.500	0.150	ug/L	1	(<700)	07/03/15 05:54
Hexachlorobutadiene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Isopropylbenzene (Cumene)	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Methylene chloride	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:54
Methyl-t-butyl ether	1.00	U	1.00	0.500	ug/L	1		07/03/15 05:54
Naphthalene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
n-Butylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
n-Propylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
o-Xylene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
P & M -Xylene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
sec-Butylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Styrene	0.500	U	0.500	0.150	ug/L	1	(<100)	07/03/15 05:54
tert-Butylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Tetrachloroethene	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:54
Toluene	0.500	U	0.500	0.150	ug/L	1	(<1000)	07/03/15 05:54
Total Trihalomethanes	2.00	U	2.00	0.600	ug/L	1	(<80)	07/03/15 05:54
trans-1,2-Dichloroethene	0.500	U	0.500	0.150	ug/L	1	(<100)	07/03/15 05:54
trans-1,3-Dichloropropene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Trichloroethene	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:54
Trichlorofluoromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:54
Vinyl chloride	0.400	U	0.400	0.120	ug/L	1	(<2)	07/03/15 05:54
Xylenes (total)	0.500	U	0.500	0.150	ug/L	1	(<10000)	07/03/15 05:54
Surrogates								
1,2-Dichloroethane-D4 (surr)	108		70-130		%	1		07/03/15 05:54
4-Bromofluorobenzene (surr)	99.1		70-130		%	1		07/03/15 05:54
Toluene-d8 (surr)	97.9		70-130		%	1		07/03/15 05:54

Batch Information

Analytical Batch: VMS15070
Analytical Method: EPA 524.2
Analyst: NRB
Analytical Date/Time: 07/03/15 05:54
Container ID: 1153342007-A

Prep Batch: VXX27530
Prep Method: SW5030B
Prep Date/Time: 07/03/15 00:01
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/21/2015 2:15:58PM

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342008
Lab Project ID: 1153342

Collection Date: 06/30/15 12:47
Received Date: 07/02/15 09:54
Matrix: Drinking Water
Solids (%):
Location:

Results by **Volatile Gas Chromatography/Mass Spectrome**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,1,1-Trichloroethane	0.500	U	0.500	0.150	ug/L	1	(<200)	07/03/15 05:38
1,1,2,2-Tetrachloroethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,1,2-Trichloroethane	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:38
1,1-Dichloroethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,1-Dichloroethene	0.500	U	0.500	0.150	ug/L	1	(<7)	07/03/15 05:38
1,1-Dichloropropene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,2,3-Trichlorobenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,2,3-Trichloropropane	0.500	U	0.500	0.180	ug/L	1		07/03/15 05:38
1,2,4-Trichlorobenzene	0.500	U	0.500	0.150	ug/L	1	(<70)	07/03/15 05:38
1,2,4-Trimethylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,2-Dibromo-3-chloropropane	2.00	U	2.00	0.620	ug/L	1		07/03/15 05:38
1,2-Dibromoethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,2-Dichlorobenzene	0.500	U	0.500	0.150	ug/L	1	(<600)	07/03/15 05:38
1,2-Dichloroethane	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:38
1,2-Dichloropropane	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:38
1,3,5-Trimethylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,3-Dichlorobenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,3-Dichloropropane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
1,4-Dichlorobenzene	0.500	U	0.500	0.150	ug/L	1	(<75)	07/03/15 05:38
2,2-Dichloropropane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
2-Chlorotoluene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
4-Chlorotoluene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
4-Isopropyltoluene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Benzene	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:38
Bromobenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Bromochloromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Bromodichloromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Bromoform	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Bromomethane	2.00	U	2.00	0.620	ug/L	1		07/03/15 05:38
Carbon tetrachloride	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:38
Chlorobenzene	0.500	U	0.500	0.150	ug/L	1	(<100)	07/03/15 05:38
Chloroethane	1.00	U	1.00	0.310	ug/L	1		07/03/15 05:38
Chloroform	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Chloromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
cis-1,2-Dichloroethene	0.500	U	0.500	0.150	ug/L	1	(<70)	07/03/15 05:38
cis-1,3-Dichloropropene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342008
Lab Project ID: 1153342

Collection Date: 06/30/15 12:47
Received Date: 07/02/15 09:54
Matrix: Drinking Water
Solids (%):
Location:

Results by **Volatile Gas Chromatography/Mass Spectrome**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Dibromochloromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Dibromomethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Dichlorodifluoromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Ethylbenzene	0.500	U	0.500	0.150	ug/L	1	(<700)	07/03/15 05:38
Hexachlorobutadiene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Isopropylbenzene (Cumene)	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Methylene chloride	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:38
Methyl-t-butyl ether	1.00	U	1.00	0.500	ug/L	1		07/03/15 05:38
Naphthalene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
n-Butylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
n-Propylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
o-Xylene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
P & M -Xylene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
sec-Butylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Styrene	0.500	U	0.500	0.150	ug/L	1	(<100)	07/03/15 05:38
tert-Butylbenzene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Tetrachloroethene	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:38
Toluene	0.500	U	0.500	0.150	ug/L	1	(<1000)	07/03/15 05:38
Total Trihalomethanes	2.00	U	2.00	0.600	ug/L	1	(<80)	07/03/15 05:38
trans-1,2-Dichloroethene	0.500	U	0.500	0.150	ug/L	1	(<100)	07/03/15 05:38
trans-1,3-Dichloropropene	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Trichloroethene	0.500	U	0.500	0.150	ug/L	1	(<5)	07/03/15 05:38
Trichlorofluoromethane	0.500	U	0.500	0.150	ug/L	1		07/03/15 05:38
Vinyl chloride	0.400	U	0.400	0.120	ug/L	1	(<2)	07/03/15 05:38
Xylenes (total)	0.500	U	0.500	0.150	ug/L	1	(<10000)	07/03/15 05:38
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		70-130		%	1		07/03/15 05:38
4-Bromofluorobenzene (surr)	99.9		70-130		%	1		07/03/15 05:38
Toluene-d8 (surr)	98.5		70-130		%	1		07/03/15 05:38

Batch Information

Analytical Batch: VMS15070
Analytical Method: EPA 524.2
Analyst: NRB
Analytical Date/Time: 07/03/15 05:38
Container ID: 1153342008-A

Prep Batch: VXX27530
Prep Method: SW5030B
Prep Date/Time: 07/03/15 00:01
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/21/2015 2:15:58PM

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **4748 Old Seward Highway**
Lab Sample ID: 1153342009
Lab Project ID: 1153342

Collection Date: 06/30/15 12:47
Received Date: 07/02/15 09:54
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.100	U	0.100	0.0310	mg/L	1		07/07/15 19:02
Surrogates								
4-Bromofluorobenzene (surr)	106		50-150		%	1		07/07/15 19:02

Batch Information

Analytical Batch: VFC12507
Analytical Method: AK101
Analyst: CRD
Analytical Date/Time: 07/07/15 19:02
Container ID: 1153342009-B

Prep Batch: VXX27546
Prep Method: SW5030B
Prep Date/Time: 07/07/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.500	U	0.500	0.150	ug/L	1		07/07/15 19:02
Ethylbenzene	1.00	U	1.00	0.310	ug/L	1		07/07/15 19:02
o-Xylene	1.00	U	1.00	0.310	ug/L	1		07/07/15 19:02
P & M -Xylene	2.00	U	2.00	0.620	ug/L	1		07/07/15 19:02
Toluene	1.00	U	1.00	0.310	ug/L	1		07/07/15 19:02
Surrogates								
1,4-Difluorobenzene (surr)	83.6		77-115		%	1		07/07/15 19:02

Batch Information

Analytical Batch: VFC12507
Analytical Method: SW8021B
Analyst: CRD
Analytical Date/Time: 07/07/15 19:02
Container ID: 1153342009-B

Prep Batch: VXX27546
Prep Method: SW5030B
Prep Date/Time: 07/07/15 08:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1712340 [VXX/27530]
Blank Lab ID: 1274936

Matrix: Drinking Water

QC for Samples:
1153342007, 1153342008

Results by **EPA 524.2**

Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.250U	0.500	0.150	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.250U	0.500	0.150	ug/L
1,1-Dichloroethane	0.250U	0.500	0.150	ug/L
1,1-Dichloroethene	0.250U	0.500	0.150	ug/L
1,1-Dichloropropene	0.250U	0.500	0.150	ug/L
1,2,3-Trichlorobenzene	0.250U	0.500	0.150	ug/L
1,2,3-Trichloropropane	0.250U	0.500	0.180	ug/L
1,2,4-Trichlorobenzene	0.250U	0.500	0.150	ug/L
1,2,4-Trimethylbenzene	0.250U	0.500	0.150	ug/L
1,2-Dibromo-3-chloropropane	1.00U	2.00	0.620	ug/L
1,2-Dibromoethane	0.250U	0.500	0.150	ug/L
1,2-Dichlorobenzene	0.250U	0.500	0.150	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.250U	0.500	0.150	ug/L
1,3,5-Trimethylbenzene	0.250U	0.500	0.150	ug/L
1,3-Dichlorobenzene	0.250U	0.500	0.150	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.250U	0.500	0.150	ug/L
2-Chlorotoluene	0.250U	0.500	0.150	ug/L
4-Chlorotoluene	0.250U	0.500	0.150	ug/L
4-Isopropyltoluene	0.250U	0.500	0.150	ug/L
Benzene	0.250U	0.500	0.150	ug/L
Bromobenzene	0.250U	0.500	0.150	ug/L
Bromochloromethane	0.250U	0.500	0.150	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.250U	0.500	0.150	ug/L
Bromomethane	1.00U	2.00	0.620	ug/L
Carbon tetrachloride	0.250U	0.500	0.150	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.250U	0.500	0.150	ug/L
Chloromethane	0.250U	0.500	0.150	ug/L
cis-1,2-Dichloroethene	0.250U	0.500	0.150	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L

Method Blank

Blank ID: MB for HBN 1712340 [VXX/27530]
Blank Lab ID: 1274936

Matrix: Drinking Water

QC for Samples:
1153342007, 1153342008

Results by **EPA 524.2**

Parameter	Results	LOQ/CL	DL	Units
Dibromomethane	0.250U	0.500	0.150	ug/L
Dichlorodifluoromethane	0.250U	0.500	0.150	ug/L
Ethylbenzene	0.250U	0.500	0.150	ug/L
Hexachlorobutadiene	0.250U	0.500	0.150	ug/L
Isopropylbenzene (Cumene)	0.250U	0.500	0.150	ug/L
Methylene chloride	0.250U	0.500	0.150	ug/L
Methyl-t-butyl ether	0.500U	1.00	0.500	ug/L
Naphthalene	0.250U	0.500	0.150	ug/L
n-Butylbenzene	0.250U	0.500	0.150	ug/L
n-Propylbenzene	0.250U	0.500	0.150	ug/L
o-Xylene	0.250U	0.500	0.150	ug/L
P & M -Xylene	0.250U	0.500	0.150	ug/L
sec-Butylbenzene	0.250U	0.500	0.150	ug/L
Styrene	0.250U	0.500	0.150	ug/L
tert-Butylbenzene	0.250U	0.500	0.150	ug/L
Tetrachloroethene	0.250U	0.500	0.150	ug/L
Toluene	0.250U	0.500	0.150	ug/L
trans-1,2-Dichloroethene	0.250U	0.500	0.150	ug/L
trans-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Trichloroethene	0.250U	0.500	0.150	ug/L
Trichlorofluoromethane	0.250U	0.500	0.150	ug/L
Vinyl chloride	0.200U	0.400	0.120	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	106	70-130		%
4-Bromofluorobenzene (surr)	96.4	70-130		%
Toluene-d8 (surr)	98.4	70-130		%

Batch Information

Analytical Batch: VMS15070
Analytical Method: EPA 524.2
Instrument: VPA 780/5975 GC/MS
Analyst: NRB
Analytical Date/Time: 7/3/2015 1:05:00AM

Prep Batch: VXX27530
Prep Method: SW5030B
Prep Date/Time: 7/3/2015 12:01:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [VXX27530]
Blank Spike Lab ID: 1274937
Date Analyzed: 07/03/2015 01:43

Spike Duplicate ID: LCSD for HBN 1153342 [VXX27530]
Spike Duplicate Lab ID: 1274938
Matrix: Drinking Water

QC for Samples: 1153342007, 1153342008

Results by **EPA 524.2**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	31.8	106	30	33.3	111	(70-130)	4.80	(< 30)
1,1,1-Trichloroethane	30	34.9	116	30	35.3	118	(70-130)	0.94	(< 30)
1,1,2,2-Tetrachloroethane	30	29.6	99	30	30.3	101	(70-130)	2.00	(< 30)
1,1,2-Trichloroethane	30	29.9	100	30	30.7	102	(70-130)	2.50	(< 30)
1,1-Dichloroethane	30	31.8	106	30	32.5	108	(70-130)	2.20	(< 30)
1,1-Dichloroethene	30	32.0	107	30	33.0	110	(70-130)	3.20	(< 30)
1,1-Dichloropropene	30	34.6	115	30	35.3	118	(70-130)	1.90	(< 30)
1,2,3-Trichlorobenzene	30	33.1	110	30	33.6	112	(70-130)	1.30	(< 30)
1,2,3-Trichloropropane	30	28.5	95	30	29.4	98	(70-130)	3.10	(< 30)
1,2,4-Trichlorobenzene	30	33.9	113	30	34.4	115	(70-130)	1.20	(< 30)
1,2,4-Trimethylbenzene	30	34.0	113	30	34.2	114	(70-130)	0.82	(< 30)
1,2-Dibromo-3-chloropropane	30	29.9	100	30	30.2	101	(70-130)	1.20	(< 30)
1,2-Dibromoethane	30	31.8	106	30	32.2	107	(70-130)	1.20	(< 30)
1,2-Dichlorobenzene	30	31.6	105	30	31.6	105	(70-130)	0.00	(< 30)
1,2-Dichloroethane	30	32.6	109	30	33.0	110	(70-130)	1.30	(< 30)
1,2-Dichloropropane	30	32.1	107	30	33.1	110	(70-130)	3.10	(< 30)
1,3,5-Trimethylbenzene	30	34.0	113	30	33.6	112	(70-130)	1.10	(< 30)
1,3-Dichlorobenzene	30	32.8	109	30	32.6	109	(70-130)	0.52	(< 30)
1,3-Dichloropropane	30	31.4	105	30	31.9	106	(70-130)	1.40	(< 30)
1,4-Dichlorobenzene	30	32.4	108	30	32.6	109	(70-130)	0.65	(< 30)
2,2-Dichloropropane	30	35.7	119	30	36.5	122	(70-130)	2.40	(< 30)
2-Chlorotoluene	30	32.4	108	30	32.5	108	(70-130)	0.15	(< 30)
4-Chlorotoluene	30	32.6	109	30	32.6	109	(70-130)	0.15	(< 30)
4-Isopropyltoluene	30	34.5	115	30	34.4	115	(70-130)	0.20	(< 30)
Benzene	30	32.8	109	30	33.2	111	(70-130)	1.30	(< 30)
Bromobenzene	30	32.2	107	30	32.2	107	(70-130)	0.06	(< 30)
Bromochloromethane	30	30.9	103	30	31.2	104	(70-130)	0.90	(< 30)
Bromodichloromethane	30	33.6	112	30	33.9	113	(70-130)	0.95	(< 30)
Bromoform	30	32.1	107	30	33.0	110	(70-130)	2.80	(< 30)
Bromomethane	30	27.0	90	30	30.6	102	(70-130)	12.50	(< 30)
Carbon tetrachloride	30	35.3	118	30	35.8	119	(70-130)	1.50	(< 30)
Chlorobenzene	30	32.2	107	30	32.9	110	(70-130)	2.10	(< 30)
Chloroethane	30	28.1	94	30	29.4	98	(70-130)	4.50	(< 30)
Chloroform	30	32.3	108	30	32.8	109	(70-130)	1.70	(< 30)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [VXX27530]
Blank Spike Lab ID: 1274937
Date Analyzed: 07/03/2015 01:43

Spike Duplicate ID: LCSD for HBN 1153342 [VXX27530]
Spike Duplicate Lab ID: 1274938
Matrix: Drinking Water

QC for Samples: 1153342007, 1153342008

Results by **EPA 524.2**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Chloromethane	30	26.2	87	30	31.8	106	(70-130)	19.50	(< 30)
cis-1,2-Dichloroethene	30	31.5	105	30	32.5	108	(70-130)	3.30	(< 30)
cis-1,3-Dichloropropene	30	33.7	112	30	34.2	114	(70-130)	1.40	(< 30)
Dibromochloromethane	30	32.8	109	30	32.9	110	(70-130)	0.43	(< 30)
Dibromomethane	30	31.8	106	30	33.0	110	(70-130)	3.50	(< 30)
Dichlorodifluoromethane	30	32.8	109	30	33.6	112	(70-130)	2.40	(< 30)
Ethylbenzene	30	32.7	109	30	33.2	111	(70-130)	1.60	(< 30)
Hexachlorobutadiene	30	33.8	113	30	34.0	113	(70-130)	0.77	(< 30)
Isopropylbenzene (Cumene)	30	34.6	115	30	35.1	117	(70-130)	1.30	(< 30)
Methylene chloride	30	26.6	89	30	27.6	92	(70-130)	3.50	(< 30)
Methyl-t-butyl ether	45	47.8	106	45	49.1	109	(70-130)	2.70	(< 30)
Naphthalene	30	32.7	109	30	33.6	112	(70-130)	2.80	(< 30)
n-Butylbenzene	30	35.8	119	30	36.1	120	(70-130)	0.97	(< 30)
n-Propylbenzene	30	33.7	112	30	33.6	112	(70-130)	0.09	(< 30)
o-Xylene	30	32.9	110	30	32.9	110	(70-130)	0.21	(< 30)
P & M -Xylene	60	67.2	112	60	67.2	112	(70-130)	0.07	(< 30)
sec-Butylbenzene	30	34.1	114	30	34.2	114	(70-130)	0.20	(< 30)
Styrene	30	33.8	113	30	33.8	113	(70-130)	0.06	(< 30)
tert-Butylbenzene	30	33.9	113	30	34.1	114	(70-130)	0.74	(< 30)
Tetrachloroethene	30	34.0	113	30	34.7	116	(70-130)	2.00	(< 30)
Toluene	30	31.1	104	30	32.3	108	(70-130)	3.80	(< 30)
trans-1,2-Dichloroethene	30	32.1	107	30	32.5	108	(70-130)	1.40	(< 30)
trans-1,3-Dichloropropene	30	33.5	112	30	34.0	113	(70-130)	1.60	(< 30)
Trichloroethene	30	33.8	113	30	34.4	115	(70-130)	1.90	(< 30)
Trichlorofluoromethane	30	35.0	117	30	35.6	119	(70-130)	1.70	(< 30)
Vinyl chloride	30	32.1	107	30	33.4	111	(70-130)	3.90	(< 30)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	100	100	30	100	100	(70-130)	0.33	
4-Bromofluorobenzene (surr)	30	101	101	30	99.8	100	(70-130)	0.96	
Toluene-d8 (surr)	30	98.6	99	30	100	100	(70-130)	1.60	

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [VXX27530]
Blank Spike Lab ID: 1274937
Date Analyzed: 07/03/2015 01:43

Spike Duplicate ID: LCSD for HBN 1153342 [VXX27530]
Spike Duplicate Lab ID: 1274938
Matrix: Drinking Water

QC for Samples: 1153342007, 1153342008

Results by **EPA 524.2**

Parameter	Blank Spike (%) Spike	Result	Rec (%)	Spike Duplicate (%) Spike	Result	Rec (%)	CL	RPD (%)	RPD CL

Batch Information

Analytical Batch: **VMS15070**
Analytical Method: **EPA 524.2**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **NRB**

Prep Batch: **VXX27530**
Prep Method: **SW5030B**
Prep Date/Time: **07/03/2015 00:01**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 07/21/2015 2:16:02PM

Method Blank

Blank ID: MB for HBN 1712653 [VXX/27540]
Blank Lab ID: 1275305

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1153342001, 1153342002, 1153342003, 1153342004

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.000250U	0.000500	0.000150	mg/L
Ethylbenzene	0.000500U	0.00100	0.000310	mg/L
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
o-Xylene	0.000500U	0.00100	0.000310	mg/L
P & M -Xylene	0.00100U	0.00200	0.000620	mg/L
Toluene	0.000500U	0.00100	0.000310	mg/L
Surrogates				
1,4-Difluorobenzene (surr)	80.3	77-115		%
4-Bromofluorobenzene (surr)	106	50-150		%

Batch Information

Analytical Batch: VFC12505
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 7/6/2015 10:42:00AM

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 7/6/2015 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [VXX27540]
Blank Spike Lab ID: 1275306
Date Analyzed: 07/06/2015 11:20

Spike Duplicate ID: LCSD for HBN 1153342 [VXX27540]
Spike Duplicate Lab ID: 1275307
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1153342001, 1153342002, 1153342003, 1153342004

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	0.100	0.0993	99	0.100	0.0992	99	(80-120)	0.10	(< 20)
Ethylbenzene	0.100	0.103	103	0.100	0.106	106	(75-125)	3.30	(< 20)
o-Xylene	0.100	0.103	103	0.100	0.108	108	(80-120)	4.00	(< 20)
P & M -Xylene	0.200	0.206	103	0.200	0.215	108	(75-130)	4.40	(< 20)
Toluene	0.100	0.101	101	0.100	0.105	105	(75-120)	3.60	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	0.0500	94.5	95	0.0500	99.6	100	(77-115)	5.30	

Batch Information

Analytical Batch: **VFC12505**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **CRD**

Prep Batch: **VXX27540**
Prep Method: **SW5030B**
Prep Date/Time: **07/06/2015 08:00**
Spike Init Wt./Vol.: 0.100 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 0.100 mg/L Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [VXX27540]
Blank Spike Lab ID: 1275308
Date Analyzed: 07/06/2015 11:39

Spike Duplicate ID: LCSD for HBN 1153342 [VXX27540]
Spike Duplicate Lab ID: 1275309
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1153342001, 1153342002, 1153342003, 1153342004

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.986	99	1.00	1.01	101	(60-120)	2.70	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	107	107	0.0500	105	105	(50-150)	1.10	

Batch Information

Analytical Batch: **VFC12505**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **CRD**

Prep Batch: **VXX27540**
Prep Method: **SW5030B**
Prep Date/Time: **07/06/2015 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

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Billable Matrix Spike Summary

Original Sample ID: 1153093002
MS Sample ID: 1153093003 BMS
MSD Sample ID: 1153093004 BMSD

Analysis Date: 07/06/2015 12:37
Analysis Date: 07/06/2015 12:56
Analysis Date: 07/06/2015 13:15
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1153342001, 1153342002, 1153342003, 1153342004

Results by **AK101**

		Matrix Spike (mg/L)				Spike Duplicate (mg/L)					
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)		CL	RPD (%)	RPD CL
Gasoline Range Organics	1.19	1.00	2.04	86		1.00	2.03	85		60-120	0.41	(< 20)
Surrogates												
4-Bromofluorobenzene (surr)		0.0500	0.100	200	*	0.0500	0.101	201	*	50-150	0.71	

Batch Information

Analytical Batch: VFC12505
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 7/6/2015 12:56:00PM

Prep Batch: VXX27540
Prep Method: Volatile Fuels Extraction (W)
Prep Date/Time: 7/6/2015 8:00:00AM
Prep Initial Wt./Vol.: 5.00mL
Prep Extract Vol: 5.00mL

Print Date: 07/21/2015 2:16:06PM

Method Blank

Blank ID: MB for HBN 1712653 [VXX/27540]
Blank Lab ID: 1275305

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1153342001, 1153342002, 1153342003, 1153342004

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
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 (surr)	80.3	77-115		%

Batch Information

Analytical Batch: VFC12505
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 7/6/2015 10:42:00AM

Prep Batch: VXX27540
Prep Method: SW5030B
Prep Date/Time: 7/6/2015 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [VXX27540]
Blank Spike Lab ID: 1275306
Date Analyzed: 07/06/2015 11:20

Spike Duplicate ID: LCSD for HBN 1153342 [VXX27540]
Spike Duplicate Lab ID: 1275307
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1153342001, 1153342002, 1153342003, 1153342004

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	99.3	99	100	99.2	99	(80-120)	0.10	(< 20)
Ethylbenzene	100	103	103	100	106	106	(75-125)	3.30	(< 20)
o-Xylene	100	103	103	100	108	108	(80-120)	4.00	(< 20)
P & M -Xylene	200	206	103	200	215	108	(75-130)	4.40	(< 20)
Toluene	100	101	101	100	105	105	(75-120)	3.60	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	94.5	95	50	99.6	100	(77-115)	5.30	

Batch Information

Analytical Batch: **VFC12505**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890A PID/FID**
Analyst: **CRD**

Prep Batch: **VXX27540**
Prep Method: **SW5030B**
Prep Date/Time: **07/06/2015 08:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1712748 [VXX/27546]
Blank Lab ID: 1275537

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1153342005, 1153342006, 1153342009

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	104	50-150		%

Batch Information

Analytical Batch: VFC12507
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 7/7/2015 4:49:00PM

Prep Batch: VXX27546
Prep Method: SW5030B
Prep Date/Time: 7/7/2015 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [VXX27546]
Blank Spike Lab ID: 1275540
Date Analyzed: 07/07/2015 17:46

Spike Duplicate ID: LCSD for HBN 1153342 [VXX27546]
Spike Duplicate Lab ID: 1275541
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1153342005, 1153342006, 1153342009

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	1.02	102	1.00	0.980	98	(60-120)	3.70	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	107	107	0.0500	107	107	(50-150)	0.80	

Batch Information

Analytical Batch: **VFC12507**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **CRD**

Prep Batch: **VXX27546**
Prep Method: **SW5030B**
Prep Date/Time: **07/07/2015 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

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Method Blank

Blank ID: MB for HBN 1712748 [VXX/27546]
Blank Lab ID: 1275537

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1153342005, 1153342006, 1153342009

Results by **SW8021B**

Parameter	Results	LOQ/CL	DL	Units
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 (surr)	83.2	77-115		%

Batch Information

Analytical Batch: VFC12507
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: CRD
Analytical Date/Time: 7/7/2015 4:49:00PM

Prep Batch: VXX27546
Prep Method: SW5030B
Prep Date/Time: 7/7/2015 8:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/21/2015 2:16:12PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [VXX27546]
Blank Spike Lab ID: 1275538
Date Analyzed: 07/07/2015 17:27

Spike Duplicate ID: LCSD for HBN 1153342 [VXX27546]
Spike Duplicate Lab ID: 1275539
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1153342005, 1153342006, 1153342009

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	98.1	98	100	96.2	96	(80-120)	1.90	(< 20)
Ethylbenzene	100	104	104	100	100	100	(75-125)	3.50	(< 20)
o-Xylene	100	105	105	100	101	101	(80-120)	3.40	(< 20)
P & M -Xylene	200	210	105	200	203	101	(75-130)	3.50	(< 20)
Toluene	100	101	101	100	99.0	99	(75-120)	2.30	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	94.6	95	50	98.8	99	(77-115)	4.40	

Batch Information

Analytical Batch: **VFC12507**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890A PID/FID**
Analyst: **CRD**

Prep Batch: **VXX27546**
Prep Method: **SW5030B**
Prep Date/Time: **07/07/2015 08:00**
Spike Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 100 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1712836 [XXX/33495]
Blank Lab ID: 1275742

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1153342001, 1153342002, 1153342003, 1153342004, 1153342005, 1153342006

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	99.4	60-120		%

Batch Information

Analytical Batch: XFC11935
Analytical Method: AK102
Instrument: HP 7890A FID SV E F
Analyst: NLL
Analytical Date/Time: 7/12/2015 11:59:00AM

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 7/9/2015 9:55:04AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [XXX33495]
Blank Spike Lab ID: 1275743
Date Analyzed: 07/12/2015 12:20

Spike Duplicate ID: LCSD for HBN 1153342 [XXX33495]
Spike Duplicate Lab ID: 1275744
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1153342001, 1153342002, 1153342003, 1153342004, 1153342005, 1153342006

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	21.7	108	20	23.0	115	(75-125)	5.80	(< 20)
Surrogates									
5a Androstane (surr)	0.4	105	105	0.4	118	118	(60-120)	11.80	

Batch Information

Analytical Batch: **XFC11935**
Analytical Method: **AK102**
Instrument: **HP 7890A FID SV E F**
Analyst: **NLL**

Prep Batch: **XXX33495**
Prep Method: **SW3520C**
Prep Date/Time: **07/09/2015 09:55**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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Method Blank

Blank ID: MB for HBN 1712836 [XXX/33495]
Blank Lab ID: 1275742

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1153342001, 1153342002, 1153342003, 1153342004, 1153342005, 1153342006

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	83.5	60-120		%

Batch Information

Analytical Batch: XFC11935
Analytical Method: AK103
Instrument: HP 7890A FID SV E F
Analyst: NLL
Analytical Date/Time: 7/12/2015 11:59:00AM

Prep Batch: XXX33495
Prep Method: SW3520C
Prep Date/Time: 7/9/2015 9:55:04AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1153342 [XXX33495]
Blank Spike Lab ID: 1275743
Date Analyzed: 07/12/2015 12:20

Spike Duplicate ID: LCSD for HBN 1153342 [XXX33495]
Spike Duplicate Lab ID: 1275744
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1153342001, 1153342002, 1153342003, 1153342004, 1153342005, 1153342006

Results by **AK103**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	20	14.9	74	20	16.0	80	(60-120)	7.70	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4	103	103	0.4	114	114	(60-120)	10.20	

Batch Information

Analytical Batch: **XFC11935**
Analytical Method: **AK103**
Instrument: **HP 7890A FID SV E F**
Analyst: **NLL**

Prep Batch: **XXX33495**
Prep Method: **SW3520C**
Prep Date/Time: **07/09/2015 09:55**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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SGS **1153342**

SGS North America Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide

Alaska	Maryland
New Jersey	New York
North Carolina	Indiana
West Virgina	Kentucky

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Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis.

Section 1

CLIENT: BGES

CONTACT: Jayne Martin — PHONE #: 644-2900

PROJECT NAME: 4748 Old Seward Highway — Project/ PWSID/ PERMIT#: —

REPORTS TO: Jayne — E-MAIL: jayne@bgesinc.com

INVOICE TO: BGES — QUOTE #: 10772A — P.O. #: —

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Pres: Type: Comp Grab MI (Multi-incre-mental)	Preservative: HCl AK101/SW8021B GRO/BTEX	Preservative: HCl AK102/103 - DRO/RRO	Preservative: HCl EPA 524.2 - VOC	REMARKS/ LOC ID
(1) A-E	MW5-0630	6/30/15	16:53	WATER	5	G	X	X		
(2) A-E	MW8-0630	6/30/15	12:47	WATER	5	G	X	X		
(3) A-E	MW9-0702	7/2/15	08:55	WATER	5	G	X	X		
(4) A-E	MW12-0630	6/30/15	11:25	WATER	5	G	X	X		
(5) A-E	MW14-0630	6/30/15	15:37	WATER	5	G	X	X		
(6) A-E	MW6R-0630	6/30/15	15:40	WATER	5	G	X	X		
(7) A-C	WSW1-0701	7/1/15	12:15	WATER	3	G			X	
(8) A-C	Trip Blank	—	—	WATER	1	—	X			
(9) A-C	Trip Blank	—	—	WATER	1	—			X	

Section 5

	Date	Time	
Relinquished By: (1)	7-2-15	9:54	Received By:
Relinquished By: (2)			Received By:
Relinquished By: (3)			Received By:
Relinquished By: (4)	7/2/15	0954	Received For Laboratory By:

Section 4

DOD Project? Yes (No)

Cooler ID: _____

Data Deliverable Requirements: Level 2

Requested Turnaround Time and/or Special Instructions: standard 10-day

Temp Blank °C: 0.2 /240

or Ambient [ ]

(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)

INTACT BROKEN (ABSENT)

(See attached Sample Receipt Form)

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

1153342

SAMPLE RECEIPT FORM

Review Criteria:	Yes	N/A	No	Comments/Action Taken:
Were **custody seals** intact? Note # & location, if applicable. COC accompanied samples?	☐ ☑	☑ ☐	☐ ☐	***Exemption permitted if sampler hand carries/delivers.***
Temperature blank compliant* (i.e., 0-6°C after CF)? *If >6 °C, were samples collected <8 hours ago?* *If <0 °C, were all sample containers ice free?* Cooler ID: [1] _____ @ 0.2 _____ w/ Therm.ID: 240 _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ If samples are received without 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 nor cooler temp can be obtained, note "ambient" or "chilled."	☑ ☐ ☐	☐ ☑ ☑	☐ ☐ ☐	***Exemption permitted if chilled & collected <8 hrs ago.*** ***Note: Identify containers received at non-compliant temperature. Use form FS-0029 if more space is needed.***
Delivery method (specify all that apply): ☑Client (hand carried) ☐USPS ☐Lynden ☐AK Air ☐Alert Courier ☐UPS ☐FedEx ☐RAVN ☐C&D Delivery ☐Carlile ☐Pen Air ☐Warp Speed ☐Other: _____ → *For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?*	☐	☑	☐	
	Yes	N/A	No	
Were samples received within hold time? Do samples **match COC*** (i.e., sample IDs, dates/times collected)? Were analyses requested unambiguous?	☑ ☑ ☑	☐ ☐ ☐	☐ ☐ ☐	***Note: Refer to form F-083 "Sample Guide" for hold times.*** ***Note: If times differ <1hr, record details and login per COC.***
Were samples in **good condition** (no leaks/cracks/breakage)? Packing material used (specify all that apply): ☑Bubble Wrap ☐Separate plastic bags ☐Vermiculite ☐Other:	☑	☐	☐	
Were **proper containers** (type/mass/volume/preservative*) used? Were **Trip Blanks** (i.e., VOAs, LL-Hg) in cooler with samples? Were all VOA vials **free of headspace** (i.e., bubbles ≤6 mm)? Were all soil VOAs **field extracted** with MeOH+BFB?	☑ ☑ ☐ ☐	☐ ☐ ☐ ☑	☐ ☐ ☑ ☐	☐ ***Exemption permitted for metals (e.g., 200.8/6020A).*** Sample 1153342001-E contained a bubble >6mm.
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)?	☑ ☐	☐ ☑	☐ ☐	
For **special handling** (e.g., "MI" soils, foreign soils, lab filter for dissolved…, lab extract for volatiles, Ref Lab, limited volume), were bottles/paperwork flagged (e.g., sticker)?	☐	☑	☐	
For **RUSH/SHORT Hold Time**, were COC/Bottles flagged accordingly? Was Rush/Short HT email sent, if applicable?	☐	☑	☐	
For **SITE-SPECIFIC QC, e.g. BMS/BMSD/BDUP**, were containers / paperwork flagged accordingly?	☐	☑	☐	
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	☐	☑	☐	SRF Completed by: VDL 7/2/15 PM notified:
Was **PEER REVIEW** of ***sample numbering/labeling completed?***	☑	☐	☐	Peer Reviewed by: HAH
Additional notes (if applicable):				

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

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1153342001-A	HCL to pH < 2	OK			
1153342001-B	HCL to pH < 2	OK			
1153342001-C	HCL to pH < 2	OK			
1153342001-D	HCL to pH < 2	OK			
1153342001-E	HCL to pH < 2	OK			
1153342002-A	HCL to pH < 2	OK			
1153342002-B	HCL to pH < 2	OK			
1153342002-C	HCL to pH < 2	OK			
1153342002-D	HCL to pH < 2	OK			
1153342002-E	HCL to pH < 2	OK			
1153342003-A	HCL to pH < 2	OK			
1153342003-B	HCL to pH < 2	OK			
1153342003-C	HCL to pH < 2	OK			
1153342003-D	HCL to pH < 2	OK			
1153342003-E	HCL to pH < 2	OK			
1153342004-A	HCL to pH < 2	OK			
1153342004-B	HCL to pH < 2	OK			
1153342004-C	HCL to pH < 2	OK			
1153342004-D	HCL to pH < 2	OK			
1153342004-E	HCL to pH < 2	OK			
1153342005-A	HCL to pH < 2	OK			
1153342005-B	HCL to pH < 2	OK			
1153342005-C	HCL to pH < 2	OK			
1153342005-D	HCL to pH < 2	OK			
1153342005-E	HCL to pH < 2	OK			
1153342006-A	HCL to pH < 2	OK			
1153342006-B	HCL to pH < 2	OK			
1153342006-C	HCL to pH < 2	OK			
1153342006-D	HCL to pH < 2	OK			
1153342006-E	HCL to pH < 2	OK			
1153342007-A	HCL to pH < 2	OK			
1153342007-B	HCL to pH < 2	OK			
1153342007-C	HCL to pH < 2	OK			
1153342008-A	HCL to pH < 2	OK			
1153342008-B	HCL to pH < 2	OK			
1153342008-C	HCL to pH < 2	OK			
1153342009-A	HCL to pH < 2	OK			
1153342009-B	HCL to pH < 2	OK			
1153342009-C	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

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: **William Schmaltz**

Title: **Environmental Scientist** Date: **11/3/2015**

CS Report Name: **Groundwater Monitoring Report (June/July 2015)** Report Date: **November 2015**

Consultant Firm: **BGES, Inc.**

Laboratory Name: **SGS, North America Inc.** Laboratory Report Number: **1153342**

ADEC File Number: **2100.26.252** ADEC RecKey Number: **N/A**

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° ± 2° C)?
      Yes (No) NA (Please explain.) Comments:

      The temperature of the sample cooler that contained the water samples was measures at the laboratory at the time of receipt to be 0.2 degrees Celsius. The temperature in the cooler was below the prescribed, optimal temperature range of 4 degrees Celsius +/- 2 degrees. However, because the recorded temperature was 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 quality control 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:

One of the three sample jars collected for volatile organic analyses for Field Sample MW5-0630 contained an air bubble greater than 6 millimeters in diameter (headspace). However, since there were two other jars collected as part of this sample and were utilized for analysis of this sample, it is our opinion that this quality control failure does not affect the acceptability of the data for its intended use. No other unusual sample conditions were noted by the laboratory at the time of their receipt.

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:

See 3a above.

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:

The percent recovery of 4-bromofluorobenzene, associated with the analysis of GRO within the Matrix Spike and Matrix Spike Duplicate samples exceeded the laboratory acceptance limit. This indicates a potential for the reported concentrations of GRO to be biased high in Field Samples MW5-0630, MW8-0630, MW9-0702, and MW12-0630. Because the Matrix Spike and Matrix Spike Duplicate samples were derived from a field sample collected as part of another project, it is our opinion that there is a potential for the data QC failure to be caused by matrix effects associated with soils different than those at the subject property. The case narrative indicated that this quality control failure was caused by matrix interference. For these reasons, it is our opinion that this QC failure does not affect the acceptability of the data for Field Samples MW5-0630, MW8-0630, MW9-0702, and MW12-0630 for their intended use.

c. Were all corrective actions documented?
(Yes) No NA (Please explain.) Comments:

See 4b, above.

d. What is the effect on data quality/usability according to the case narrative?
Comments:

See 4b, above.

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:

   No soil samples were analyzed for this laboratory work order.

   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?
   Comments:

   N/A

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:

See 6a, ii above.

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

Comments:

See 6a, ii, above.

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:

None of the water samples were analyzed for metals/inorganic for this laboratory work order.

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?

Comments:

N/A

vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes No (NA) (Please explain.) Comments:

See 6b, iii and iv, above.

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

N/A

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:

See 4b, above.

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:

See 4b, above.

iv. Data quality or usability affected? (Use the comment box to explain.)
Comments:
See 4b, above.

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

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:

All samples for volatile analysis were transported in the same cooler.

iii. All results less than PQL?

(Yes) No NA (Please explain.) Comments:

iv. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

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)

RPD (%) = 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:

Sample MW-6R 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 1 percent and 28 percent, which are 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, it is our opinion that good field sampling precision was achieved, and the data are acceptable for their intended use.

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

See 6e, iii, above.

Comments:

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

Yes No (NA) (Please explain.) Comments:

A decontamination or equipment blank was not collected as part of this project.

i. All results less than PQL?

Yes No (NA) (Please explain.) Comments:

A decontamination or equipment blank was not collected as part of this project.

ii. If above PQL, what samples are affected?

Comments:

N/A

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

Comments:

N/A

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

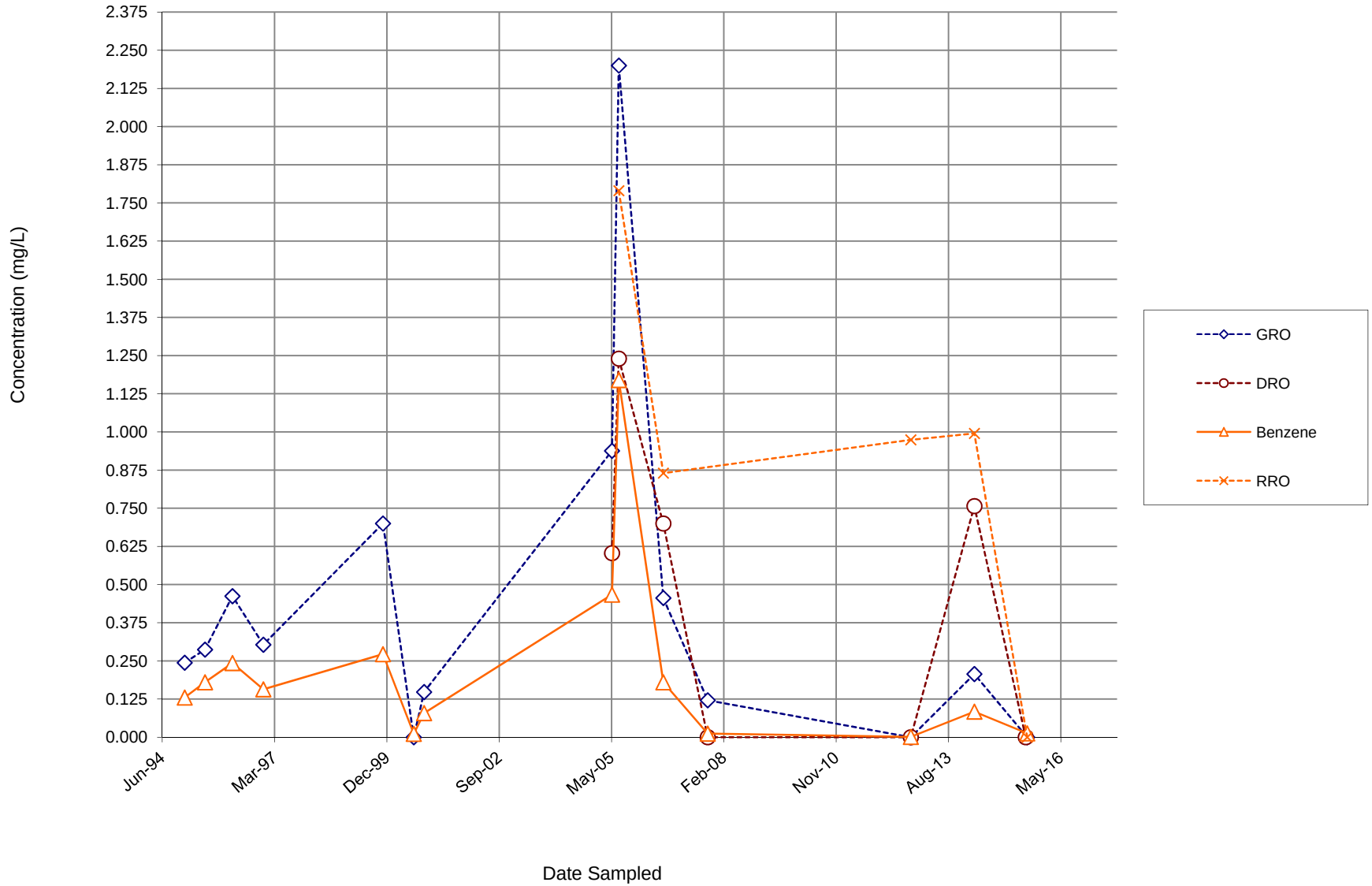
a. Defined and appropriate?

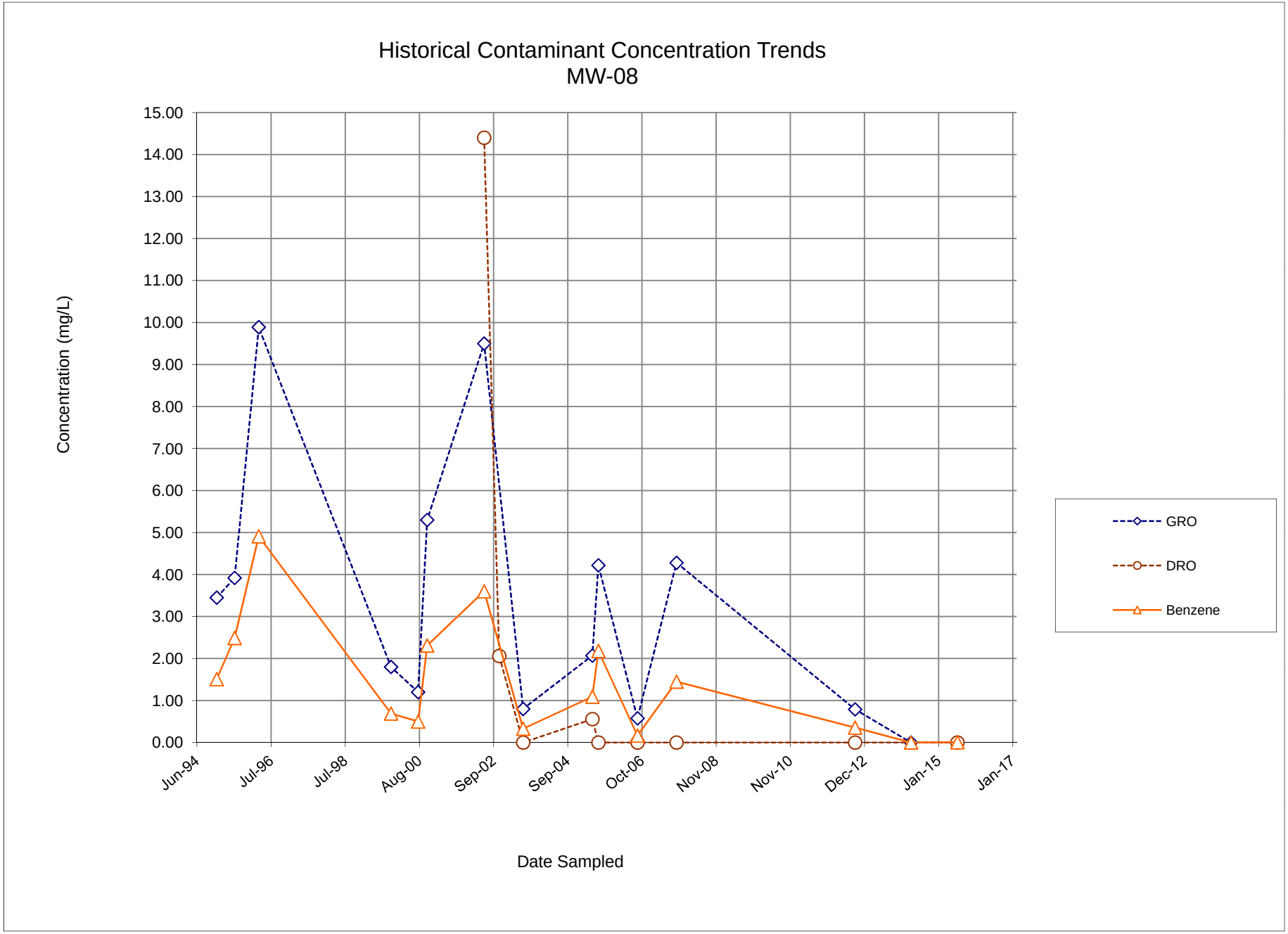
Yes No (NA) (Please explain.) Comments:

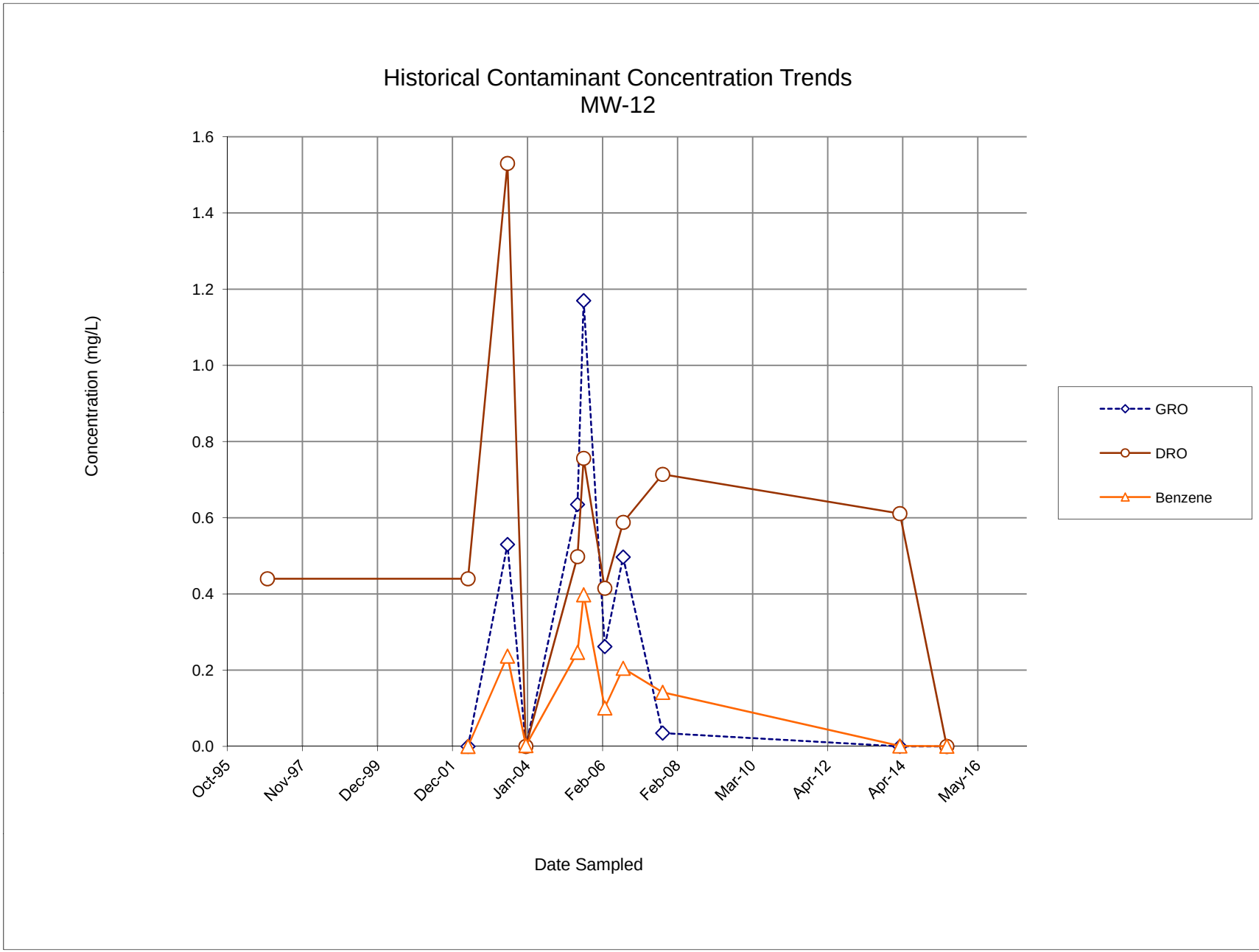
Not applicable for this project.

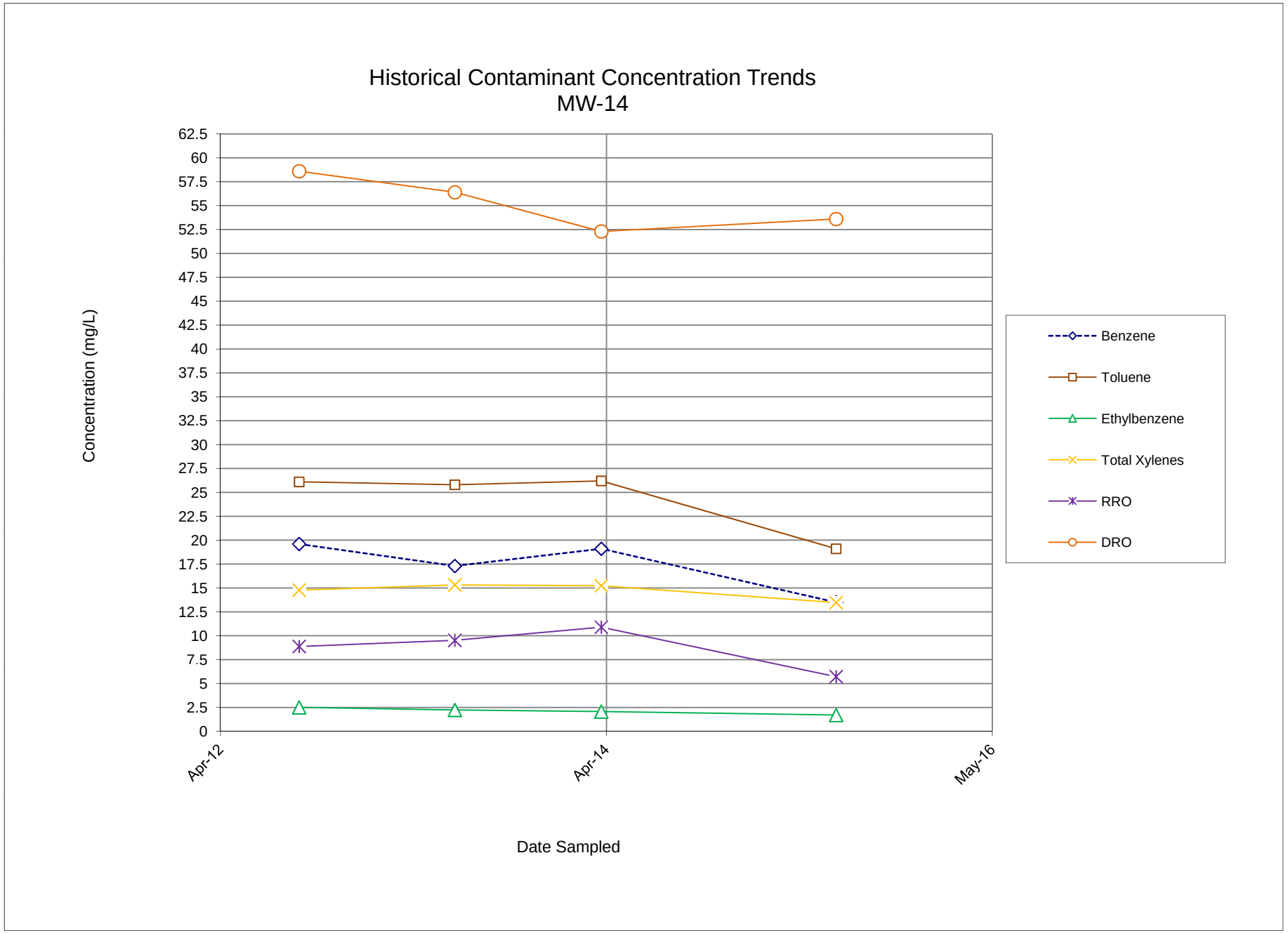
APPENDIX D
GRAPHS OF HISTORICAL WATER QUALITY DATA

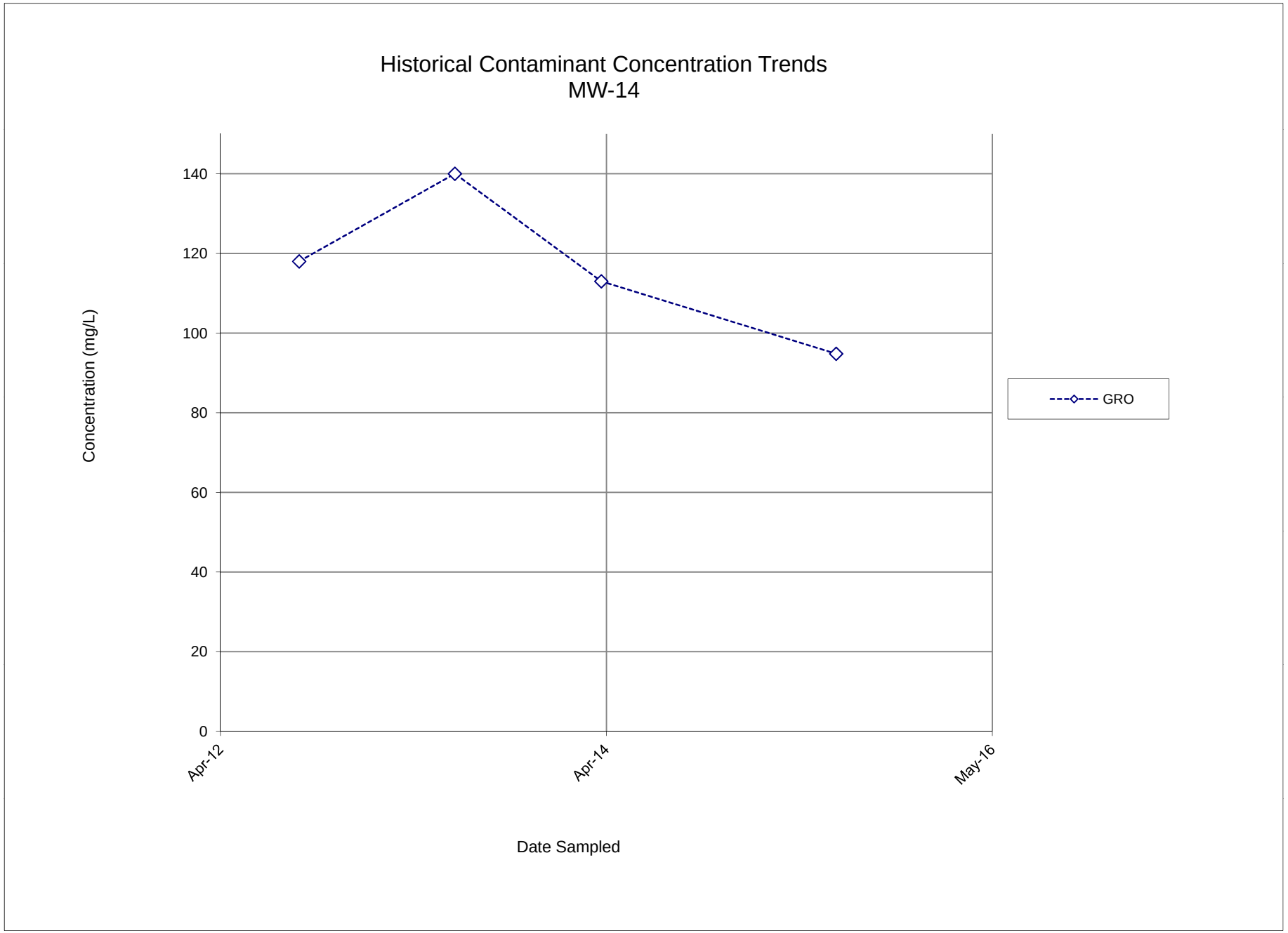
Historical Contaminant Concentration Trends
MW-05




Historical Contaminant Concentration Trends
MW-08
Concentration (mg/L)
15.00
14.00
13.00
12.00
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Jun-94
Jul-96
Jul-98
Aug-00
Sep-02
Sep-04
Oct-06
Nov-08
Nov-10
Dec-12
Jan-15
Jan-17
Date Sampled
GRO
DRO
Benzene


Historical Contaminant Concentration Trends
MW-12
Concentration (mg/L)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Oct-95
Nov-97
Dec-99
Dec-01
Jan-04
Feb-06
Feb-08
Mar-10
Apr-12
Apr-14
May-16
Date Sampled
GRO
DRO
Benzene


Historical Contaminant Concentration Trends
MW-14
Concentration (mg/L)
62.5
60
57.5
55
52.5
50
47.5
45
42.5
40
37.5
35
32.5
30
27.5
25
22.5
20
17.5
15
12.5
10
7.5
5
2.5
0
Apr-12
Apr-14
May-16
Date Sampled
Benzene
Toluene
Ethylbenzene
Total Xylenes
RRO
DRO


Historical Contaminant Concentration Trends
MW-14
Concentration (mg/L)
140
120
100
80
60
40
20
0
Apr-12
Apr-14
May-16
Date Sampled
GRO