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2019 Water Monitoring Report
Pump Station 1 Former Gasoline Tank Area

SLR Ref: 105.01288.19008

ADEC File Number: 330.38.019

December 2019

Alyeska pipeline SERVICE COMPANY

2019 Water Monitoring Report
Pump Station 1 Former Gasoline Tank Area

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ACRONYMS

1,2,4-TMB	1,2,4-trimethylbenzene
1,3,5-TMB	1,3,5-trimethylbenzene
±	plus or minus
°C	degrees Celsius
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
Alyeska	Alyeska Pipeline Service Company
AS	air sparging
AST	aboveground storage tank
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
COC	chain of custody
cy	cubic yards
DO	dissolved oxygen
DRO	diesel range organics
ft	feet
FGTA	Former Gasoline Tank Area
GRO	gasoline range organics
LOD	Limit of detection
LOQ	Limit of Quantification
mg/L	milligrams per liter
MNA	monitored natural attenuation
ND	Non-detect
ORP	oxidation-reduction potential
PAH	polynuclear aromatic hydrocarbons
PVC	polyvinyl chloride
PVOC	petroleum volatile organic compound
PS01	Pump Station 1
QA	quality assurance
QAR	quality assurance review
QC	quality control
redox	reduction-oxidation

ACRONYMS (CONTINUED)

SGS	SGS North America, Inc.
SLR	SLR International Corporation
SVE	soil vapor extraction
TAH	total aromatic hydrocarbons
TAqH	total aqueous hydrocarbons
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound

SUMMARY

SLR International Corporation (SLR) conducted groundwater and surface water sampling at the Pump Station 1 (PS01) Former Gasoline Tank Area (FGTA) (Site) in 2019 on behalf of Alyeska Pipeline Service Company (Alyeska). This sampling event was completed to evaluate the migration of dissolved petroleum hydrocarbons in suprapermafrost groundwater and to assess potential impacts to surface water adjacent to the site. In addition to water sampling, site activities also included completion of monitoring well repairs and elevation survey.

The groundwater analytical results indicate the presence of three distinct plumes: gasoline range organic compounds (GRO), diesel range organic compounds (DRO), and a combined plume of benzene, toluene, ethylbenzene, and xylenes (BTEX). The plumes are defined by contaminant concentrations exceeding the Alaska Department of Environmental Conservation (ADEC) groundwater cleanup levels implemented in 2018.

The number of cleanup level exceedances is the lowest since implementation of the latest cleanup levels as indicated by an evaluation of GRO, DRO, and BTEX plumes. The GRO, DRO, and BTEX plumes show an overall decrease in size, with generally lower exceedance concentrations at upgradient, plume edge, and downgradient wells. Recent data continues to indicate that the GRO, DRO, and BTEX plumes are decoupled from the historic FGTA source area and the GRO and BTEX plume may be slowly migrating towards the east.

Concentrations of petroleum volatile organic compounds (PVOCs) 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, and naphthalene exceeded cleanup levels in samples collected from 4 out of 17 monitoring wells, including MW-8, MW-9, MW-15, and MW-19. New PVOC exceedances were limited to naphthalene in MW-19. Well MW-9, in the center of the BTEX plume, is the well most affected by PVOCs as indicated by the highest analyte concentrations.

Surface water TAH and TAqH concentrations are below Alaska Water Quality Standards with DRO and BTEX plumes extending to the pad edge. These results are consistent with historical results, indicating that off-pad migration of contaminants to surface water is not occurring.

SLR and Alyeska recommend continued groundwater and surface water monitoring at the PS01 FGTA Site in 2020. Annual monitoring will continue to include sampling for PVOCs at all wells. A revised 2020-2021 multi-year work plan will be submitted to ADEC for review and approval prior to conducting Site work.

1 INTRODUCTION

SLR International Corporation (SLR) completed groundwater and surface water sampling at the Pump Station 1 (PS01) Former Gasoline Tank Area (FGTA) (Site) in 2019 on behalf of Alyeska Pipeline Service Company (Alyeska). A total of 17 groundwater monitoring wells (wells) and three surface water sampling locations were sampled.

1.1 PROJECT BACKGROUND

The PS01 FGTA Site has been the subject of multiple investigation, remediation, and monitoring activities following the documented release of 112 gallons of gasoline from an aboveground storage tank (AST) in 1992. The release was documented as Alyeska Spill Number 1992348.

The Site's physical setting, previous Site investigations, and the objectives of the work presented in this report are summarized in the following sections.

1.2 PHYSICAL SETTING

PS01 is located approximately 4.5 miles south of Prudhoe Bay and approximately 6 miles west of Deadhorse, Alaska (Figure 1). PS01 receives crude oil from the North Slope oil-producing fields and pumps it into the 800-mile Trans Alaska Pipeline System. Elevations of the local terrain surrounding the PS01 gravel pad range from 25 to 32 feet (ft) above mean sea level. The FGTA Site is located in the northeast corner of PS01 within the gravel containment area for the pump station tank farm (Figure 2).

1.2.1 GEOLOGY

The terrain in the vicinity of PS01 is characterized by typical North Slope tundra vegetation and permafrost features. The pump station is constructed over a former shallow lake bed, on a pad of sandy gravel fill 3 to 10.5 ft in depth. Native soils underneath the gravel pad include 2 to 4 inches of organic soil, followed by permanently frozen sandy silt. Prudhoe Bay is a region of continuous permafrost, extending as far as 2,000 ft below ground surface (bgs).

1.2.2 HYDROGEOLOGY

Groundwater conditions on the North Slope are controlled by the occurrence of permafrost and seasonal meltwater. The North Slope tundra environment is predominantly saturated with surface water during the summer and becomes ice-rich frozen ground at the onset of winter. Summer thawing creates a heterogeneous layer of suprapermafrost groundwater perched above the undulating frozen horizon, or active layer, in the silt. The active layer progresses to its maximum thickness and extent by September. The seasonal suprapermafrost water is referred to as "groundwater" in this document; however, it is not subject to the same regulatory criteria as conventional groundwater. While groundwater cleanup levels do not apply to suprapermafrost groundwater, they are used as guidelines to discuss the magnitude of hydrocarbon contamination.

The direction of groundwater flow through the pad is generally to the northeast from the former AST source area.

1.3 PREVIOUS SITE INVESTIGATIONS

Ongoing field activities since 1993 have included monitoring well installation, remediation with a soil vapor extraction (SVE) and air sparging system (AS), excavation of contaminated soil, and monitoring of groundwater and surface water.

In 1993, a subsurface investigation was performed to assess the impact from minor leaks and spills associated with the former fuel island at PS01 in conjunction with the release from the former ASTs. The investigation, which was performed during the decommissioning of the fuel island, included the collection of soil, groundwater, and surface water samples. Analytical results indicated that soil beneath the former fuel island was impacted with gasoline range organics (GRO), diesel range organics (DRO), and benzene, though a subsurface liner limited the impact to soil to a depth of 2 ft bgs in this area. At the same time, soil, groundwater, and surface water were found to be impacted by GRO and benzene near the former ASTs (EMCON, 1994).

Subsequent investigation and remediation activities included the following:

- **1996-1999, Soil Vapor Extraction and Air Sparging:** Installation of the SVE/AS system by Alyeska personnel was completed to reduce hydrocarbon impact to soil at the Site. The SVE/AS system operated during the summer months in 1997 and 1998, removing approximately 50 pounds of total petroleum hydrocarbons including gasoline range hydrocarbons and benzene (EMCON, 1998). The horizontal piping of the system became submerged by suprapermafrost groundwater in 1999, preventing the use of the SVE portion of the system. Alyeska concluded that operating the unit solely as an AS system would be the most effective remedial strategy (EMCON, 1999).

- **2000, Soil Excavation:** 150 cubic yards (cy) of petroleum-contaminated soil was removed from above the water table in the vicinity of the FGTA in June 2000 (IT Alaska, Inc., 2000).

- **2000-2005, Air Sparge and Impermeable Liner:** The SVE/AS system was operated solely in AS mode during the summer months from 2000 through 2005. An impermeable liner was also installed at the base of the excavation to increase the area of influence of the AS system by eliminating vertical airflow to the ground surface and preventing infiltration of surface water through the remaining contaminated soil (IT Alaska Inc., 2000; SLR, 2005).

- **2008, Soil Excavation:** 150 cy of petroleum-impacted soil was removed from the former gasoline AST release area. Soil samples collected from the excavation floor indicated that petroleum hydrocarbon impacts including benzene exceeding Alaska Department of Environmental Conservation (ADEC) soil cleanup levels remained in the source area at the FGTA (SLR, 2009).

1.4 GROUNDWATER AND SURFACE WATER INVESTIGATIONS

Groundwater and surface water monitoring have been conducted since 1994 to assess contaminant impacts to suprapermafrost groundwater within and surface water surrounding the FGTA pad area. Groundwater monitoring has included the investigation of contaminant impacts near Tank 117 resulting from historical Therminol® 44 and petroleum hydrocarbon releases. Additionally, surface water monitoring has been used to assess off-pad migration of groundwater contaminants. Groundwater and surface water investigations, annual monitoring, and the installation and maintenance of monitoring wells are described in the following sections.

1.4.1 GROUNDWATER MONITORING WELL INSTALLATIONS

The 1993 subsurface investigation of the fuel island release led to the initial installation of 10 wells within the FGTA in 1994 (EMCON, 1995). Additional wells were installed from 1999 through 2015 to define the dissolved hydrocarbon plume (SLR, 2004, 2007, 2010, 2013, and 2016); the most recent installations, including wells MW-4R, MW-7R, MW-16R, MW-17R, MW-22, and MW-23, were installed in 2015. The location of past and current wells is shown on Figure 3.

1.4.2 GROUNDWATER MONITORING RESULTS

Groundwater monitoring results have been used to evaluate the migration of the dissolved hydrocarbon plume source area and concentrations of plume constituents over time. The groundwater monitoring results show the migration of petroleum hydrocarbons exceeding ADEC cleanup levels including GRO and benzene from the source area in a north-northeast direction. An area of DRO cleanup level exceedances has also been identified near Tank 117, as described in Section 1.4.3. The migration of groundwater contaminant plumes is apparent from trends during the following periods:

- **1994-1998:** Petroleum hydrocarbon concentrations for the original 10 wells were greatest near the source area following removal of contaminated soil and during initial SVE system operation. The GRO plume was centered on the source area (wells MW-2, MW-6, and MW-10), whereas a DRO plume was more prevalent near upgradient wells MW-1 and MW-6. Benzene detections and exceedances were limited to downgradient wells MW-5, MW-8, and MW-9. Exceedances of toluene, ethylbenzenes, and/or xylenes were reported for well MW-10 only (EMCON, 1999).
- **1999-2000:** The continued northeast migration of GRO, DRO, and benzene contaminant plumes was determined and the presence of a DRO plume near Tank 117 became evident with the installation of additional monitoring wells. Concentrations of GRO and DRO increased in downgradient wells while beginning to decrease in source area wells including MW-10. A second area of DRO was identified to the east of Tank 117 near well MW-14 but not extending northwards to wells MW-12 and MW-13. Concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) decreased for source area wells except well MW-10 and benzene concentrations exceeding cleanup levels increased in downgradient wells.

- **2001-2007:** Installation of additional wells aided in further delineation of contaminant plumes to the northeast of the source area and Tank 117. Concentrations of GRO, DRO, and benzene continued to decline within the source area while increasing in downgradient wells. Results from new wells along north and east pad edges indicated that off-pad contaminant migration was not occurring (SLR, 2008).
- **2007-2014:** Concentrations of dissolved GRO, DRO, and BTEX constituents decreased in source area wells while increasing in mid-plume (formerly downgradient) wells which peaked from 2007 to 2009. A subsequent increase was observed in concentrations of these contaminants at now downgradient wells including MW-18 and MW-19. These trends are consistent with the downgradient migration of the contaminant plume in the apparent direction of groundwater flow (SLR, 2015).
- **2015:** Concentrations of GRO, DRO, benzene and/or toluene exceeded cleanup levels in seven of 11 sampled monitoring wells with source area exceedances limited to DRO in well MW-3. Mid-plume exceedances included GRO, benzene, and toluene. DRO exceeding the cleanup level was reported in well MW-17 downgradient of Tank 117 (SLR, 2016).
- **2016-2018:** Groundwater monitoring analytical results indicated the presence of distinct GRO, DRO, and BTEX plume areas as defined by exceedances for years 2016 (eight wells), 2017 (nine wells), and 2018 (six wells). GRO and BTEX plumes were decoupled from the historic FGTA source area and migration of the BTEX plume towards the pad's east edge was observed (SLR, 2017a, 2018a, and 2019). Sampling for 16 petroleum hydrocarbon volatile organic compounds (PVOCs; includes BTEX) was implemented for all wells in 2018; six wells had exceedances for 3 PVOCs other than BTEX. No surface water impacts were identified including sampling location SW-3 added in 2017 to evaluate pad-edge impacts.

Overall, monitoring results indicate that the source areas for DRO, GRO, and benzene plumes have been eliminated and that the groundwater plumes are attenuating while slowly migrating generally downgradient from the source location towards the northeastern edge of the pad.

1.4.3 TANK 117 THERMINOL CONTAMINATION ASSESSMENT

A plume of DRO exceeding cleanup levels was identified following installation of additional wells beginning in 1999. Historically, water samples collected from monitoring wells MW-14 and MW-15 near Tank 117 have exhibited relatively high concentrations of DRO. The source of the elevated DRO concentrations downgradient of the tank is likely the result of degrading Therminol contamination associated with a release near Tank 117 identified during a 1992 Site assessment (SLR, 2004). Sample analysis and interpretation of the chromatograms identified degradation of the principal component of Therminol 44, associated with a probable release from a leaking flange or pipe (America North/EMCON, 1992).

1.4.4 MONITORED NATURAL ATTENUATION

The potential for monitored natural attenuation (MNA) within groundwater at the FGTA Site has been evaluated since 2007 using field measurements and laboratory analyses. Nitrate, ferrous

iron, and sulfate can be used as terminal electron acceptors during anaerobic respiration (breakdown) of petroleum hydrocarbons under sufficiently chemically-reducing reduction-oxidation (redox) groundwater conditions.

A review of MNA data collected to date was completed in 2011 to assess the feasibility of natural attenuation processes as a supplemental remedial option for contaminated soil and suprapermafrost groundwater. The redox potential for each sampled well was given one of three classifications based on dissolved oxygen (DO), oxidation reduction potential (ORP), ferrous iron, and sulfate concentrations. Key findings from the 2011 evaluation and additional data gathered during the 2012 through 2016 seasons are presented in the 2016 report (SLR, 2016).

Overall, MNA performance monitoring results indicates variable, but generally favorable anoxic to anaerobic groundwater redox conditions in the mid-plume area. A limited extent of natural attenuation is evidenced by chemically-reducing conditions and the partial depletion of terminal electron acceptors.

1.5 SURFACE WATER INVESTIGATIONS

Surface water monitoring was initiated in 2003 to monitor surface water quality adjacent to the pad edge downgradient of the contamination source and mid-plume areas. Surface water samples collected adjacent to the pad between 2003 and 2005 did not contain detectable concentrations of BTEX or polynuclear aromatic hydrocarbons (PAH) compounds. A limited number of detections of benzene, toluene, and PAH congener naphthalene were reported for sample location SW-1 from 2006 through 2015 with most values reported as low, estimated concentrations below the laboratory limit of quantitation (LOQ). Similar, estimated concentrations of benzene, toluene, and naphthalene were reported for sample location SW-2 in 2014 and 2015. Analyte detections in surface water sampling location SW-3 added in 2017 were limited to naphthalene at a concentration near the LOQ. All calculated total aromatic hydrocarbon (TAH) and total aqueous hydrocarbon (TAqH) values for these locations have been below ADEC surface water quality criteria (SLR, 2017a).

1.6 PROJECT OBJECTIVES

Suprapermafrost groundwater and surface water monitoring activities were completed at the PS01 FGTA Site in 2019 to meet the following project objectives:

- Repair of damaged wells to allow for continued sampling;
- Well elevation survey to provide current well elevations for determination of groundwater flow direction;
- Collection of groundwater samples and well elevations to monitor direction of flow and extent of the dissolved petroleum hydrocarbon plumes; and
- Collection of surface water samples from established locations to determine if impacted groundwater is migrating from the pad edge to the adjacent surface water bodies.

2 REGULATORY CRITERIA

The applicable regulatory criteria for groundwater and surface water are described in the following sections.

2.1 GROUNDWATER

Groundwater cleanup levels for contaminated sites are specified in Title 18 of the Alaska Administrative Code (AAC), Chapter 75*, Oil and Other Hazardous Substances Pollution Control* Regulations as amended through October 27, 2018 (ADEC, 2018b). While groundwater cleanup levels presented in 18 AAC 75.345, Table C do not apply to suprapermafrost groundwater, they are used as guidelines to discuss the magnitude of hydrocarbon contamination. The cleanup levels for hydrocarbon constituents historically monitored in groundwater are as follows:

- GRO, 2.2 milligrams per liter (mg/L);
- DRO, 1.5 mg/L;
- RRO, 1.1 mg/L; and,
- BTEX constituents:
  - Benzene, 0.0046 mg/L;
  - Toluene, 1.1 mg/L;
  - Ethylbenzene, 0.015 mg/L;
  - o&p-Xylenes, 0.19 mg/L (as total xylenes); and
  - m-Xylenes, 0.19 mg/L (as total xylenes).

Cleanup levels for the 10 remaining PVOCs other than the BTEX constituents include:

- 1,2-Dibromoethane, 0.000075 mg/L;
- 1,2-Dichloroethane, 0.017 mg/L;
- 1,2,4-Trimethylbenzene (1,2,4-TMB), 0.056 mg/L;
- 1,3,5-Trimethylbenzene (1,3,5-TMB), 0.06 mg/L;
- Isopropylbenzene (cumene), 0.45 mg/L;
- Methyl-t-butyl ether, 0.14 mg/L;
- Naphthalene; 0.0017 mg/L;
- n-Butylbenzene, 1.0 mg/L;
- sec-Butylbenzene, 2.0 mg/L; and
- tert-Butylbenzene, 0.69 mg/L.

Analyte concentrations for 2016 and onwards were evaluated against October 27, 2018 groundwater cleanup levels in units of mg/L for consistency with historical data. Historical data collected prior to 2016 was not reevaluated with respect to the recent cleanup levels.

2.2 SURFACE WATER

Alaska surface water criteria are outlined in 18 AAC 70, *Water Quality Standards*, amended as of April 6, 2018 (ADEC, 2018a), which identifies standards for water use classes and subclasses. For fresh water, these classes are as follows:

(A) Water supply

- (i) Drinking, culinary, and food processing
- (ii) Agriculture, including irrigation and stock watering
- (iii) Aquaculture
- (iv) Industrial

(B) Water recreation

- (i) Contact recreation
- (ii) Secondary recreation

(C) Growth and propagation of fish, shellfish, other aquatic life, and wildlife

Without reclassifying a water body, it is appropriate to apply the most stringent water quality criteria to the water body. The fresh water uses with the most stringent water quality criteria are (A)(iii) water supply: aquaculture, and (C) growth and propagation of fish, shellfish, other aquatic life, and wildlife. The appropriate surface water hydrocarbon criteria are:

- TAH, 0.010 mg/L; and
- TAqH, 0.015 mg/L.

3 FIELD ACTIVITIES

Field activities in 2019 were completed in two mobilizations. Wells were inspected, repaired, and surveyed on July 18, then SLR staff completed groundwater sampling from August 13 to 16. The groundwater monitoring event included well gauging and sampling, and collection of off-pad surface water samples. All field activities were completed in accordance with Alyeska operating procedures and the ADEC-approved 2017 to 2019 Work Plan (SLR, 2017b) and 2018 Work Plan Addendum (SLR, 2018b), unless otherwise specified in Section 3.5. The locations of monitoring wells sampled in 2019 are shown on Figure 3. Site activities were documented in the Photograph Log, a bound Field Notebook, and on field forms included as Appendices A, B, and C respectively.

3.1 MONITORING WELL REPAIRS

Monitoring wells were assessed and repairs were conducted on July 18 and 19. Wells were inspected for damage caused by frost-jacking, vehicles, or activities such as pad grading and plowing. Damage to stick-up and flush-mount monuments, inner and outer well polyvinyl chloride (PVC) casings, and bentonite seals were repaired when possible. Specific repairs completed are detailed in Section 4.1.

3.2 MONITORING WELL ELEVATION SURVEY

All monitoring wells were surveyed on July 19, 2019 by Alyeska's survey contractor. Survey of most wells was completed following repairs as noted in Section 4.1. All well casing elevations were surveyed to the nearest 0.01 ft and the survey included wells installed in 2015, which previously had unknown elevations.

3.3 GROUNDWATER MONITORING

Groundwater samples were collected from 17 monitoring wells including MW-2, MW-3, MW-4R, MW-7R, MW-8, MW-9, MW-12, MW-13, MW-14R, MW-15, MW-16R, MW-17R, MW-18, MW-19, MW-20, MW-22, and MW-23, as shown on Figure 3. Duplicate samples designated MW-98 and MW-99 were collected from monitoring wells MW-18 and MW-9, respectively. Groundwater sampling was conducted consistent with the ADEC *Field Sampling Guidance* (ADEC, 2017). All sampling data were recorded on Groundwater Sampling Forms included in Appendix C.

3.3.1 PROCEDURES

Low-flow sampling techniques were used to collect groundwater samples from monitoring wells in accordance with procedures described in the Work Plan. Water quality parameters and other sampling information were documented in the Field Notebook and on Groundwater Sampling Forms included in Appendices B and C, respectively.

All groundwater samples were collected using a peristaltic pump discharging directly into laboratory-supplied sample containers appropriate for the required analyses. Peristaltic pumps are preferred for groundwater sampling at this Site because of shallow monitoring well depths, the thin water columns in wells, and to maintain consistency with historical data.

3.3.2 WELL GAUGING

The depth to groundwater in each well was gauged prior to collection of groundwater samples. Well depths and groundwater elevations are shown in Table 1. When required for low-flow or conventional sampling methods, the volume of water within a well casing (well volume) was calculated using the total casing depth obtained from 1) the well log, 2) field forms from the last sampling event, or 3) by direct measurement. The first two options were used when possible to avoid disturbance of sediments at the bottom of a well. All measurements were made to the nearest 0.01 ft using an electronic water level indicator. The water level indicator was decontaminated between wells as described in Section 3.9. Survey elevation data was collected as part of the sampling effort in 2019 and will be used to calculate approximate groundwater elevations for subsequent years.

3.3.3 LOW-FLOW SAMPLING METHODOLOGY

The low-flow sampling method was used for all wells and consisted of purging wells at a sufficiently low rate to maintain a drawdown of the water column less than 0.33 ft. within the well casing. Well purging was conducted by using a peristaltic pump with an adjustable flow rate; the flow rate was monitored and adjusted so drawdown did not exceed 0.33 ft.

Water quality parameters were measured at regular intervals during purging and were recorded on Groundwater Sampling Forms. Purging was considered complete once water quality parameters had stabilized and drawdown of less than 0.33 ft was maintained. Readings were considered stable when three successive discrete measurements, collected three to five minutes apart, were within the criteria below for three parameters (four if temperature was used):

- Temperature (in degrees Celsius [°C]), plus or minus (±) 3 percent (minimum of ± 0.2 °C);
- pH, ± 0.1 standard units;
- Specific conductance, ± 3 percent microsiemens per centimeter;
- ORP, ± 10 millivolts; and
- DO, ± 10 percent.

Sample collection occurred once parameters had stabilized in three successive discrete measurements or after a minimum of three well volumes had been removed.

3.3.4 ANALYTICAL METHODS

Groundwater samples were collected directly into laboratory-supplied containers with the volatile sample collected first followed by the non-volatile samples. The samples were placed into a chilled cooler as soon as possible after collection, and were maintained at a temperature near 4°C. The samples were submitted to SGS North America, Inc. (SGS) in Anchorage, Alaska under proper chain of custody (COC) procedures.

Groundwater samples were analyzed by the following methods:

- GRO by Alaska Method AK101; and
- DRO by Alaska Method AK102.

Additionally, a list of 16 PVOCs was added beginning in 2018 at the request of ADEC to evaluate for the presence of petroleum hydrocarbon VOCs in suprapermafrost groundwater at the Site. The list of 16 PVOCs evaluated by U.S. Environmental Protection Agency (USEPA) Method SW8260C includes:

- 1,2,4-TMB;
- 1,3,5-TMB;
- 1,2-Dibromoethane;
- 1,2-Dichloroethane;
- Benzene;
- Ethylbenzene;
- Isopropylbenzene (Cumene);
- Methyl-t-butyl ether;
- Naphthalene;
- n-Butylbenzene;
- sec-Butylbenzene;
- tert-Butylbenzene;
- Toluene;
- o-Xylene (as total xylenes);
- p- & m-Xylene (as total xylenes); and
- Total xylenes.

3.4 SURFACE WATER SAMPLING

Surface water samples were collected from sampling locations FGTA-SW-1 (SW-1), FGTA-SW-2 (SW-2), and FGTA-SW-3 (SW-3) to the east of the PS01 tank farm (Figure 3). A duplicate sample was collected from sample location FGTA SW-1 and was designated SW-99.

All surface water sampling data were recorded on Surface Water Sampling Forms (Appendix C).

3.4.1 PROCEDURES

Surface water samples were collected in accordance with ADEC's *Field Sampling Guidance* (ADEC, 2017). Each sample was collected by placing a laboratory cleaned, non-preserved, amber bottle below the water surface, opening the cap, filling the bottle, re-capping the bottle, and bringing it above the water surface. Water from the non-preserved bottle was transferred into preserved volatile organic analysis vials, and the non-preserved bottle was then topped off. Water quality parameters including temperature, DO, ORP, pH, and specific conductance were recorded for each surface water sampling location using a YSI® multimeter.

3.4.2 ANALYTICAL METHODS

Concentrations of TAH and TAqH for surface water were analyzed by methods consistent with ADEC regulations, as specified in Note 7 of the table included in 18 AAC 70.020(b), and modified by the ADEC Contaminated Sites Program as follows:

- BTEX using USEPA Method 8021B; and,
- PAHs using USEPA Method 8270D with selective ion monitoring for the 16 PAHs listed by USEPA Method 610.

The results of these analyses were used to calculate TAH and TAqH values using the methodology described below.

- TAH: The value for each surface water sample was calculated by summing detected concentrations of BTEX compounds. For compounds that were not detected (ND), the limit of detection (LOD) was used in place of the non-detect (ND) value in the summation. If BTEX compounds were not detected, the result was presented as ND at or above the sum of the LODs for all BTEX compounds.
- TAqH: The value for each surface water sample was calculated by summing the calculated TAH value (or the LOD of the TAH value if it was ND) and the detected concentrations of PAHs. For PAH compounds that were ND, the LOD was used in place of the ND value in the summation. When neither BTEX nor PAH compounds were detected, the TAqH value for each sample was presented as ND at the sum of the LODs for all BTEX and PAH compounds.

Total xylenes were calculated using the sum of p- and m-xylenes and o-xylene, or by the summation of LOD values for p- and m-xylenes and o-xylene in place of any ND values.

3.5 SAMPLE HANDLING, DOCUMENTATION, AND CHAIN OF CUSTODY

Groundwater and surface water samples were collected directly into laboratory-supplied containers appropriate for the required analyses. The samples were labeled and placed into a pre-chilled cooler with gel ice as soon as possible following collection. Sample and cooler

temperatures were maintained at approximately 4°C ± 2°C throughout transport to the laboratory. Samples were handled and transported in a manner that maintained sample integrity and did not exceed specified holding times. Each sample and any accompanying trip blank(s) were documented on the project COC form.

All samples were shipped directly to SGS in Anchorage, Alaska under proper COC procedures. SGS Anchorage is an ADEC-approved laboratory. Samples were analyzed within the respective laboratory hold times for each requested analysis.

3.6 QUALITY ASSURANCE AND QUALITY CONTROL

Quality assurance (QA)/quality control (QC) procedures were maintained throughout the sampling activities. QA procedures included the analysis of field duplicates and trip blanks, and a laboratory data QA review (QAR) by qualified SLR staff. The QAR included the completion of an ADEC Laboratory Data Review Checklist for each analytical report. QC procedures included adherence to appropriate sample collection methodology as described in the Work Plan. Any discrepancies associated with the samples collected from the Site are identified in the QAR and summarized in Section 4.3. The QAR and the completed ADEC Laboratory Data Review Checklists are presented in Appendix D.

3.7 WORK PLAN DEVIATIONS

No work plan deviations were noted for the sampling activities conducted in 2019.

3.8 INSTRUMENT CALIBRATION

Water quality instruments were calibrated according to manufacturer specifications prior to use and periodically during sampling if instrument drift was suspected. At a minimum, field instruments were calibrated daily prior to use. Instrument calibrations were documented on Water Quality Parameter Calibration Logs included in Appendix C.

3.9 SAMPLING EQUIPMENT DECONTAMINATION

All non-disposable or dedicated sampling equipment that contacted potentially contaminated groundwater or surface water was decontaminated consistent with the *Field Sampling Guidance* (ADEC, 2017). Sampling equipment was decontaminated using a stiff brush and a solution of a non-ionic detergent (e.g., Alconox® or Liquinox®) followed by two clean water and a single distilled water rinse.

3.10 WASTE MANAGEMENT

Purge water and decontamination water generated during the sampling activities were placed into an appropriately-labeled 55-gallon drum in the PS01 waste accumulation area. The Alyeska waste single point of contact, or their designee, was notified of the location and date of waste transfers.

Disposable sampling materials were disposed of as non-oily waste using a clear garbage bag and placed in the appropriate receptacle at PS01. No hazardous waste was generated during the 2019 field effort.

4 RESULTS

This section describes monitoring well integrity issues, the results of groundwater and surface water analyses, and key findings from the QAR. Monitoring activities were completed on August 16, 2019 and were documented in the Field Notebook and Field Forms included as Appendices B and C, respectively. Groundwater and surface water sampling results are presented in Tables 2 to 4. The QAR, completed ADEC Laboratory Data Review Checklist, and laboratory analytical report are included as Appendix D.

4.1 MONITORING WELL INTEGRITY

Historically, common causes of damage to wells have included frost jacking, vehicle traffic, and normal operations or on-Site construction activities. All wells were useable in 2019; however multiple wells required repairs including:

- **MW-4R and MW-16R:** The inner 2-inch diameter PVC casings were trimmed to address damage resulting from frost jacking during the previous freeze-thaw cycle;
- **MW 16R, MW-22, and MW-17R:** The well monuments were raised by 1to 2 inches bgs, and additional bentonite seal was added to address repeated frost-jacking of the 2-inch inner PVC casings.

All wells were surveyed following repairs completed in July. Surveyed top of casing elevations were adjusted for any additional repairs completed in August 2019.

4.2 GROUNDWATER ELEVATIONS

Groundwater elevations were calculated for all wells using top of casing elevations and gauged depths to groundwater measured prior to sampling. Groundwater depths were gauged to the nearest 0.01 ft for all wells. In general, groundwater flow at the FGTA Site trends towards the east and northeast edge of the pad. The site-wide average groundwater elevation was the highest measured though 2015. The water levels and calculated elevations for existing wells dating back to 1994 are shown in Table 1 and the general groundwater flow direction is shown on Figure 3.

4.3 ANALYTICAL DATA QUALITY

The data were deemed acceptable for use with minor issues noted in the QAR regarding receipt of samples, laboratory method blanks, reporting limits, and field duplicates. Qualified results are outlined below and presented in detail in SLR's QAR (Appendix D).

- **Laboratory Method Blanks:** DRO was detected at concentrations below the LOQ for three method blanks. Associated detected results within five times that of the blank were considered impacted and were usable as qualified.

- **Field Duplicates:** The relative percent difference for some PVOC analytes in the parent/duplicate sample pair MW-18/MW-98 exceeded the allowable limit. All affected results were flagged as estimated quantities and data was considered usable as qualified.

4.4 GROUNDWATER ANALYTICAL RESULTS

Groundwater monitoring analytical results indicate the presence of distinct GRO, DRO, and BTEX plume areas based on exceedances of groundwater cleanup levels. A much smaller extent of exceedances is evident for PVOCs other than BTEX. In general, the GRO and BTEX plumes originated from the FGTA and have migrated to east-northeast while generally reducing in size, as evaluated against the more stringent ADEC cleanup levels implemented in 2016 and promulgated through the 2018 regulations (ADEC, 2018b). The western extent of DRO, GRO, and BTEX plumes reduced slightly as indicated by lower analyte concentrations in wells MW-8 and MW-15 .

The GRO, DRO, and BTEX contaminant plumes and PVOC exceedances are discussed individually in the following sections. Analytical results for analytes sampled in 2019 are shown in Table 2. Historical results for decommissioned wells are shown in Appendix E. Groundwater analyte cleanup level exceedances and approximate GRO, DRO, and BTEX plume areas are shown on Figure 3.

4.4.1 GRO PLUME

The extent of the GRO plume exceeding the 2.2 mg/L cleanup level decreased slightly with concentrations remaining high near the plume center. The approximated plume extent is based on exceedances in wells MW-8, MW-9, and MW-19 as follows:

- **Upgradient well**: The concentration in upgradient well MW-8 decreased to 4.05 mg/L from 4.46 mg/L in 2018, and remains well below the historical maximum of 23 mg/L in 2014.
- **Plume center well**: Exceedance concentrations increased in well MW-9 to 24.8 mg/L from 15.2 mg/L in 2018, but remains below the recent high of 30.8 mg/L in 2016.
- **Downgradient well:** The concentration in MW-9 fell slightly to 17.4 mg/L from 18.5 mg/L in 2018.

4.4.2 DRO PLUME

The DRO plume shows continued reduction in extent with declining concentrations in wells MW-15 and MW-17R where DRO is above 1.5 mg/L cleanup level. The assessment of the DRO plume is based on the following findings:

- **Upgradient wells**: Well MW-15 showed a substantial decrease in exceedance concentrations to 5.76 mg/L from 48.8 mg/L in 2018. The current value is well below the historic high of 784 mg/L in 2004.

- **Downgradient wells**: The exceedance concentration of 2.06 mg/L in well MW-17R on the pad edge shows a continued decline from the recent high of 2.9 mg/L in 2017.

The DRO plume has continued to shrink and migrate eastward to the pad edge near MW-17R from Tank 117 and the historic Therminol spill area.

4.4.3 BTEX PLUME

Exceedances of BTEX constituents were detected in 6 of the 17 monitoring wells. The extent of the BTEX plume decreased as indicated by the overall decline of exceedance concentrations in wells except MW-9. The BTEX plume is largely defined by benzene and ethylbenzene with lesser exceedances of cleanup levels for toluene and xylenes. The plume extent is based on exceedance concentrations of one or more of the four constituent compounds as described below.

- **Benzene:** The plume area is primarily defined by the 0.0046 mg/L cleanup level which was exceeded in upgradient, mid-plume, plume-edge, and downgradient wells as follows: well MW-8, mid plume wells MW-9 and MW-19, plume-edge wells MW-15 and MW-18, and downgradient well MW-23.
    - **Upgradient:** Well MW-8 remained relatively unchanged at 1.08 mg/L.
    - **Mid-plume:** Exceedance concentrations increased for benzene in well MW-9, but decreased for MW-15, MW-18, MW-19 to respective values of 0.0253, 0.00836, and 2.34 mg/L.
    - **Downgradient:** The exceedance concentration decreased in pad-edge well MW-23 from 0.0521 to 0.0375 mg/L.
- **Toluene:** Toluene was detected in MW-8 at a concentration of 1.15 mg/L which was within the historical concentration range for this well.
- **Ethylbenzene:** Exceedances of the 0.015 mg/L cleanup level were detected in upgradient well MW-8 and mid-plume wells MW-9 and MW-19. Concentrations increased to historic highs of 1.700 and 1.18 mg/L for MW-9 and MW-19, respectively. Previous exceedances in 2018 included plume edge well MW-8. Concentrations remained below cleanup levels in upgradient well MW-20 and downgradient well MW-23 which had prior exceedances in 2017.
- **Xylenes:** Exceedances of the 0.19 mg/L total xylene cleanup level were reported only for mid-plume wells MW-9 with a historic high of 8.46 mg/L and MW-19 with a value of 5.27 mg/L.

Overall, concentrations within the BTEX plume show an overall decrease from 2018 in all wells except center well MW-9 which had increases for all but toluene, and upgradient well MW-8 which had a toluene exceedance. The BTEX plume extends to the pad edge near MW-23.

4.4.4 PETROLEUM VOLATILE ORGANIC COMPOUNDS

Four of 17 wells had exceedances of PVOCs excluding BTEX constituents. PVOC sampling initially included only MW-9 and MW-14R in 2017 and was expanded to include all wells in 2018. Exceedances included the following PVOCs:

- **1,2,4-TMB:** Exceedances of the 0.056 mg/L cleanup level were detected in wells MW-9 and MW-19 with respective concentrations of 0.600 and 0.0984 mg/L. Concentrations in well MW-9 have increased each year from 0.148 mg/L in 2017. The concentration also increased for MW-19 from 0.0716 mg/L in 2018.
- **1,3,5-TMB:** Exceedances of the 0.06 mg/L cleanup level remain limited to MW-9 with a concentration of 0.183 mg/L, marking a second year above the cleanup level.
- **Naphthalene:** Naphthalene was detected above the cleanup level of 0.0017 mg/L in wells MW-8, MW-9, MW-15, and MW-19. New exceedances were limited to well MW-19 which increased to 0.00232 mg/L. Concentrations decreased by over half for MW-8 and MW-15. Non-detect values above cleanup levels in 2018 for MW-9 and MW-19 are considered cleanup level exceedances.

Results indicate that MW-9 had both the most numerous exceedances and highest concentrations of PVOCs. This correlates with BTEX exceedances and high concentrations for MW-9 as described in the previous section.

4.5 SURFACE WATER ANALYTICAL RESULTS

No impacts to surface water were indicated by results of analytical samples collected in 2019 from sample locations SW-1, SW-2, or SW-3. This result is consistent with previous surface water results. Analyte detections were limited to benzene and total xylenes in SW-1 and benzene in SW-2, with all concentrations near the LOD. No detections were reported for sample location SW-3, downgradient of benzene groundwater exceedances in pad-edge well MW-23.

All PAH compounds were reported as ND and prior detections are limited to low-concentrations that did not result in exceedances of Alaska *Water Quality Standards* (ADEC, 2018a) for calculated TAH and TAqH values. Surface water analytical results including TAH and TAqH values are presented in Table 4 and sample locations are shown on Figure 3.

The surface water sample locations were selected to provide monitoring points downgradient of petroleum hydrocarbon impacts in the FGTA pad. As such, location SW-1 may be adjusted in 2020 to provide coverage of the pad-edge exceedances at MW-17R. Locations SW-1 and SW-2 may currently be cross-gradient from the DRO exceedance in well MW-17R.

5 CONCLUSIONS AND RECOMMENDATIONS

Groundwater and surface water sampling results from 2019 indicate declining groundwater impacts as compared to 2018, and that contaminant impacts along the pad edges are not impacting nearby surface water bodies.

The extent of cleanup level exceedances is the lowest since implementation of the latest ADEC cleanup levels as indicated by an evaluation of GRO, DRO, and BTEX plumes. The GRO, DRO, and BTEX plumes show an overall decrease in size, with generally lower exceedance concentrations at upgradient, plume edge, and downgradient wells. Historical and recent data continue to indicate that the GRO, DRO, and BTEX plumes are decoupled from the historic FGTA source area and the GRO and BTEX plume may be slowly migrating towards the east.

Concentrations of PVOCs 1,2,4-TMB, 1,3,5-TMB, and naphthalene exceeded cleanup levels in 4 out of 17 monitoring wells. New PVOC exceedances were limited to naphthalene in MW-19. The area of highest PVOC impacts coincides with the center of the BTEX plume.

Surface water TAH and TAqH concentrations are below Alaska *Water Quality Standards* with DRO and BTEX plumes extending to the pad edge. These results are consistent with historical results, indicating off-pad migration of contaminants to surface water is not occurring.

SLR and Alyeska recommend continued groundwater and surface water monitoring at the PS01 FGTA Site in 2020. Annual monitoring will continue to include sampling for PVOCs at all wells. A revised 2020-2021 multi-year work plan will be submitted to ADEC for review and approval prior to conducting Site work.

6 REFERENCES

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SLR, 2018b. Addendum to Water Monitoring Work Plan, Pump Station 1 Former Gasoline Tank Area. May 25.

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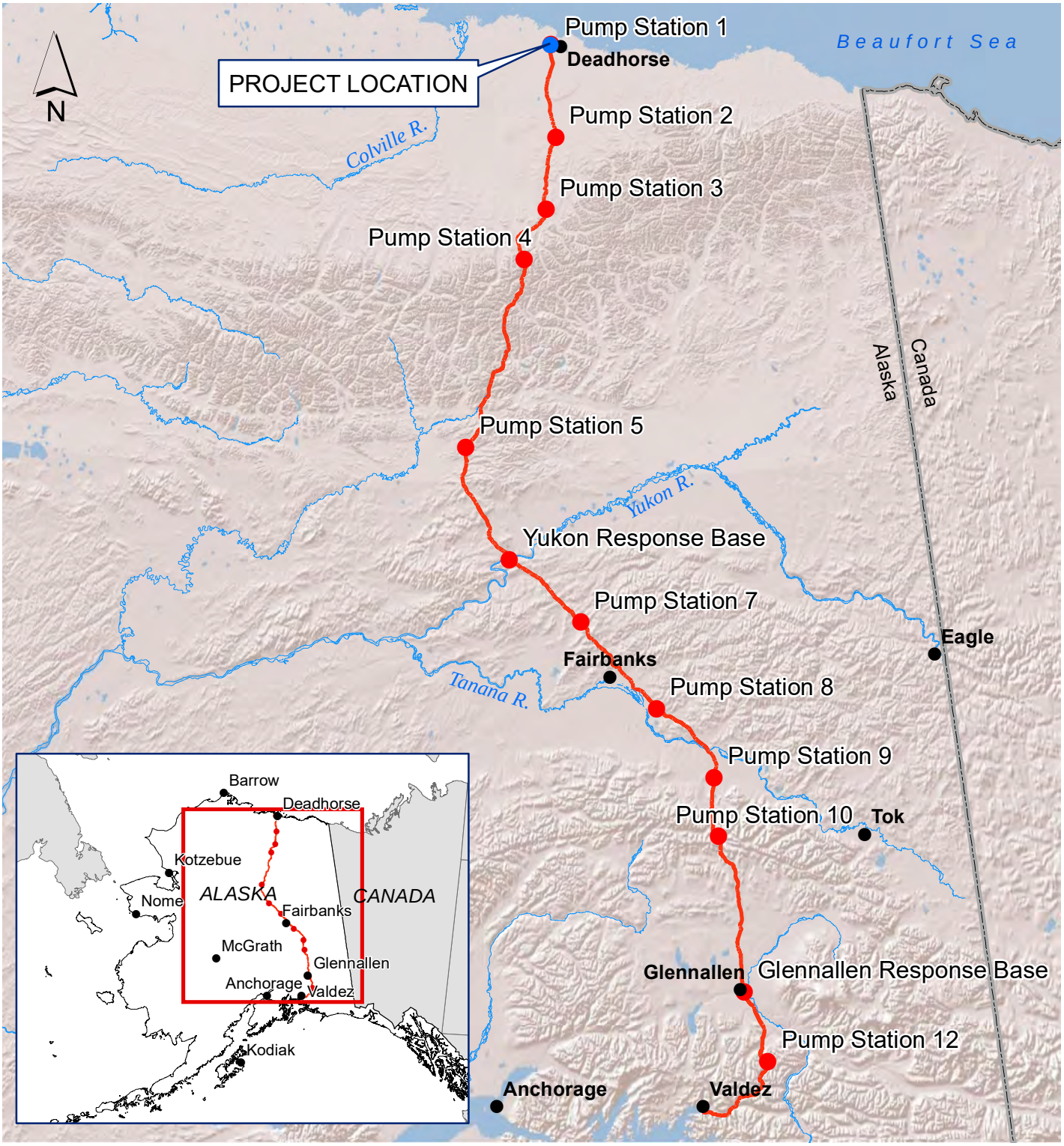
FIGURES



Legend

- City
- Pump Station
- Trans Alaska Pipeline

0 20 40 80 120 160 Miles

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY.
ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

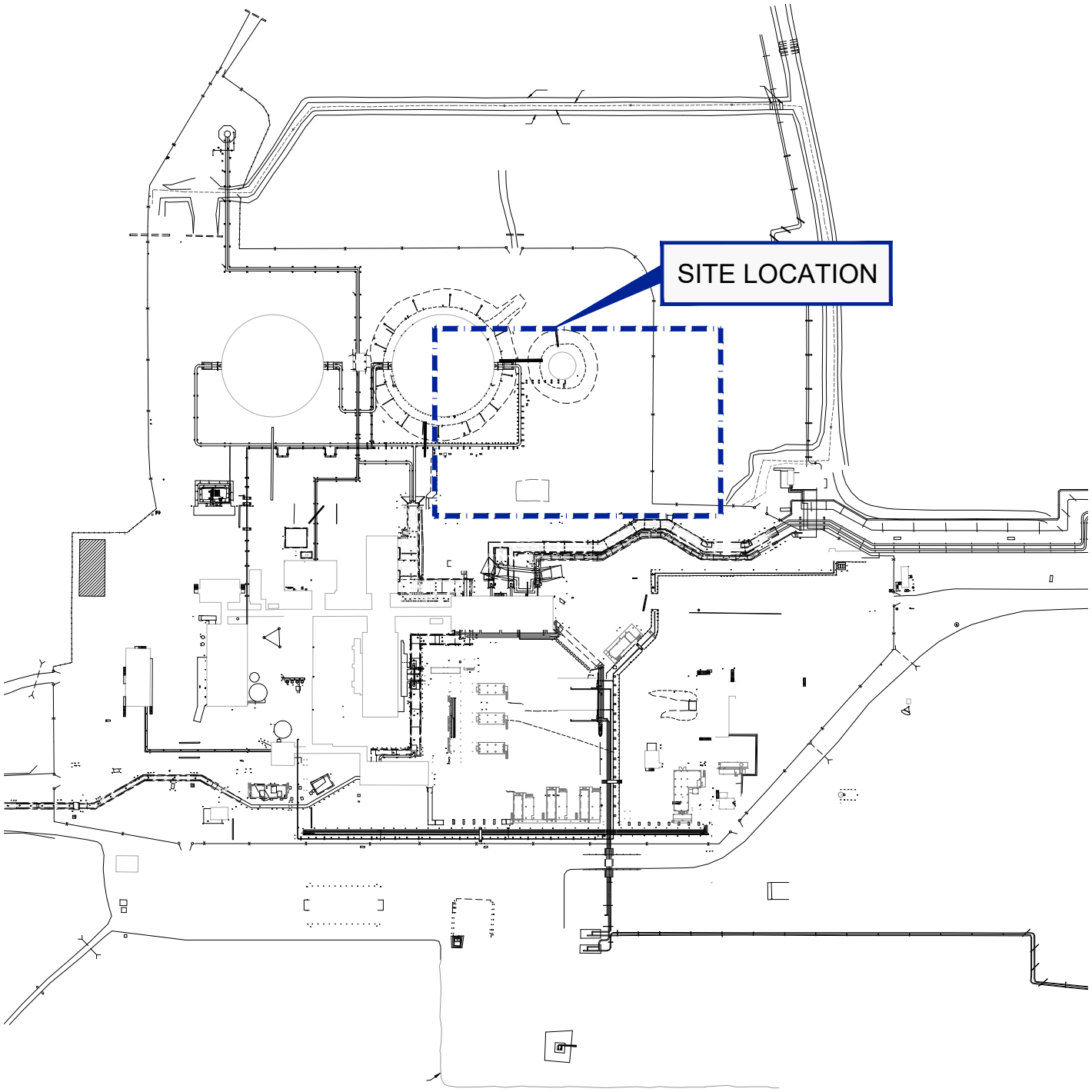
SLR

Site
ALYESKA PIPELINE SERVICE COMPANY
PUMP STATION 1
PIPELINE MILEPOST 0

Report
2019 WATER MONITORING REPORT
PUMP STATION 1 FORMER GASOLINE TANK AREA

Drawing
SITE LOCATION MAP

Drawing December 2019	Scale As Shown	Fig. No. 1
File Name F1 PS01 FGTA RPT_19.mxd	Project No. 105.01288.19008	



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WHEN PLOTTED AT 8.5 x 11 PAGE SIZE
0 260 520 780'

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY. ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

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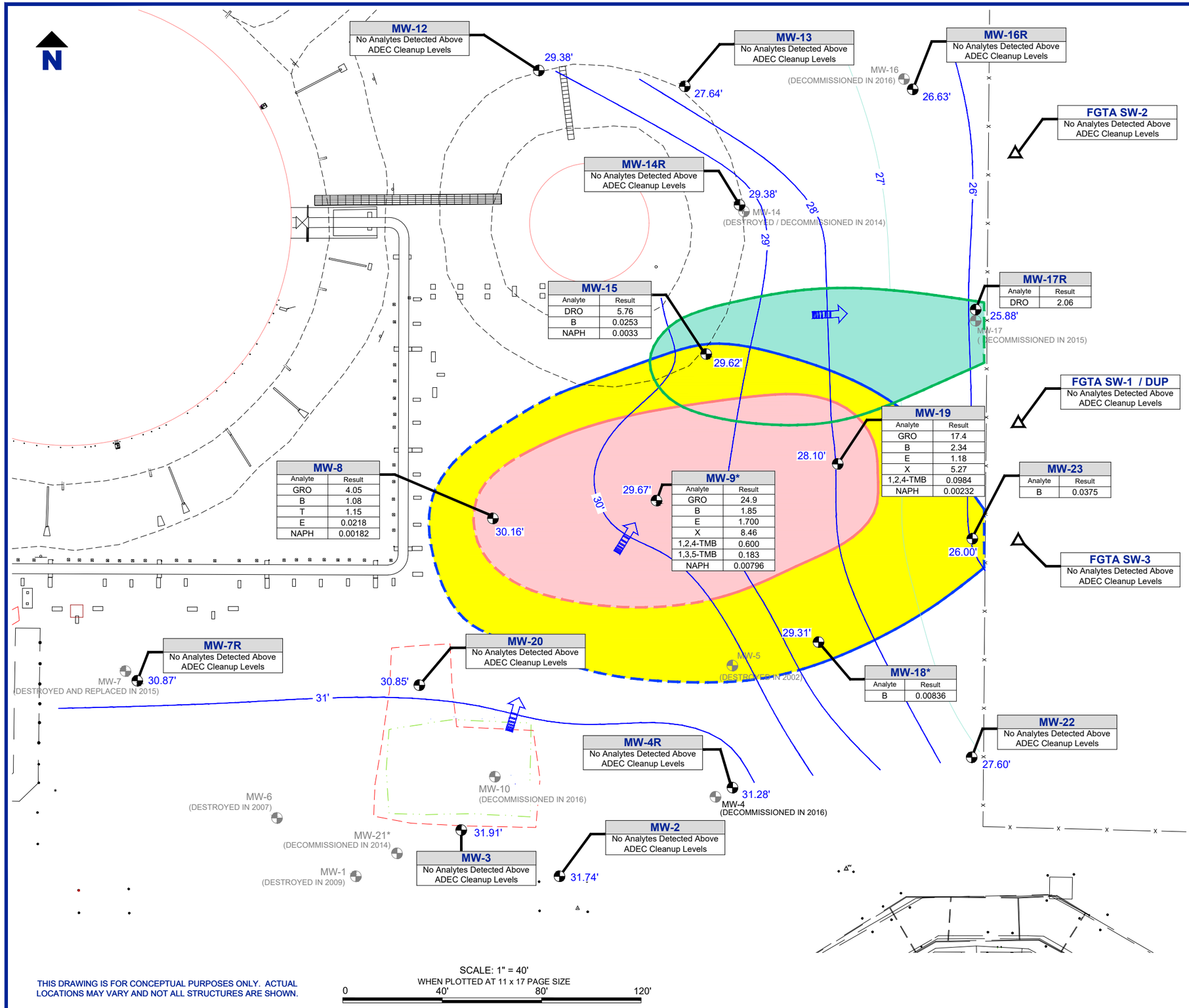
Site
ALYESKA PIPELINE SERVICE COMPANY
PUMP STATION 1
PIPELINE MILEPOST 0

Report
2019 WATER MONITORING REPORT
PUMP STATION 1
FORMER GASOLINE TANK AREA

Drawing
SITE VICINITY MAP

Date	December 2019	Scale	1" = 260 Feet
File Name	F2 PS1 FGTA RPT_19	Project No.	105.01288.19008

Fig. No. 2



DRAWING NOTES

DRAWING IS BASED ON ALYESKA PIPELINE SERVICE COMPANY PUMP STATION 1 AS-BUILT DATABASE SHEET DRAWING D-31-L21 SHEET 2 REVISION 15 05/29/2007

LEGEND

- MONITORING WELL LOCATION
- MONITORING WELL NOT INCLUDED IN 2016 SAMPLING PROGRAM
- SURFACE WATER SAMPLE LOCATION
- FENCE
- ELEVATED TANK SOIL MOUND CONTOUR
- EDGE OF LINER
- EDGE OF EXCAVATION
- 27' GROUNDWATER ELEVATION CONTOUR (FEET)
- GENERAL GROUNDWATER FLOW DIRECTION
- **2019** ESTIMATED EXTENT OF **DRO** CONTAMINATION ABOVE ADEC CLEANUP LEVEL
- **2019** ESTIMATED EXTENT OF **GRO** CONTAMINATION ABOVE ADEC CLEANUP LEVEL
- **2019** ESTIMATED EXTENT OF **BTEX** CONTAMINATION ABOVE ADEC CLEANUP LEVELS

SAMPLING RESULTS GUIDELINES

ABBREVIATIONS:

AAC	ALASKA ADMINISTRATIVE CODE
ADEC	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DRO	DIESEL RANGE ORGANICS
GRO	GASOLINE RANGE ORGANICS
RRO	RESIDUAL RANGE ORGANICS
1,2,4-TMB	1,2,4-TRIMETHYLBENZENE
1,3,5-TMB	1,3,5-TRIMETHYLBENZENE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES
NAPH	NAPHTHALENE
DUP	DUPLICATE SAMPLE
PAH	POLYNUCLEAR AROMATIC HYDROCARBONS
mg/L	MILLIGRAMS PER LITER
VOCs	VOLATILE ORGANIC COMPOUNDS

NOTES:

1. ALL WELLS WERE SAMPLED BETWEEN AUGUST 13 AND 15, 2019.
2. ALL GROUNDWATER SAMPLES COLLECTED FROM MONITORING WELLS WERE ANALYZED FOR GRO, DRO, BTEX CONSTITUENTS,AND PETROLEUM HYDROCARBON VOCs.
3. ALL SURFACE WATER SAMPLES WERE ANALYZED FOR BTEX AND PAHs.
4. ALL RESULTS ARE SHOWN IN MILLIGRAMS PER LITER (mg/L).
5. * DUPLICATE SAMPLE; THE HIGHER OF THE PARENT / DUPLICATE SAMPLE VALUES ARE SHOWN.
6. DETECTIONS SHOWN EXCEED THE 2018 ADEC GROUNDWATER CLEANUP LEVELS AS PRESENTED IN 18 AAC 75, OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTROL, TABLE C (ADEC, 2018b).

Analyte	Cleanup Level (mg/L)
GRO	2.2
DRO	1.5
B	1.1
E	0.0046
X	0.019
1,2,4-TMB	0.056
1,3,5-TMB	0.06
NAPH	0.0017

Site
ALYESKA PIPELINE SERVICE COMPANY
PUMP STATION 1
PIPELINE MILEPOST 0

Report
2019 WATER MONITORING REPORT
PUMP STATION 1
FORMER GASOLINE TANK AREA

Drawing
WATER SAMPLING ANALYTICAL RESULTS

Date	December 2019	Scale	1" = 40'
File Name	F3 PS1 FGTA RPT_19	Project No.	105.01288.19008

Fig. No. 3

SLR

TABLES

Table 1 - Monitoring Well Groundwater Levels
Pump Station 1 Former Gasoline Tank Area

Monitoring Well[A]	Date	Depth to Water from Top of Casing (feet)	Sounding Depth of Well from Top of Casing (feet)	Surveyed Top of PVC Casing Elevation (feet above MSL)[B]	Elevation of Water (feet above MSL)[C]	Analytical Sample Collected
MW-2	9/4/1994	6.23	--	--	--	Yes
	8/23/1996	7.35	--	--	--	Yes
	8/26/1997	6.03	--	--	--	Yes
	8/26/1998	7.30	--	--	--	Yes
	8/25/1999	6.82	--	--	--	Yes
	8/23/2000	7.10	9.65	--	--	Yes
	8/11/2001	7.10	8.85	--	--	Yes
	8/17/2002	6.13	9.42	--	--	Yes
	Sampling discontinued 2003-2008					
	7/29/2009	7.44	8.04	--	--	Yes
	8/2/2010	7.26	8.04	--	--	Yes
	8/9/2011	Dry	--	--	--	No
	8/4/2012	7.50	9.23	36.66	29.16	Yes
	8/4/2013	6.18	9.85	36.66	30.48	Yes
	8/21/2014	6.79	9.60	36.66	29.87	Yes
	8/25/2015	5.75	9.60	36.66	30.91	Yes
	8/10/2016	6.92	9.60	36.66	29.74	Yes
	8/16/2017	5.10	9.60	36.66	31.56	Yes
	7/28/2018	5.92	9.60	36.66	30.74	Yes
	8/16/2019	5.05	9.78	36.785	31.74	Yes
MW-3	9/4/1994	5.61	--	--	--	Yes
	8/23/1996	Dry	--	--	--	No
	8/26/1997	5.30	--	--	--	Yes
	8/26/1998	6.82	--	--	--	No
	8/25/1999	6.14	--	--	--	Yes
	8/23/2000	6.24	6.80	--	--	Yes
	8/7/2001	6.80	6.84	--	--	Yes
	8/17/2002	5.30	6.80	--	--	Yes
	9/6/2003	6.33	6.73	--	--	Yes
	8/26/2004	6.23	6.73	--	--	Yes
	7/22/2005	6.24	6.39	--	--	Yes
	9/6/2006	6.22	6.61	--	--	Yes
	9/8/2007	Dry	6.79	--	--	No
	7/31/2008	6.68	6.78	--	--	No
	7/29/2009	Dry	6.85	--	--	No
	8/2/2010	6.78	6.85	--	--	No
	8/9/2011	Dry	--	--	--	No
	8/4/2012	6.52	6.77	--	--	Yes
	8/4/2013	5.18	6.77	--	--	Yes
	8/21/2014	5.99	6.78	--	--	Yes
	8/25/2015	4.95	6.75	--	--	Yes
	8/10/2016	5.96	6.64	--	--	Yes
	8/15/2017	3.99	6.64	--	--	Yes
	7/27/2018	4.75	6.64	--	--	Yes
	8/16/2019	4.13	6.80	36.035	31.91	Yes
MW-4R	11/16/2015	Replacement well MW-4R installed 2015				
	7/26/2016	3.50	6.61	--	--	No, development only
	8/10/2016	3.30	7.12	--	--	Yes
	8/16/2017	1.27	7.12	--	--	Yes
	7/28/2018	2.04	7.12	--	--	Yes
	8/16/2019	0.95	3.99	32.225	31.28	Yes
MW-7R	11/15/2015	Replacement well MW-7R installed 2015				
	7/25-7/26-16	4.47	6.50	--	--	No, developed only
	8/11/2016	1.04	5.35	--	--	Yes
	8/16/2017	0.20	5.35	--	--	Yes
	7/28/2018	0.20	5.35	--	--	Yes
	8/16/2019	0.19	4.85	31.060	30.870	Yes
MW-8	9/4/1994	2.23	--	--	--	Yes
	8/23/1996	2.43	--	--	--	Yes
	8/26/1997	2.50	--	--	--	Yes
	8/26/1998	2.72	--	--	--	Yes
	8/25/1999	2.57	--	--	--	Yes
	8/23/2000	2.58	4.00	--	--	Yes
	8/11/2001	2.44	4.00	--	--	Yes
	8/17/2002	2.25	4.00	--	--	Yes
	9/6/2003	2.64	4.00	--	--	Yes
	8/26/2004	2.89	4.00	--	--	Yes
	7/22/2005	3.18	3.98	--	--	Yes
	9/5/2006	2.80	3.92	--	--	Yes
	9/8/2007	1.10	1.32-1.42	--	--	Yes
	8/1/2008	0.45	1.38	--	--	Yes
	7/29/2009	0.80	1.39	--	--	Yes
	8/2/2010	0.65	1.39	--	--	Yes
	8/9/2011	0.50	0.88	--	--	Yes
	8/4/2012	TOC	0.9	30.06	30.06	Yes
	8/4/2013	0.32	2.05	30.06	29.74	Yes
	8/22/2014	1.08	1.92	30.06	28.98	Yes
	8/25/2015	0.20	2.18	30.06	29.86	Yes
	8/11/2016	0.92	2.18	30.06	29.14	Yes

Table 1 - Monitoring Well Groundwater Levels
Pump Station 1 Former Gasoline Tank Area

Monitoring Well[A]	Date	Depth to Water from Top of Casing (feet)	Sounding Depth of Well from Top of Casing (feet)	Surveyed Top of PVC Casing Elevation (feet above MSL)[B]	Elevation of Water (feet above MSL)[C]	Analytical Sample Collected
MW-8 Continued	8/15/2017	0.00	2.18	30.06	30.06	Yes
	7/27/2018	0.00	2.18	30.06	30.06	Yes
	8/16/2019	0.14	1.97	30.295	30.16	Yes
MW-9	9/4/1994	1.92	--	--	--	Yes
	8/23/1996	2.77	--	--	--	Yes
	8/26/1997	1.93	--	--	--	Yes
	8/26/1998	2.58	--	--	--	Yes
	8/25/1999	2.22	--	--	--	Yes
	8/23/2000	2.80	4.75	--	--	Yes
	8/11/2001	2.22	4.80	--	--	Yes
	8/16/2002	1.80	4.77	--	--	Yes
	9/6/2003	2.47	4.80	--	--	Yes
	8/26/2004	3.00	4.80	--	--	Yes
	7/22/2005	3.57	4.77	--	--	Yes
	9/5/2006	2.63	4.75	--	--	Yes
	9/7/2007	1.27	2.69	--	--	Yes
	8/2/2008	0.59	2.70	--	--	Yes
	7/29/2009	1.39	2.69	--	--	Yes
	8/2/2010	1.22	2.69	--	--	Yes
	8/9/2011	0.80	2.45	--	--	Yes
	8/3/2012	0.50	2.46	29.96	29.46	Yes
	8/4/2013	0.85	3.94	29.96	29.11	Yes
	8/22/2014	1.78	3.72	29.96	28.18	Yes
	8/25/2015	0.80	4.00	29.96	29.16	Yes
	8/10/2016	1.60	3.72	29.96	28.36	Yes
	8/15/2017	0.00	3.72	29.96	29.96	Yes
	7/28/2018	0.50	3.72	29.86	29.46	Yes
	8/16/2019	0.30	3.80	29.970	29.67	Yes
MW-12	8/26/1999	3.93	--	--	--	Yes
	8/23/2000	4.25	7.30	--	--	Yes
	8/11/2001	3.80	7.28	--	--	Yes
	8/16/2002	3.50	7.35	--	--	Yes
	Sampling discontinued 2003-2005					
	9/6/2006	4.08	7.20	--	--	Yes
	Sampling discontinued 2007-2008					
	7/30/2009	5.79	7.30	--	--	Yes
	8/1/2010	5.23	7.30	--	--	Yes
	8/9/2011	4.44	7.32	--	--	Yes
	8/5/2012	4.15	7.25	32.29	28.14	Yes
	8/3/2013	3.75	7.24	32.29	28.54	Yes
	8/22/2014	4.40	7.33	32.29	27.89	Yes
	8/25/2015	3.49	7.15	32.29	28.8	Yes
	8/11/2016	4.48	7.12	32.29	27.81	Yes
	8/15/2017	3.47	7.12	32.29	28.82	Yes
	7/27/2018	3.83	7.12	32.29	28.46	Yes
	8/16/2019	3.34	7.28	32.720	29.38	Yes
MW-13	8/26/1999	4.12	--	--	--	Yes
	8/23/2000	5.00	7.25	--	--	Yes
	8/11/2001	4.62	7.20	--	--	Yes
	8/16/2002	3.72	7.20	--	--	Yes
	Sampling discontinued 2003-2005					
	9/6/2006	4.30	7.00	--	--	Yes
	Sampling discontinued 2007-2008					
	7/30/2009	6.28	7.11	--	--	No
	8/1/2010	6.40	7.11	--	--	No
	8/8/2011	5.18	7.12	--	--	Yes
	8/5/2012	5.72	7.05	32.15	26.43	No
	8/3/2013	4.40	7.00	32.15	27.75	Yes
	8/22/2014	5.40	7.10	32.15	26.75	Yes
	8/25/2015	3.32	7.08	32.15	28.83	Yes
	8/11/2016	4.91	6.95	32.15	27.24	Yes
	8/15/2017	3.67	6.95	32.15	28.48	Yes
	7/28/2018	5.10	6.95	32.15	27.05	Yes
	8/16/2019	4.76	6.80	32.395	27.64	Yes
MW-14R	7/25/2016	2.43	5.80	--	--	No, developed only
	8/11/2016	2.22	5.32	--	--	Yes
	8/15/2017	0.00	5.32	--	--	Yes
	7/27/2018	1.63	5.32	--	--	Yes
	8/16/2019	0.00	5.87	29.375	29.38	Yes
MW-15	8/11/2001	3.48	6.95	--	--	Yes
	8/16/2002	3.08	6.92	--	--	Yes
	9/6/2003	3.73	7.10	--	--	Yes
	8/26/2004	4.13	7.10	--	--	Yes
	7/22/2005	4.88	6.97	--	--	Yes
	9/5/2006	3.88	7.00	--	--	Yes
	9/6/2007	4.72	7.00	--	--	Yes
	8/2/2008	3.61	6.98	--	--	Yes
	7/30/2009	5.32	7.00	--	--	Yes

Table 1 - Monitoring Well Groundwater Levels
Pump Station 1 Former Gasoline Tank Area

Monitoring Well[A]	Date	Depth to Water from Top of Casing (feet)	Sounding Depth of Well from Top of Casing (feet)	Surveyed Top of PVC Casing Elevation (feet above MSL)[B]	Elevation of Water (feet above MSL)[C]	Analytical Sample Collected
MW-15 Continued	8/1/2010	4.29	7.00	--	--	Yes
	8/8/2011	3.6	6.85	--	--	Yes
	8/5/2012	3.52	6.84	31.23	27.71	Yes
	8/3/2013	2.45	6.86	31.23	28.78	Yes
	8/21/2014	3.46	6.72	31.23	27.77	Yes
	8/25/2015	2.38	6.85	31.23	28.85	Yes
	8/11/2016	3.34	6.81	31.23	27.89	Yes
	8/15/2017	1.77	6.81	31.23	29.46	Yes
	7/28/2018	2.83	6.81	31.23	28.40	Yes
	8/16/2019	2.01	6.81	31.625	29.62	Yes
MW-16R	Replacement well MW-16R installed in 2015					
	7/25/2016	1.92	4.89	--	--	No, developed only
	8/10/2016	1.59	5.39	--	--	Yes
	8/15/2017	0.03	5.39	--	--	Yes
	7/28/2018	1.34	5.39			Yes
	8/16/2019	0.56	4.18	27.185	26.63	Yes
MW-17R	11/15/2015	Replacement well MW-17R installed 2015				
	7/24/2016	1.43	5.00	--	--	No, developed only
	8/10/2016	1.30	5.00	--	--	Yes
	8/15/2017	0.70	5.00	--	--	Yes
	7/28/2018	1.30	5.00	--	--	Yes
	8/16/2019	1.34	4.19	27.220	25.88	Yes
MW-18	9/6/2003	1.81	3.96	--	--	Yes
	8/26/2004	1.93	3.96	--	--	Yes
	7/22/2005	2.26	3.94	--	--	Yes
	9/6/2006	1.64	3.90	--	--	Yes
	9/8/2007	2.35	3.82	--	--	Yes
	8/2/2008	2.30	3.81	--	--	Yes
	7/29/2009	2.60	3.80	--	--	Yes
	8/1/2010	2.40	3.80	--	--	Yes
	8/8/2011	1.79	3.84	--	--	Yes
	8/4/2012	2.15	3.80	30.06	27.91	Yes
	8/4/2013	1.87	4.72	30.06	28.19	Yes
	8/22/2014	2.53	4.50	30.06	27.53	Yes
	8/25/2015	1.42	4.60	30.06	28.64	Yes
	8/10/2016	2.57	4.60	30.06	27.49	Yes
	8/15/2017	0.50	4.60	30.06	29.56	Yes
	7/27/2018	1.86	4.60	30.06	28.20	Yes
	8/16/2019	0.83	4.38	30.140	29.31	Yes
MW-19	9/6/2003	1.07	2.70	--	--	Yes
	8/26/2004	1.42	2.70	--	--	Yes
	7/22/2005	1.66	2.63	--	--	Yes
	9/6/2006	0.96	2.60	--	--	Yes
	9/6/2007	1.67	2.62	--	--	Yes
	8/2/2008	1.67	2.59	--	--	Yes
	7/30/2009	2.24	2.67	--	--	Yes
	8/1/2010	1.86	2.67	--	--	Yes
	8/9/2011	1.54	2.54	--	--	Yes
	8/4/2012	1.44	2.37	28.59	27.15	Yes
	8/4/2013	1.04	3.04	28.59	27.55	Yes
	8/22/2014	1.66	2.90	28.59	26.93	Yes
	8/25/2015	0.82	3.00	28.59	27.77	Yes
	8/10/2016	1.76	3.00	28.59	26.83	Yes
	8/15/2017	0.00	3.00	28.59	28.59	Yes
	7/28/2018	1.23	3.00	28.59	27.36	Yes
	8/16/2019	0.52	2.92	28.615	28.10	Yes
MW-20	9/3/2009	1.17	2.39	--	--	Yes
	8/2/2010	2.06	2.39	--	--	No
	8/9/2011	1.81	2.33	--	--	No
	8/3/2012	1.11	2.35	31.58	30.47	Yes
	8/4/2013	1.18	3.49	31.58	30.4	Yes
	8/22/2014	2.30	3.34	31.58	29.28	Yes
	8/25/2015	1.10	3.47	31.58	30.48	Yes
	8/11/2016	1.86	3.47	31.58	29.72	Yes
	8/15/2017	0.60	3.47	31.58	30.98	Yes
	7/28/2018	0.30	3.47	31.49	31.28	Yes
	8/16/2019	0.78	3.05	31.625	30.85	Yes
MW-22	11/16/2015	Well Installation				
	7/25/2016	3.82	6.00	--	--	No, developed only
	8/10/2016	3.60	5.09	--	--	Yes
	8/15/2017	2.72	5.09	--	--	Yes
	7/28/2018	3.37	4.95	--	--	Yes
	8/16/2019	2.61	5.56	30.210	27.60	Yes

Table 1 - Monitoring Well Groundwater Levels
Pump Station 1 Former Gasoline Tank Area

Monitoring Well[A]	Date	Depth to Water from Top of Casing (feet)	Sounding Depth of Well from Top of Casing (feet)	Surveyed Top of PVC Casing Elevation (feet above MSL)[B]	Elevation of Water (feet above MSL)[C]	Analytical Sample Collected
MW-23	11/16/2015	Well Installation				
	7/25/2016	2.83	5.80	--	--	No, developed only
	8/10/2016	2.73	4.51	--	--	Yes
	8/15/2017	2.32	4.51	--	--	Yes
	7/28/2018	2.80	4.51	--	--	Yes
	8/16/2019	2.54	5.24	28.540	26.00	Yes

Notes and Abbreviations

A	Wells that were destroyed or decommissioned prior to 2015 are not presented on this table.
B	Survey in 2019 included all existing wells. Previous survey data collected in 2012 was utilized for sampling events between 2012 and 2018.
C	Groundwater elevations from 2012 to 2018 should be considered as approximated values due to repeat well frost-jacking since the last elevation survey in 2012.
--	Data not found or otherwise not available due to lack of current elevation survey.
MSL	mean sea level
PVC	polyvinyl chloride
TOC	top of casing

Table 2 - Groundwater Analytical Results
Pump Station 1 Former Gasoline Tank Area
(All results in mg/L)

Monitoring Well	Sample Designation	Date Sampled	AK 101 Gasoline Range Organics	AK102 Diesel Range Organics	AK 103 Residual Range Organics	BTEX - USEPA Method 8021B/SW8260B[A] Benzene	Toluene	Ethylbenzene	Total Xylenes
2015 ADEC Groundwater Cleanup Levels [B]			2.2	1.5	1.1	0.005	1.0	0.7	10.0
2018 ADEC Groundwater Cleanup Levels [C]			2.2	1.5	1.1	0.0046	1.1	0.015	0.19
MW-2	MW-2	9/4/1994	ND	11.4	--	ND	ND	ND	ND
	MW-2	8/23/1996	ND	14	--	ND	ND	0.0017	ND
	MW-2	8/26/1997	ND	--	--	ND	ND	ND	ND
	MW-2	8/26/1998	ND	6.19	--	ND	ND	ND	ND
	MW-2	8/25/1999	ND	0.53	ND	ND	0.0043	ND	0.0032
	MW-2	8/23/2000	ND	2.21	ND	ND	ND	ND	ND
	MW-2	8/11/2001	ND [0.0900]	0.548	ND [1.05]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-2	8/17/2002	ND [0.0900]	0.553	ND [1.05]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	Sampling discontinued in 2003								
	MW-2	7/29/2009	ND [0.1]	ND [0.8]	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-2	8/2/2010	ND [0.1]	0.678 J	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-27[E]	8/2/2010	ND [0.1]	0.561 J	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	N/A[D]	8/9/2011							
	MW-2	8/4/2012	ND [0.062]	0.436 J	--	ND [0.003]	ND [0.00062]	ND [0.00062]	ND [0.002]
	MW-2	8/4/2013	ND [0.062]	0.256 J	ND [0.312]	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]
	MW-2	8/21/2014	ND [0.05]	0.735	--	ND [0.00025]	0.00297 B	ND [0.0005]	ND [0.001]
	MW-2	8/25/2015	ND [0.05]	0.378 J	--	0.00031 J	0.00032 J	ND [0.0005]	ND [0.0005]
	MW-2	8/10/2016	ND [0.1]	ND [0.588]	--	ND [0.0005]	ND [0.001]	ND [0.001]	ND [0.002]
	MW-2	8/16/2017	ND [0.05]	0.295 J	--	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.001]
	MW-2	7/28/2018	ND [0.05]	0.569 J	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-2	8/16/2019	ND [0.05]	0.321 J,B	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-3	MW-3	9/4/1994	2.14	10.8	--	0.102	0.54	0.059	0.406
	MW-3	8/23/1996	--	--	--	--	--	--	--
	MW-3	8/26/1997	1.12	--	--	0.013	0.042	0.063	0.43
	N/A[D]	8/26/1998							
	MW-3	8/25/1999	0.18	2.1	0.6	0.0038	0.0069	0.0078	0.042
	MW-3	8/23/2000	0.137	1.53	ND	0.00256	0.00214	0.0045	0.053
	MW-3	8/7/2001	ND [0.0900]	2.16	ND [1.01]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-3	8/17/2002	0.141	1.80	ND [1.00]	0.00178	ND [0.002]	0.0024	0.0497
	MW-3	9/6/2003	ND [0.0900]	2.02	0.685	ND [0.0005]	ND [0.002]	0.00297	0.03649
	MW-3	8/26/2004	0.141	1.98	--	0.00725	0.00112	0.00936	0.0635
	MW-3	7/22/2005	ND [0.0900]	0.560	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-3	9/6/2006	0.137	2.47	--	0.00453	ND [0.001]	0.00872	0.0587
	N/A[D]	9/8/2007, 7/31/2008, 7/29/2008, 7/29/2009, 8/2/2010, 8/11/2011							
	MW-3	8/4/2012	ND [0.062]	1.86	--	ND [0.003]	ND [0.00062]	ND [0.00062]	ND [0.002]
	MW-3	8/4/2013	ND [0.062]	0.759	ND [0.312]	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]
	MW-3	8/21/2014	ND [0.05]	2.52	--	0.00017 J	0.00199 B	ND [0.0005]	ND [0.0015]
	MW-3	8/25/2015	ND [0.05]	4.34	--	0.00167 B	0.00046 J	ND [0.0005]	ND [0.0015]
	MW-3	8/10/2016	ND [0.1]	1.1	--	0.00048 J	ND [0.001]	ND [0.001]	ND [0.002]
	MW-3	8/15/2017	ND [0.05]	0.355 J	--	0.00019 J	ND [0.0005]	ND [0.0005]	ND [0.001]
	MW-3	7/28/2018	ND [0.05]	1.14 B	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-3	8/16/2019	ND [0.05]	0.487 J,B	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-4	MW-4	9/4/1994	ND	0.3	--	ND	ND	ND	ND
	MW-4	8/23/1996	ND	1.7	--	ND	0.0011	ND	ND
	MW-4	8/26/1997	ND	--	--	ND	ND	ND	ND
	MW-4	8/26/1998	ND	0.318	--	ND	ND	ND	ND
	MW-4	8/25/1999	ND	1.3	0.47	0.0014	0.0053	ND	0.0037
	MW-4	8/23/2000	ND	0.988	0.878	0.000912	ND	ND	ND
	MW-4	8/11/2001	ND [0.0900]	7.01	1.01	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-4	8/17/2002	ND [0.0900]	0.719	ND [1.09]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-4	9/6/2003	ND [0.0900]	1.07	ND [0.500]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-4	8/26/2004	ND [0.0900]	1.14	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-4	7/22/2005	ND [0.0900]	0.529	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-4	9/6/2006	ND [0.100]	1.24	ND	0.000516	ND [0.002]	ND [0.002]	ND [0.002]
	N/A[D]	9/6/2007: Well not sampled							
	MW-4	8/2/2008	ND [0.100]	0.32 J	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-4	9/3/2009	ND [0.1]	ND [0.833]	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-23[E]	9/3/2009	ND [0.1]	ND [0.8]	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	N/A[D]	8/2/2010, 8/9/2011, 8/4/2012, 8/4/2013							
	MW-4	8/4/2013	ND [0.062]	0.379 J	0.161 J	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]
	N/A[D]	8/22/2014: Sampling not conducted							
	MW-4	8/26/2015	ND [0.05]	ND [0.288]	--	0.00032 J	ND [0.0005]	ND [0.0005]	ND [0.0015]
MW-4R	MW-4R	8/10/2016	ND [0.1]	ND [0.688]	--	0.00029 J	ND [0.001]	ND [0.001]	ND [0.002]
	MW-4R	8/16/2017	ND [0.05]	ND [0.313]	--	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.001]
	MW-4R	7/28/2018	ND [0.05]	0.466 J	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-4R	8/16/2019	0.0314 J	[0.278] UB	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-7	MW-7	9/4/1994	ND	0.2	--	ND	ND	ND	ND
	MW-7	8/23/1996	0.2	0.5	--	**0.027**	0.043	0.0056	0.026
	MW-7	8/26/1997	ND	--	--	ND	ND	ND	ND
	MW-7	8/26/1998	ND	0.117	--	ND	ND	ND	ND
	MW-7	8/25/1999	ND	0.82	0.3	ND	ND	ND	ND
	MW-7	8/23/2000	ND	0.571	ND	ND	ND	ND	ND
	MW-7	8/7/2001	ND [0.0900]	0.559	ND [1.01]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-7	8/16/2002	ND [0.0900]	0.733	ND [1.23]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]

Table 2 - Groundwater Analytical Results
Pump Station 1 Former Gasoline Tank Area
(All results in mg/L)

Monitoring Well	Sample Designation	Date Sampled	AK 101 Gasoline Range Organics	AK102 Diesel Range Organics	AK 103 Residual Range Organics	BTEX - USEPA Method 8021B/SW8260B[A] Benzene	Toluene	Ethylbenzene	Total Xylenes
2015 ADEC Groundwater Cleanup Levels [B]			2.2	1.5	1.1	0.005	1.0	0.7	10.0
2018 ADEC Groundwater Cleanup Levels [C]			2.2	1.5	1.1	0.0046	1.1	0.015	0.19
MW-7 Continued	Sampling discontinued in 2003								
	MW-7	7/28/2009	ND [0.1]	ND [0.714]	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-7	8/2/2010	ND [0.1]	0.63 J	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-7	8/8/2011	ND [0.1]	0.606	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-7	8/5/2012	ND [0.062]	0.387 J	--	0.00015 J	ND [0.00062]	ND [0.00062]	ND [0.002]
	MW-7	8/4/2013	ND [0.062]	0.298 J	ND [0.278]	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]
	MW-7	8/22/2014	ND [0.05]	0.757	--	ND [0.00025]	0.00106 B	ND [0.0005]	ND [0.001]
MW-7R	Monitoring well destroyed; decommissioned in 2015								
	MW-7R	8/11/2016	ND [0.1]	ND [0.641]	--	ND [0.0005]	ND [0.001]	ND [0.001]	ND [0.002]
	MW-7R	8/16/2017	ND [0.05]	0.294 J	--	0.00033 J	0.0005 J	ND [0.0005]	ND [0.001]
	MW-7R	7/28/2018	ND [0.05]	0.62 J	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-7R	8/16/2019	ND [0.05]	[0.278] UB	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-8	MW-8	9/4/1994	0.182	0.4	--	0.0094	0.027	0.013	0.062
	MW-8	8/23/1996	ND	0.6	--	0.0046	0.0082	0.003	0.015
	MW-8	8/26/1997	0.172	--	--	0.0038	0.0091	0.011	0.055
	MW-8	8/26/1998	0.716	0.404	--	0.023	0.061	0.039	0.205
	MW-11[E]	8/27/1998	0.709	0.494	--	0.023	0.059	0.041	0.199
	MW-8	8/25/1999	ND	0.29	1.3	0.0039	0.0031	0.0039	0.0197
	MW-8	8/23/2000	1.03	1.87	1.1	0.0346	0.0704	0.0456	0.2234
	MW-8	8/11/2001	0.784	1.65	ND [0.990]	0.0354	0.069	0.0565	0.271
	MW-16[E]	8/11/2001	1.27	1.47	ND [0.990]	0.0478	0.105	0.0928	0.444
	MW-8	8/17/2002	2.05	1.59	ND [1.03]	0.115	0.111	0.103	0.495
	MW-8	9/6/2003	1.9	1.65	0.602	0.473	0.143	0.104	0.517
	MW-8	8/26/2004	4.89	2.60	--	0.977	0.251	0.168	0.875
	MW-8	7/22/2005	4.15	1.76	--	1.250	0.224	0.132	0.687
	FGTA-Dup-1[E]	7/22/2005	4.88	2.75	--	1.340	0.272	0.143	0.745
	MW-8	9/5/2006	14.3	2.53	0.0000669	6.96	1.79	0.227	1.17
	MW-8	9/8/2007	5.57	--	--	2.1	0.222	0.0686	0.246
	MW-8	8/1/2008	5.22	1.18	--	2.68	0.528	0.0637	0.361
	MW-20[E]	8/1/2008	5.94	1.29	--	2.91	0.619	0.076	0.42
	MW-8	7/29/2009	2.08	0.439 J	--	0.61	0.212	0.047	0.2333
	MW-8	8/2/2010	4.72	1.27	--	2.21	0.450	0.060	0.274
	MW-8	8/9/2011	3.48	1.36	--	1.54	0.304	0.0197 J	0.0761
	MW-8	8/4/2012	4.34	0.793	--	1.56	0.690	0.031	0.1358
	MW-24[E]	8/4/2012	4.91	1.09	--	1.68	0.840	0.037	0.1625
	MW-8	8/4/2013	0.14	0.265 J	ND [0.326]	0.0459	0.0149	0.00038 J	0.00186 J
	MW-8	8/22/2014	23.0	1.27	--	3.19	8.16	0.159	0.752
	MW-8	8/25/2015	5.33	0.56 J	--	0.994	2.04	0.0141	0.0609
	MW-8	8/11/2016	**10.7**	0.46 J	--	**1.26**	**3.7**	**0.10**	**0.463**
	MW-8	8/16/2017	2.02	0.407 J	--	**0.355**	0.61	0.01	0.0555
	MW-8	7/28/2018	**4.46**	0.676 B	--	**1.11**	0.343	**1.46**	0.146
	MW-8	8/16/2019	**4.05**	0.58 B	--	**1.08**	**1.15**	**0.0218**	0.0872
MW-9	MW-9	9/4/1994	0.07	0.2	--	0.0388	ND	ND	ND
	MW-9	8/23/1996	0.14	0.3	--	0.052	0.0011	ND	ND
	MW-9	8/26/1997	0.099	--	--	0.04	ND	ND	0.0015
	MW-9	8/26/1998	1.16	0.34	--	0.4	0.001	ND	0.003
	MW-9	8/25/1999	3.4	0.58	ND	1.5	0.099	0.012	0.067
	MW-9	8/23/2000	8.64	0.976	ND	4.29	ND	ND	ND
	MW-16[E]	8/23/2000	9.8	1.02	ND	4.25	ND	ND	ND
	MW-9	8/11/2001	13.9	0.849	ND [1.00]	6.86	0.188	0.0196	0.2661
	MW-17[E]	8/11/2001	15.2	0.787	ND [1.00]	7.32	0.603	0.0241	0.0884
	MW-9	8/16/2002	48.5	1.77	ND [1.00]	17	5.64	0.254	1.377
	MW-20[E]	8/16/2002	45.2	1.70	ND [1.00]	15.6	4.59	0.204	1.173
	MW-9	9/6/2003	27.9	1.48	ND [0.500]	9.12	3.95	0.751	5.04
	MW-9	8/26/2004	27.2	0.71	--	3.69	0.0638	0.405	2.72
	MW-9	7/22/2005	23.6	1.17	--	6.84	0.446	0.685	5.260
	MW-9	9/5/2006	27.1	2.85	--	9.36	0.833	0.835	8.22
	MW-9	9/7/2007	12.6	3.53	--	1.69	1.19	0.297	2.69
	MW-9	8/2/2008	27.3	1.07	--	3.75	4.84	0.608	4.95
	MW-21[E]	8/2/2008	29.6	1.56	--	4.27	4.98	0.629	5.18
	MW-9	7/29/2009	53	2.62	--	6.67	10.4	1.17	8.46
	MW-23[E]	7/29/2009	62.1	2.39	--	7.91	12.3	1.44	10.39
	MW-9	8/2/2010	56.3	2.45	--	8.7	14.2	1.38	9.01
	MW-9	8/9/2011	23.7	2.98	--	4.47	5.02	0.572	3.48
	MW-9	8/3/2012	14.0	1.86	--	3.91	0.851	0.350	2.226
	MW-9	8/4/2013	4.16 J	0.467 J	ND [0.312]	1.09 J	0.253 J	0.0756 J	0.494 J
	MW-98[E]	8/4/2013	5.8 J	0.492 J	0.176 J	1.59 J	0.394 J	0.113 J	0.728 J
	MW-9	8/22/2014	40.5	1.86	--	6.46	10.2	0.705	4.31
	MW-98[E]	8/22/2014	40.7	2.09	--	6.58	10.4	0.732	4.46
	MW-9	8/25/2015	16.8	1.07	--	2.87	2.27	0.694	4.12
	MW-98[E]	8/25/2015	14.4	1.12	--	2.66	1.94	0.562	3.35
	MW-9	8/10/2016	**30.8**	1.11	--	**3.96**	**5.18**	**1.50**	**8.31**
	MW-9	8/15/2017	**14.5**	0.637 MN	--	**2.24 QH**	**2.92**	**0.803**	**4.29**
	MW-99[E]	8/15/2017	**14.8**	1.09 MN	--	**1.81**	**2.36**	**0.672**	**3.64**

Table 2 - Groundwater Analytical Results
Pump Station 1 Former Gasoline Tank Area
(All results in mg/L)

Monitoring Well	Sample Designation	Date Sampled	AK 101	AK102	AK 103	BTEX - USEPA Method 8021B/SW8260B[A]			
			Gasoline Range Organics	Diesel Range Organics	Residual Range Organics	Benzene	Toluene	Ethylbenzene	Total Xylenes
2015 ADEC Groundwater Cleanup Levels [B]			2.2	1.5	1.1	0.005	1.0	0.7	10.0
2018 ADEC Groundwater Cleanup Levels [C]			2.2	1.5	1.1	0.0046	1.1	0.015	0.19
MW-9 Continued	MW-9	7/28/2018	**15.2**	1.48	--	**1.40**	**0.932**	**0.820**	**5.05**
	MW-99[E]	7/28/2018	**15.0**	1.25 B	--	**1.51**	**0.992**	**0.913**	**5.37**
	MW-9	8/16/2019	**24.9**	1.38	--	**1.85**	0.647	**1.700**	**8.46**
	MW-99[E]	8/16/2019	**22.8**	1.35	--	**1.77**	0.622	**1.700**	**8.45**
MW-12	MW-12	8/26/1999	ND	0.32	0.85	ND	0.0024	ND	ND
	MW-12	8/23/2000	ND	0.318	0.656	ND	ND	ND	ND
	MW-12	8/11/2001	ND [0.0900]	0.645	ND [0.990]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-12	8/16/2002	ND [0.0900]	ND [0.495]	ND [0.990]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	Sampling discontinued in 2003								
	MW-12	9/6/2006	ND [0.100]	ND [0.330]	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	Sampling discontinued in 2007								
	MW-12	7/30/2009	ND [0.1]	ND [0.714]	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-12	8/1/2010	ND [0.1]	ND [0.769]	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-12	8/9/2011	ND [0.1]	0.304 J	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-12	8/5/2012	ND [0.062]	0.343 J	--	ND [0.003]	ND [0.00062]	ND [0.00062]	ND [0.002]
	MW-12	8/3/2013	ND [0.062]	0.355 J	ND [0.312]	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]
	MW-12	8/22/2014	ND [0.05]	0.335 J	--	0.00089	0.00241 B	ND [0.0005]	ND [0.001]
	MW-12	8/25/2015	ND [0.05]	ND [0.306]	--	0.00032 J	0.00137	ND [0.0005]	ND [0.0015]
	MW-12	8/11/2016	ND [0.1]	ND [0.6]	--	ND [0.0005]	ND [0.001]	ND [0.001]	ND [0.002]
	MW-12	8/15/2017	0.0355 J	0.194 J	--	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.001]
	MW-12	7/28/2018	ND [0.05]	0.306 J	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-12	8/16/2019	ND [0.05]	[0.294] UB	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-13	MW-13	8/26/1999	ND	0.58	0.53	ND	ND	ND	ND
	MW-16[E]	8/25/1999	ND	0.65	0.52	ND	0.0012	0.0011	0.0065
	MW-13	8/23/2000	ND	0.353	0.675	ND	ND	ND	ND
	MW-13	8/11/2001	ND [0.0900]	ND [0.556]	ND [1.11]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-13	8/16/2002	ND [0.0900]	ND [0.515]	ND [1.03]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	Sampling discontinued in 2003								
	MW-13	9/6/2006	ND [0.100]	ND [0.324]	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	Sampling discontinued in 2007								
	N/A[D]	7/30/2009, 8/1/2010							
	MW-13	8/8/2011	ND [0.1]	0.193 J	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	N/A[D]	8/5/2012	--	--	--	--	--	--	--
	MW-13	8/3/2013	ND [0.062]	ND [0.376]	ND [0.312]	0.0002 J	ND [0.00062]	ND [0.00062]	ND [0.00186]
	MW-13	8/22/2014	ND [0.05]	ND [0.306]	--	0.00118	0.00357 B	ND [0.0005]	0.00097 J
	MW-99[E]	8/22/2014	0.0323 J	ND [0.319]	--	0.00107	0.00606 B,J	ND [0.0005]	ND [0.001]
	MW-13	8/25/2015	ND [0.05]	0.265 J	--	0.00031 J	0.00036 J	ND [0.0005]	ND [0.0015]
	MW-13	8/11/2016	ND [0.1]	ND [0.658]	--	ND [0.0005]	ND [0.001]	ND [0.001]	ND [0.002]
	MW-13	8/15/2017	ND [0.05]	ND [0.308]	--	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.001]
	MW-13	7/28/2018	ND [0.05]	ND [0.305]	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-13	8/16/2019	ND [0.05]	[0.278] UB	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-14	MW-14	8/26/1999	ND	16	ND	ND	ND	ND	ND
	MW-14	8/23/2000	ND	1.53	0.689	ND	ND	ND	ND
	MW-14	8/11/2001	ND [0.0900]	26.9	ND [1.98]	ND [0.0005]	0.000304	ND [0.002]	0.0049
	MW-14	8/16/2002	ND [0.0900]	0.682	ND [1.00]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-14	9/6/2003	ND [0.0900]	0.308	ND [0.510]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-14	8/26/2004	ND [0.0900]	4.48	--	ND [0.0005]	ND [0.002]	0.00291	0.0106
	MW-14	7/22/2005	ND [0.0900]	10.5	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-14	9/5/2006	ND [0.100]	3.5	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	MW-14	9/6/2007	0.338	44.3	--	ND [0.0005]	ND [0.002]	ND [0.002]	0.00573
	MW-14	8/2/2008	0.0172 J	0.449	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	N/A[D]	7/30/2009, 8/1/2010							
	MW-14	8/8/2011	0.325	53.4	--	0.00021 J	ND [0.002]	0.141	0.01515 J
	MW-14	8/5/2012	0.248	64.5	--	0.0005	0.00114	ND [0.00062]	0.00332 J
	MW-14	8/3/2013	0.224 J	33.3	0.185 J	0.00033 J	0.0014 J	0.00038 J	0.00647 J
	MW-99[E]	8/3/2013	0.12 B,J	32.1	0.266 J	0.0002 J	0.00079 J	ND [0.00062]	0.00365 J
	Monitoring well destroyed; decommissioned in 2014								
MW-14R	MW-14R	8/11/2016	0.0917 J	**106**	--	0.0004 J	0.00169	0.00551	0.00287 J
	MW-14R	8/15/2017	0.0335 J	**7.32**	--	ND [0.00025]	ND [0.0005]	ND [0.0005]	0.00041 J
	MW-14R	7/28/2018	ND [0.05]	0.571 J	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-14R	8/16/2019	ND [0.05]	[0.283] UB	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-15	MW-15	8/11/2001	0.865	284	ND [21.1]	0.00368	0.0711	0.0221	0.1491
	MW-15	8/16/2002	2.11	327	ND [50.0]	0.00421	0.0472	0.0384	0.263
	MW-15	9/6/2003	1.8	380	ND [26.3]	0.00694	0.0988	0.047	0.248
	MW-15[E]	9/6/2003	1.54	364	ND [25.0]	0.00438	0.0523	0.0349	0.188
	MW-15	8/26/2004	3.07	784	--	0.00595	0.0601	0.0329	0.2238
	MW-15	7/22/2005	2.81	460	--	0.00597	0.0485	0.0310	0.2341
	FGTA-Dup-2[E]	7/22/2005	2.91	368	--	ND [0.0005]	0.0556	0.0334	0.260
	MW-15	9/5/2006	1.22	225	--	0.00224	0.029	0.0271	0.720
	MW-15	9/6/2007	2.59	438	--	0.00546	0.0432	0.0185	0.190
	Dup-1[E]	9/6/2007	2.51	509	--	0.00467	0.0393	0.0169	0.174
	MW-15	8/2/2008	0.042 J	2.44	--	ND [0.0004]	ND [0.001]	ND [0.001]	0.00189 J
	MW-15	7/30/2009	2.07	277	--	0.0105	0.0699	0.0347	0.244
	MW-15	8/1/2010	1.35	331	--	0.00456	0.0504	0.0235	0.1955

Table 2 - Groundwater Analytical Results
Pump Station 1 Former Gasoline Tank Area
(All results in mg/L)

Monitoring Well	Sample Designation	Date Sampled	AK 101 Gasoline Range Organics	AK102 Diesel Range Organics	AK 103 Residual Range Organics	BTEX - USEPA Method 8021B/SW8260B[A] Benzene	Toluene	Ethylbenzene	Total Xylenes
2015 ADEC Groundwater Cleanup Levels [B]			2.2	1.5	1.1	0.005	1.0	0.7	10.0
2018 ADEC Groundwater Cleanup Levels [C]			2.2	1.5	1.1	0.0046	1.1	0.015	0.19
MW-15 Continued	MW-24[E]	8/1/2010	1.31	275	--	0.0047	0.0501	0.0241	0.1911
	MW-15	8/8/2011	0.988	131	--	0.00393	0.0568	0.0259	0.1872
	MW-24[E]	8/8/2011	1.06	288	--	0.00406	0.0574	0.0268	0.1918
	MW-15	8/5/2012	0.881	206	--	0.0046	0.0479	0.0252	0.1601
	MW-15	8/3/2013	1.09	102	0.37 J	0.00932	0.0619	0.0415	0.242
	MW-15	8/21/2014	0.75	120	--	0.00726	0.0451 B	0.0396	0.246
	MW-15	8/25/2015	0.371	69.0	--	0.00795	0.0329	0.0174	0.1134
	MW-15	8/11/2016	0.7	**126**	--	**0.0151**	0.0837	**0.0399**	**0.263**
	MW-15	8/16/2017	0.374	**14.3**	--	**0.0213**	0.0373	**0.0195**	0.119
	MW-15	7/28/2018	0.632	**48.8**	--	**0.0748**	0.0277	**0.0696**	0.182
	MW-15	8/16/2019	0.287	**5.76**	--	**0.0253**	0.0346	0.0113	0.0724
MW-16	MW-16	8/17/2002	ND [0.0900]	1.55	ND [1.00]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-16	9/6/2003	0.255	ND [0.297]	ND [0.495]	`	0.0362	0.00664	0.02593
	MW-16	8/26/2004	ND [0.0900]	0.995	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	MW-16	7/22/2005	ND [0.0900]	ND [0.323]	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-16	9/6/2006	ND [0.100]	ND [0.311]	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	FGTA-Dup-4[E]	9/6/2006	ND [0.100]	ND [0.317]	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	MW-16	9/7/2007	ND [0.100]	--	--	0.00143	0.00689	ND [0.002]	0.00728
	MW-16	8/3/2008	ND [0.100]	0.233 J	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.00200]
	N/A[D]	7/30/2009, 8/1/2010, 8/9/2011, 8/4/2012							
	MW-16	8/4/2013	ND [0.062]	0.245 J	ND [0.312]	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]
	N/A	8/22/2014: Sampling not conducted							
	MW-16	8/26/2015	ND [0.05]	0.315 J	--	0.00036 J	0.0004 J	ND [0.0005]	ND [0.0015]
MW-16R	MW-16R	8/10/2016	ND [0.1]	ND [0.615]	--	ND [0.0005]	ND [0.001]	ND [0.001]	ND [0.002]
	MW-16R	8/15/2017	ND [0.05]	0.198 J	--	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.001]
	MW-16R	7/28/2018	ND [0.05]	0.873 B	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-16R	8/16/2019	ND [0.05]	0.359 J,B	--	0.00025 J	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-17	MW-17	8/17/2002	ND [0.0900]	1.00	ND [0.990]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-17	9/6/2003	0.0995	0.43	ND [0.500]	ND [0.0005]	0.0203	0.00326	0.01448
	MW-17	8/26/2004	ND [0.0900]	1.91	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	MW-17	7/22/2005	ND [0.0900]	0.872	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-17	9/6/2006	ND [0.100]	ND [0.321]	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	MW-17	9/7/2007	ND [0.100]	0.519	--	ND [0.0005]	0.00374	ND [0.00200]	0.00281
	MW-17	8/2/2008	0.0518 J	0.465	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	MW-17	7/30/2009	ND [0.1]	0.418 J	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	N/A[D]	8/1/2010, 8/9/2011, 8/4/2012							
	MW-17	8/4/2013	0.0362 J	1.04	ND [0.312]	0.00065	ND [0.00062]	ND [0.00062]	0.00217 J
	N/A	8/22/2014: Sampling not conducted							
	MW-17	8/26/2015	ND [0.05]	3.14	--	0.00116 B	0.00049 J	ND [0.0005]	0.00143
MW-17R	MW-17R	8/10/2016	ND [0.1]	0.542 J	--	0.00138	0.00038 J	0.00045 J	0.00225 J
	MW-17R	8/15/2017	ND [0.05]	**2.9**	--	0.00015 J	ND [0.0005]	ND [0.0005]	0.00065 J
	MW-17R	7/28/2018	ND [0.05]	**2.37**	--	0.0011	0.00087	ND [0.0005]	0.00401
	MW-17R	8/16/2019	0.0454 J	**2.06**	--	0.00268	0.00146	0.00133	0.00972
MW-18	MW-18	9/6/2003	0.137	1.20	0.583	ND [0.0005]	0.0176	0.00225	0.01056
	MW-18	8/26/2004	ND [0.0900]	1.61	--	0.00078	ND [0.001]	ND [0.001]	ND [0.001]
	MW-18	7/22/2005	0.0917	0.600	--	0.00086	ND [0.002]	ND [0.002]	ND [0.002]
	MW-18	9/6/2006	0.124	0.901	--	0.00054	ND [0.001]	ND [0.001]	ND [0.001]
	FGTA-Dup-3[E]	9/6/2006	--	--	--	0.0006	ND [0.001]	ND [0.001]	ND [0.001]
	MW-18	9/8/2007	ND [0.100]	1.54	--	0.00138	0.00265	ND [0.00200]	0.00226
	MW-18	8/2/2008	0.0446 J	0.442	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.001]
	MW-18	7/29/2009	ND [0.1]	0.848	--	0.00087	ND [0.002]	ND [0.002]	ND [0.002]
	MW-18	8/1/2010	0.0492 J	0.679 J	--	0.0012	ND [0.002]	ND [0.002]	ND [0.002]
	MW-18	8/8/2011	0.0762 J	0.724	--	0.00399	0.00062 J	ND [0.002]	ND [0.002]
	MW-18	8/4/2012	0.699	0.894	--	0.405	0.00055 J	ND [0.00062]	0.360 J
	MW-18	8/4/2013	2.29	0.519 J	ND [0.312]	0.714	0.225	0.0148	0.0702
	MW-18	8/22/2014	2.2	0.675	--	0.487	0.033 B	0.102	0.2959
	MW-18	8/25/2015	0.756	0.555 J	--	0.145	0.0055	0.0437	0.06982
	MW-99[E]	8/25/2015	0.776	0.499 J	--	0.15	0.00548	0.0453	0.07259
	MW-18	8/10/2016	0.803 QH	ND [0.6]	--	**0.157**	0.00386	**0.0465**	**0.05628** MN
	MW-98[E]	8/10/2016	0.772 QH	0.207 J	--	**0.150**	0.0038	**0.0454**	**0.04925** MN
	MW-18	8/15/2017	0.161	0.243 J	--	**0.0233**	0.00099 J	0.00815	0.00827 J
	MW-98[E]	8/15/2017	0.198	0.208 J	--	**0.0289** B	0.00119	0.0107	0.001095 J
	MW-18	7/28/2018	0.208	[0.228] UB	--	**0.329**	0.00951	0.00087 J	0.00892
	MW-98[E]	7/28/2018	0.197	ND [0.3]	--	**0.342**	0.00987	0.001 J	0.00915
	MW-18	8/16/2019	0.0804 J	0.503 J,B	--	**0.00688**	0.00041 J	0.002	0.00232 J
	MW-98[E]	8/16/2019	0.106	[0.278] UB	--	**0.00836**	0.00059 J	0.003	0.00324
MW-19	MW-19	9/6/2003	0.753	0.41	ND [0.500]	0.434	0.0109	0.00284	0.01053
	MW-19	8/26/2004	2.61	0.82	--	0.121	0.00147	0.00105	0.00188
	FGTA-Dup-1[E]	8/26/2004	2.39	0.80	--	0.247	0.0014	ND [0.001]	0.00152
	MW-19	7/22/2005	1.48	0.659	--	0.724	ND [0.002]	ND [0.002]	ND [0.002]
	MW-19	9/6/2006	1.78	0.509	--	0.262	0.00118	ND [0.001]	ND [0.001]
	MW-19	9/6/2007	1.32	0.734	--	1.06	ND [0.001]	ND [0.001]	ND [0.001]
	MW-19	8/2/2008	1.44	0.399	--	0.656	ND [0.001]	0.00095 J	0.0019 J
	MW-19	7/30/2009	2.27	ND [0.816]	--	1.38	0.0393	0.0327	0.496

Table 2 - Groundwater Analytical Results
Pump Station 1 Former Gasoline Tank Area
(All results in mg/L)

Monitoring Well	Sample Designation	Date Sampled	AK 101 Gasoline Range Organics	AK102 Diesel Range Organics	AK 103 Residual Range Organics	BTEX - USEPA Method 8021B/SW8260B[A] Benzene	Toluene	Ethylbenzene	Total Xylenes
2015 ADEC Groundwater Cleanup Levels [B]			2.2	1.5	1.1	0.005	1.0	0.7	10.0
2018 ADEC Groundwater Cleanup Levels [C]			2.2	1.5	1.1	0.0046	1.1	0.015	0.19
MW-19 Continued	MW-19	8/1/2010	3.6	1.29	--	1.67	0.00162 J	0.032	0.0492
	MW-19	8/9/2011	9.2	1.44	--	4.21	ND [0.02]	0.249	0.912
	MW-19	8/4/2012	14.4	1.06	--	3.84	0.468	0.514	2.930
	MW-22[E]	8/4/2012	13.9	1.23	--	3.78	0.444	0.474	2.720
	MW-19	8/4/2013	19.2	0.805	0.662	4.97	0.409	0.341	1.806
	MW-19	8/22/2014	22.8	1.4	--	5.56	1.29	0.706	4.06
	MW-19	8/25/2015	13.8	1.42	--	3.93	0.0265 J	0.615	3.38
	MW-19	8/10/2016	**13.9**	0.955	--	**3.18**	0.00855	**0.764**	**4.55**
	MW-19	8/15/2017	**9.59**	0.739	--	**2.54** QH	0.00403 MH	**0.582**	**3.18**
	MW-19	7/28/2018	**18.5**	**1.52**	--	**2.93**	**1.16**	**0.0152** J	**6.39**
	MW-19	8/16/2019	**17.4**	0.851 B	--	**2.34**	0.00399	**1.18**	**5.27**
MW-20	FGTA MW-20	9/3/2009	5.03	0.33 J	--	0.0932	1.34	0.165	1.093
	N/A[D]	8/2/2010, 8/9/2011							
	MW-20	8/3/2012	0.0436 J	0.468 J	--	0.0103	ND [0.00062]	0.000350	ND [0.002]
	MW-20	8/4/2013	0.0382 J	0.333 J	ND [0.34]	0.00077	ND [0.00062]	ND [0.00062]	ND [0.00186]
	MW-20	8/22/2014	0.0476 J	ND [0.334]	--	0.00714	0.00218 B	0.00349	0.00166 J
	MW-20	8/25/2015	ND [0.05]	0.382 J	--	0.00383	0.0006 J	ND [0.0005]	ND [0.0015]
	MW-20	8/11/2016	ND [0.1]	ND [0.625]	--	0.0025	ND [0.001]	ND [0.001]	ND [0.002]
	MW-99[E]	8/11/2016	ND [0.1]	ND [0.615]	--	0.00311	ND [0.001]	ND [0.001]	ND [0.002]
	MW-20	8/16/2017	0.087 J	0.264 J	--	0.00251 B	ND [0.0005]	**0.0187**	0.00157 J
	MW-20	7/28/2018	ND [0.05]	0.401 J	--	0.00308	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-20	8/16/2019	ND [0.05]	0.317 J,B	--	0.00254	ND [0.0005]	0.00046 J	ND [0.001]
MW-22	Monitoring Well Installed in 2015								
	MW-22	8/10/2016	ND [0.1]	0.5 J		ND [0.0005]	ND [0.001]	ND [0.001]	ND [0.002]
	MW-22	8/15/2017	ND [0.05]	0.725	--	0.00018 J	ND [0.0005]	ND [0.0005]	ND [0.001]
	MW-22	7/28/2018	ND [0.05]	0.892 B	--	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-22	8/16/2019	ND [0.05]	0.83 B	--	0.00018 J	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-23	Monitoring Well Installed in 2015								
	MW-23	8/10/2016	0.0444 J	0.266 J		**0.0107**	ND [0.001]	ND [0.001]	ND [0.002]
	MW-23	8/15/2017	0.221	0.306 J	--	**0.0505**	ND [0.0005]	**0.025**	0.0218
	MW-23	7/28/2018	0.115	0.65 B	--	**0.0521**	0.00241	ND [0.0005]	0.00456
	MW-23	8/16/2019	0.181	0.436 J,B	--	**0.0375**	ND [0.0005]	0.0079	0.0153

Notes:

1.5	Shaded results exceeded ADEC 2015 cleanup levels; see Note [B] below
1.5	Results in **bold** exceed ADEC 2018 cleanup levels; see Note [C] below
A	BTEX sample results prior to 2017 were obtained by USEPA Method SW8021, Sample results for 2018 and were obtained by USEPA Method SW8260B. Full petroleum hydrocarbon volatile organic compound results for 2018 are shown on Table 4.
B	Sample results prior to 2015 were compared with ADEC 2015 cleanup levels (18 AAC 75), as revised on June 17, 2015
C	Sample Results for 2016, 2017, and 2018 were compared with ADEC 2018 cleanup levels (18 AAC 75), as amended through October 27, 2018. Concentration units of mg/L are used for consistency with historical data.
D	Well could not be sampled due to construction, obstructions, or well damage
E	Duplicate of preceding sample
ND [0.062]	Bracketed values prior to 2012 are given as the limit of quantitation or practical quantitation limit

Data Flags:

B	Estimated value with potential high bias due to an associated blank contamination
J	Estimated value below the LOQ (2015 and later)
M	Estimated value due to matrix. An "H," "L," or "N" indicates high, low, or unknown bias.
Q	Estimated value due to a quality control failure. An "H," "L," or "N," indicates high, low, or unknown bias.
UB	Non-detect. Associated blank detection.

Abbreviations

--	not analyzed
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Method
BTEX	benzene, toluene, ethylbenzene, and xylenes
LOQ	limit of quantitation
mg/L	milligrams per liter
N/A	not applicable
ND	not detected at or above the [Limit of Detection]
USEPA	U.S. Environmental Protection Agency

Table 3 - Groundwater PVOC Results
Pump Station 1 Former Gasoline Tank Area
(Results presented in mg/L)

Monitoring Well	Sample Designation	Date Sampled	Petroleum VOCs - USEPA Method SW8260C[A]															
			1,2,4-Trimethyl benzene	1,2-Dibromo ethane[B]	1,2-Dichloro ethane[B]	1,3,5-Trimethyl benzene	Benzene	Ethyl benzene	Isopropyl benzene (cumene)	Methyl-t-butyl ether	Naphthalene	n-Butyl benzene	o-Xylene	P & M -Xylene	sec-Butyl benzene	tert-Butyl benzene	Toluene	Xylenes (total)[D]
2018 ADEC Groundwater Cleanup Level[C]			0.056	0.000075	0.0017	0.06	0.0046	0.015	0.45	0.14	0.0017	1	--	--	2	0.69	1.1	0.19
MW-2	MW-2	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-2	8/16/2019	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-3	MW-3	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-3	8/16/2019	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-4	MW-4R	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-4R	8/16/2019	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-7	MW-7R	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-7R	8/16/2019	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-8	MW-8	7/28/2018	0.00685	ND [0.0000375]	0.00015 J	0.00233	**1.11**	**0.0343**	0.00161	ND [0.005]	**0.00341**	ND [0.0005]	0.0716	0.0749	ND [0.0005]	ND [0.0005]	**1.46**	0.146
	MW-8	8/16/2019	0.00381	ND [0.0000375]	ND [0.00025]	0.00129	**1.08**	**0.0218**	0.00092 J	ND [0.005]	**0.00182**	ND [0.0005]	0.0454	0.0418	ND [0.0005]	ND [0.0005]	**1.15**	0.0872
MW-9	MW-9	8/15/2017	**0.144**	--	--	0.04	**2.1**	**0.748**	0.0254	ND [0.25]	**0.00183**	ND [0.025]	1.55	2.84	ND [0.25]	ND [0.25]	**2.81**	**4.39**
	MW-99[E]	8/15/2017	**0.148**	--	--	0.0409	**2.2**	**0.816**	0.0261	ND [0.25]	**0.00178**	0.0155	1.63	3.02	ND [0.25]	ND [0.25]	**3.09**	**4.65**
	MW-9	7/28/2018	**0.263**	ND [0.00188]	ND [0.0125]	**0.076**	**1.4**	**0.932**	0.047 J J	ND [0.25]	ND [0.025]	ND [0.025]	1.57	3.48	ND [0.025]	ND [0.025]	0.82	**5.05**
	MW-99[E]	7/28/2018	**0.266**	ND [0.00188]	ND [0.0125]	**0.0775**	**1.51**	**0.992**	0.0515	ND [0.25]	ND [0.025]	ND [0.025]	1.68	3.68	ND [0.025]	ND [0.025]	0.913	**5.37**
	MW-9	8/16/2019	**0.523**	ND [0.0000375]	ND [0.00025]	**0.183**	**1.85**	**1.7**	0.106	ND [0.005]	**0.00796**	ND [0.0005]	2.58	5.88	ND [0.0005]	0.0008 J	0.647	**8.46**
	MW-99[E]	8/16/2019	**0.600**	ND [0.00075]	ND [0.005]	**0.18**	**1.77**	**1.7**	0.0966	ND [0.005]	**0.00773**	ND [0.0005]	2.62	5.83	ND [0.0005]	ND [0.0005]	0.622	**8.45**
MW-12	MW-12	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-12	8/16/2019	ND [0.0005] UJ	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005] UJ	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ
MW-13	MW-13	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-13	8/16/2019	ND [0.0005] UJ	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005] UJ	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ
MW-14	MW-14R	8/15/2017	ND [0.0005]	--	--	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	0.00031 J	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-14R	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-14R	8/16/2019	ND [0.0005] UJ	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005] UJ	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ
MW-15	MW-15	7/28/2018	0.0238	ND [0.0000375]	ND [0.00025]	0.00952	**0.0784**	**0.0277**	0.00427	ND [0.005]	**0.00865**	ND [0.0005]	0.0719	0.11	0.00067 J	ND [0.0005]	0.0696	0.182
	MW-15	8/16/2019	0.0105 Q	ND [0.0000375]	ND [0.00025]	0.00421	**0.0253**	0.0113 Q	0.00187	ND [0.005]	**0.0033**	ND [0.0005]	0.0284	0.0441 Q	ND [0.0005]	ND [0.0005]	0.0346	0.0724 Q
MW-16R	MW-16R	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-16R	8/16/2019	ND [0.0005] UJ	ND [0.0000375]	ND [0.00025]	ND [0.0005]	0.00025 J	ND [0.0005] UJ	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ
MW-17	MW-17R	7/28/2018	0.00054 J	ND [0.0000375]	ND [0.00025] J	0.00038 J	0.0011	0.00087 J	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	0.00235	0.00166 J	ND [0.0005]	ND [0.0005]	ND [0.0005]	0.00401
	MW-17R	8/16/2019	0.00078 J,Q	ND [0.0000375]	ND [0.00025]	0.00059 J	0.00268	0.00133 Q	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	0.00525	0.00447 Q	ND [0.0005]	ND [0.0005]	0.00146	0.00972 Q
MW-18	MW-18	7/28/2018	0.0154	ND [0.0000375]	ND [0.00025]	0.00633	**0.0329**	0.00951	0.00311	ND [0.005]	ND [0.0005]	ND [0.0005]	0.00049 J	0.00843	ND [0.0005]	ND [0.0005]	0.00087 J	0.00892
	MW-98[E]	7/28/2018	0.0148	ND [0.0000375]	ND [0.00025]	0.00613	**0.0342**	0.00987	0.00326	ND [0.005]	ND [0.0005]	ND [0.0005]	0.00042 J	0.00873	ND [0.0005]	ND [0.0005]	0.00095 J	0.00915
	MW-18	8/16/2019	0.00343 Q	ND [0.0000375]	ND [0.00025]	0.00145	**0.00688**	0.0023 Q	0.00063 J	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	0.00232 Q	ND [0.0005]	ND [0.0005]	0.00041 J	0.00232 J,Q
	MW-98[E]	8/16/2019	0.00476 Q	ND [0.0000375]	ND [0.00025]	0.00197	**0.00836**	0.00326 Q	0.00088 J	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	0.00324 Q	ND [0.0005]	ND [0.0005]	0.00059 J	0.00324 Q
MW-19	MW-19	7/28/2018	**0.0716**	ND [0.00075]	ND [0.005]	0.0206	**2.93**	**1.16**	0.0166 J	ND [0.1]	ND [0.01]	ND [0.01]	2.02	4.38	ND [0.01]	ND [0.01]	0.0152 J	**6.39**
	MW-19	8/16/2019	**0.0984** Q	ND [0.0000375]	ND [0.00025]	0.0263	**2.34**	**1.18** Q	0.0275	ND [0.005]	**0.00232**	ND [0.0005]	1.42	3.85 Q	ND [0.0005]	ND [0.0005]	0.00399	**5.27** Q
MW-20	MW-20	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	0.00308	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-20	8/16/2019	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	0.00254	0.00046 J	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]
MW-22	MW-22	7/28/2018	ND [0.0005]	ND [0.0000375]	ND [0.00025]	ND [0.0005]	ND [0.0002]	ND [0.0005]	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.0015]
	MW-22	8/16/2019	ND [0.0005] UJ	ND [0.0000375]	ND [0.00025]	ND [0.0005]	0.00018 J	ND [0.0005] UJ	ND [0.0005]	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ	ND [0.0005]	ND [0.0005]	ND [0.0005]	ND [0.001] UJ
MW-23	MW-23	7/28/2018	0.00056 J	ND [0.0000375]	ND [0.00025] J	0.00035 J	**0.0521**	0.00241	0.00033 J	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	0.00456	ND [0.0005]	ND [0.0005]	ND [0.0005]	0.00456
	MW-23	8/16/2019	0.00774 Q	ND [0.0000375]	ND [0.00025]	0.00564	**0.0375**	0.0079 Q	0.00259	ND [0.005]	ND [0.0005]	ND [0.0005]	ND [0.0005]	0.0153 Q	ND [0.0005]	ND [0.0005]	ND [0.0005]	0.0153 Q

Notes

1.5	Results in **bold** exceed ADEC 2018 cleanup levels; see Note[C] below
[0.000375]	Shading indicates non-detect results with LODs above the applicable ADEC cleanup level.
A	The field sample identification number and date collected are provided. BTEX congeners are also reported on Report **Table 2A**.
B	Analytes 1,2-dibromoethane and 1,2-dichloroethane were substituted for n-propylbenzene and styrene beginning in 2018 at the request of ADEC. Prior results for n-propylbenzene and styrene (MW-18 only) were below ADEC 2018 (18 AAC 75), as revised October 1 (SLR, 2018a).
C	Sample results were compared with ADEC 2018 cleanup levels (18 AAC 75), as amended through October 27, 2018.
D	Total values were the summation of detected compounds only. If compounds were ND, then the highest LOD was listed.
E	Duplicate of preceding sample.
ND [X.XX]	The maximum concentration of a detected analyte is shown. The highest LOD is shown in [brackets] for ND analytes.

Data Flags

J	Estimated value below the LOQ
ND	Nondetect; the limit of detection is presented in brackets to the right
Q	Estimated value due to one or more QC exceedances
UJ	Estimated LOD due to one or more QC exceedances

Abbreviations

--	not applicable or screening criteria does not exist for this compound	DL	detection limit	PVOC	petroleum volatile organic compound
AAC	Alaska Administrative Code	LOD	limit of detection	USEPA	U.S. Environmental Protection Agency
ADEC	Alaska Department of Environmental Conservation	LOQ	limit of quantitation	VOC	volatile organic compound
BTEX	benzene, toluene, ethylbenzene, and xylenes	mg/L	milligram per liter		

Table 4 - Surface Water Analytical Results
Pump Station 1 Former Gasoline Tank Area
(All results in mg/L)

Sample Location	Sample Identification	Date Sampled	BTEX - USEPA Method 8021B				Total Aromatic Hydrocarbons[A]	PAH SIM - USEPA Method 8270D[B]		Total Aqueous Hydrocarbons[C]
			Benzene	Toluene	Ethylbenzene	Total Xylenes		Naphthalene	Total Polynuclear Aromatic Hydrocarbons	
ADEC Surface Water Quality Criteria[D]			N/A	N/A	N/A	N/A	0.010	0.73	N/A	0.015
SW-1	FGTA SW-1	9/6/2003	ND [0.0005]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0059]	ND [0.0005]	ND [0.0041]	ND [0.00100]
	FGTA SW-1	8/26/2004	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.00062]	ND[0.004309]	ND [0.0097909]
	FGTA SW-DUP[E]	8/26/2004	ND [0.0005]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0059]	ND [0.00062]	ND[0.004309]	ND [0.010209]
	FGTA-SW-1	7/22/2005	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.001]	ND[0.0054]	ND[0.0108]
	FGTA-SW-1	9/6/2006	ND [0.0004]	0.00103	ND [0.001]	ND [0.003]	0.00543	ND [0.000109]	ND [0.0009235]	0.00654
	SW-1	9/8/2007	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.000104]	ND [0.0008855]	ND[0.006286]
	DUP-1[E]	9/8/2007	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.000105]	ND [0.0008871]	ND [0.006287]
	FGTA-SW-1	8/1/2008	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.000103]	ND [0.0008755]	ND [0.006276]
	FGTA SW-1	7/30/2009	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]	ND[0.0065]	ND [0.0001]	ND [0.00085]	ND[0.00735]
	FGTA SW-1	7/29/2010	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]	ND[0.0065]	ND [0.0001]	ND [0.00085]	ND[0.00735]
	FGTA SW-1	8/10/2011	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]	ND[0.0065]	ND [0.0001]	ND [0.0095]	ND [0.0075]
	FGTA SW-5[E]	8/10/2011	0.00028 J	ND [0.002]	ND [0.002]	ND [0.002]	0.00628 J	ND [0.0001]	ND [0.0095]	0.00728 J
	FGTA SS-1	8/5/2012	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]	ND [0.0034]	ND [0.000062]	ND [0.000512]	ND [0.003912]
	FGTA SS-3[E]	8/5/2012	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]	ND [0.0034]	0.0000744 J	0.0005244 J	0.00392 J
	SW-1	8/3/2013	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]	ND [0.0034]	ND [0.000067]	ND [0.000553]	ND [0.003953]
	SW-99[E]	8/3/2013	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]	ND [0.0034]	ND [0.000067]	ND [0.000553]	ND [0.003953]
	SW-1	8/22/2014	ND [0.00025]	0.00143 B	ND [0.0005]	ND [0.0015]	0.00368 B	ND [0.000052] J-	0.000444 J-	0.004124 B,J-
	SW-99[E]	8/22/2014	ND [0.00025]	0.00259 B	ND [0.0005]	ND [0.0015]	0.00484 B	ND [0.0000525] J-	0.000446 J-	0.005286 B,J-
	SW-1	8/25/2015	0.00036 J	0.00123 QN	ND [0.0005]	ND [0.0005]	0.00359 QN	ND [0.0000481]	0.0004081	0.003998 QN
	SW-99[E]	8/25/2015	0.0004 J	0.00243 QN	ND [0.0005]	ND [0.0005]	0.00483 QN	ND [0.0000505]	0.0004285	0.005259 QN
	SW-1	8/11/2016	ND [0.00025]	0.00259 B	ND [0.0005]	ND [0.0005]	0.00484	ND [0.0000471]	ND [0.0003493]	0.005189
	SW-1	8/16/2017	0.00231	ND [0.0005]	ND [0.0005]	ND [0.0015]	0.00481	0.0000321 J	0.0003762 J	0.005186 J
	SW-99[E]	8/16/2017	0.00224	ND [0.0005]	ND [0.0005]	ND [0.0015]	0.00474	0.0000467 J	0.0003779 J	0.005118 J
	SW-1	8/29/2018	0.00044 J	ND [0.0005]	ND [0.0005]	ND [0.0015]	0.00294 J	ND [0.000051]	ND [0.0004014]	0.003341 J
	SW-99[E]	8/29/2018	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.0015]	ND [0.00275]	ND [0.000051]	ND [0.0004014]	ND [0.003151]
	SW-1	8/16/2019	0.00301	ND [0.0005]	ND [0.0005]	0.000373 J	0.004383 J	ND [0.0000471]	ND [0.0003728]	0.005756
	SW-99[E]	8/16/2019	0.00307	ND [0.0005]	ND [0.0005]	0.000354 J	0.004424 J	ND [0.0000481]	ND [0.0003793]	0.005803
SW-2	FGTA SW-2	9/6/2003	ND [0.0005]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0059]	ND [0.0005]	ND [0.0041]	ND [0.00100]
	FGTA SW-2	8/26/2004	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.00062]	ND[0.004309]	ND [0.0097909]
	FGTA-SW-2	7/22/2005	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.001]	ND[0.0054]	ND[0.0108]
	FGTA-SW-DUP[E]	7/22/2005	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.001]	ND[0.0054]	ND[0.0108]
	FGTA-SW-2	9/6/2006	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.000104]	ND[0.0008855]	ND[0.006286]
	DUP-5[E]	9/6/2006	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.000109]	ND [0.0009235]	ND[0.006324]
	SW-2	9/8/2007	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.0001]	ND [0.00085]	ND[0.00625]
	FGTA-SW-2	8/1/2008	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.000104]	ND [0.0008855]	ND[0.006286]
	FGTA-SW-3[E]	8/1/2008	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]	ND [0.0054]	ND [0.000103]	ND [0.0008755]	ND [0.006276]
	FGTA-SW-2	7/30/2009	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]	ND[0.0065]	ND [0.0001]	ND [0.00085]	ND[0.00735]
	FGTA-SW-3[E]	7/30/2009	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]	ND[0.0065]	ND [0.0001]	ND [0.00085]	ND[0.00735]
	FGTA SW-2	7/29/2010	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]	ND[0.0065]	ND [0.0001]	ND [0.00085]	ND[0.00735]
	FGTA SW-5[E]	7/29/2010	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]	ND[0.0065]	ND [0.0001]	ND [0.00085]	ND[0.00735]
	FGTA SW-2	8/10/2011	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]	ND[0.0065]	ND [0.0001]	ND [0.0095]	ND [0.0075]
	FGTA SS-2	8/5/2012	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]	ND [0.0034]	ND [0.000062]	ND [0.000512]	ND [0.003912]
	SW-2	8/3/2013	ND [0.0003]	ND [0.00062]	ND [0.00062]	ND [0.00186]	ND [0.0034]	ND [0.000067]	ND [0.000553]	ND [0.003953]

Table 4 - Surface Water Analytical Results
Pump Station 1 Former Gasoline Tank Area
(All results in mg/L)

Sample Location	Sample Identification	Date Sampled	BTEX - USEPA Method 8021B				Total Aromatic Hydrocarbons[A]	PAH SIM - USEPA Method 8270D[B]		Total Aqueous Hydrocarbons[C]
			Benzene	Toluene	Ethylbenzene	Total Xylenes		Naphthalene	Total Polynuclear Aromatic Hydrocarbons	
ADEC Surface Water Quality Criteria[D]			**N/A**	**N/A**	**N/A**	**N/A**	**0.010**	**0.73**	**N/A**	**0.015**
SW-2 Continued	SW-2	8/22/2014	ND [0.00025]	0.00373 B	ND [0.0005]	ND [0.0015]	0.00598 B	ND [0.0000263] J-	0.000447 J-	0.006427 B,J-
	SW-2	8/25/2015	0.00035 J	0.00041 J	ND [0.0005]	0.00134	0.0026 J	ND [0.0000447]	0.0003792	0.0029792 J
	SW-2	8/11/2016	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.0015]	ND [0.00275]	ND [0.0000463]	ND [0.0003664]	ND [0.003116]
	SW-5[E]	8/11/2016	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.0015]	ND [0.00275]	ND [0.0000463]	ND [0.0003664]	ND [0.003116]
	SW-2	8/16/2017	0.00023 J	ND [0.0005]	ND [0.0005]	ND [0.0015]	0.00273 J	ND [0.000049]	0.000392 J	0.003122 J
	SW-2	8/29/2018	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.0015]	ND [0.00275]	ND [0.000051]	ND [0.0004014]	ND [0.003151]
	SW-2	8/16/2019	0.00177	ND [0.0005]	ND [0.0005]	ND [0.0015]	0.00427	ND [0.0000481]	ND [0.0003793]	0.004649
SW-3	SW-3	8/16/2017	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.0015]	ND [0.00275]	0.000211	0.0006542 J, B	0.003404 J, B
	SW-3	8/29/2018	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.0015]	ND [0.00275]	ND [0.00005]	ND [0.000395]	ND [0.003145]
	SW-3	8/16/2019	ND [0.00025]	ND [0.0005]	ND [0.0005]	ND [0.0015]	ND [0.00275]	ND [0.0000463]	ND [0.0003664]	ND [0.0031164]

Notes:

0.015 **BOLD** indicates exceedance of ADEC Surface Water Quality criteria.

A Total aromatic hydrocarbons is the sum of all BTEX compounds.

B PAHs not presented in this table were not detected in surface water samples. Historical methods used for analysis of PAHs include:
- 2003 to 2005: USEPA Method 610
- 2006 to 2007: USEPA Method 625M
- 2008 to 2019: USEPA Method 8270D SIM

C Total aqueous hydrocarbons is the sum of all BTEX and all PAH compounds.

D Surface water data compared to 2018 ADEC surface water criteria (18 AAC 70), amended as of April 6, 2018.

E Duplicate of preceding sample.

ND [x.xx] The number in brackets is the limit of quantitation or the practical quantitation limit for samples collected prior to 2012.

ND [x.xx] The limit of detection was used in place of ND values for TAH and TAqH calculations.

Abbreviations:

ADEC	Alaska Department of Environmental Conservation
BTEX	benzene, toluene, ethylbenzene, xylenes
mg/L	milligram per liter
N/A	Not applicable
PAH	polynuclear aromatic hydrocarbon
SIM	selective ion monitoring
USEPA	U.S. Environmental Protection Agency

Data Flags:

B	Estimated value with potential high bias
J	estimated value
J-	estimated value with potential low bias
ND [x.xx]	not detected [Limit of Detection]
QN	Estimated value with unknown bias

APPENDIX A

PHOTOGRAPH LOG

2019 Water Monitoring Report
Pump Station 1 Former Gasoline Tank Area

ALYESKA PIPELINE SERVICE COMPANY
PO Box 196660
3700 Centerpoint Drive
Anchorage, Alaska 99519-6660

December 2019

Photo 1: Monitoring well MW-22: The monument was raised to approximately ten inches below the ground surface (bgs). Bentonite was added in the area surrounding the monument. The bentonite was hydrated to prevent surface water from infiltrating the well monument.
(July 18, 2019).

Photo 2: Monitoring Well MW-16R: The two-inch monitoring well casing (covered with an orange expandable cap) was cut down prior to sampling. Slits in the four inch well casing are visible above the gravel in the monument.
(August 16, 2019).

Photo 3: Monitoring Well MW-12: A sharpie mark from the 2018 sampling event indicates approximately 0.15 feet of frost-jacking of the outer four-inch PVC stickup. The date of the upper sharpie mark is unknown.

SLR	Pump Station 1 Former Gasoline Tank Area 2019 Water Monitoring and Remediation Report Deadhorse, Alaska
SITE PHOTOGRAPHS August 16, 2019	Job No: 105.01288.19008

Photo 4: Monitoring Well MW-4R: The frost-jacked two-inch PVC well casing was cut down following sample collection.

Photo 5: Monitoring Well MW-17R: Water parameter collection prior to sampling, photograph facing east.

Photo 6: Monitoring Well MW-7R: A trench was created to direct ponded surface water away from the monitoring well during sampling, photograph facing north.

Photo 7: Monitoring Well MW-18: Well exposed in gravel pad, photograph facing south.

Photo 8: Surface water sample location SW-3 sample collection.

SLR	Pump Station 1 Former Gasoline Tank Area 2019 Water Monitoring and Remediation Report Deadhorse, Alaska
SITE PHOTOGRAPHS August 16, 2019	Job No: 105.01288.19008

APPENDIX B

FIELD NOTEBOOK

2019 Water Monitoring Report
Pump Station 1 Former Gasoline Tank Area

ALYESKA PIPELINE SERVICE COMPANY
PO Box 196660
3700 Centerpoint Drive
Anchorage, Alaska 99519-6660

December 2019

C.VENOT

FGTA Well Repair/Survey 7/18/19

Continued from Equipment Shop project/ Westpad.

1352 - Cut down MW-4R 2" PVC casing ~0.15Ft

1430 - Raise MW-22 Monument to ~10" bgs and add bentonite for surface seal.

1450 - Raise MW-23 Monument to ~2" bgs and add bentonite for surface seal.

1515 - Raise MW-17R Monument to 0" bgs (flush) and add bentonite for surface seal

1520 - Cut down MW-16R 2" PVC by ~0.12Ft.

1540 - All wells exposed. No repairs to wells not listed above.

Move to Eq. Shop project

END

C.VENOT

7/18/19

C.VENOT, E.TYLER, R.CORSEY-WILLIAMS ~45°F, Sunny

FGTA Well Sampling 105-01288.M00 8/16/19

0715 - Calibrate YSI

0800 - Obtain work permit

0900 - Enter tank farm, Setup on wells.

0957 - Sample MW-22

0956 - Sample MW-18 w/ DUP MW-98 @ "/700"

1044 - Sample MW-23

1049 - Sample MW-19

1125 - Sample MW-17R

1126 - Sample MW-15

1209 Sample MW-14R

1212 - Sample MW-16R

~~1318 Sample~~

1246 - Sample MW-13

1301 - Sample MW-12

1312 - Sample SW-3

1329 - Sample SW-1 w/DUP SW-99 @ "1330"

1337 - Sample SW-2

1401 - Sample MW-9 w/ DUP MW-99 @ 1730"

~~1450~~ 1502 - CV Sample MW-8

1456 - Sample MW-4R, cut 2" PVC down by 0.1 Ft

1545 - Sample MW-7

1555 - Sample MW-20

1630 Sample MW-3

1646 - Sample MW-7R

CUEANT, E. TYLER, R.C.W. 105-01288.1900E

FGTA Water Sampling 8/16/19

1700 - Cleanup FGTA Site

1714 - closeout Permits, return radio

1720 - 1750 - dump purge water in drum in haz waste connex, record drum ID S
pH-190813-02, pH-190814-01, pH-190816-01

1750 - 1820 - Cleanup equipment, pack for shipping

1820 - - Check samples, complete COC, ice samples.

1915 - Depart for hotel.

END OF DAY

C. VENOT
8/16/19

APPENDIX C

FIELD FORMS

2019 Water Monitoring Report
Pump Station 1 Former Gasoline Tank Area

ALYESKA PIPELINE SERVICE COMPANY
PO Box 196660
3700 Centerpoint Drive
Anchorage, Alaska 99519-6660

December 2019

Water Parameter Meter Calibration Log

SLR

Date: 8/16/19 Time: 0705 Calibration By: Evan Tyler

Meter Manufacturer and Identification #: 05B2460 AE

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
pH	7.00	7.01	CC61059	8/13/19	3/19/21	7.00	7.01	± 0.10
	4.00	4.00	CC565653	8/13/19	6/18/20	3.94	4.00	± 0.10
	10.00	10.06	WY2	7/30/18	2/2020	10.03	10.06	± 0.10
Sp Cond (mS/cm)	1.413	1.413	CC17956	8/13/19	12/15/19	1383	1413	± 10%
ORP (mV)	240	240	1600	9/12/17	5/2022	237.6	239.9	----------
DO*						95.3 100.8	101.3 101.3	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date: 8/16/19 Time: 0708 Calibration By: Evan Tyler

Meter Manufacturer and Identification #: 07L005513

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
pH	7.00	7.01	CC61059	8/13/19	3/19/21	7.05	7.01	± 0.10
	4.00	4.00	CC565653	8/13/19	6/18/20	3.99	4.00	± 0.10
	10.00	10.06	WY2	7/30/18	2/2020	10.14	10.07	± 0.10
Sp Cond (mS/cm)	1.413	1.413	CC17956	8/13/19	12/15/19	1398	1413	± 10%
ORP (mV)	240	240	1600	9/12/17	5/2022	236.1	240.0	----------
DO*						110.5 100.8	101.2 101.3	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date: _____ Time: _____ Calibration By: _____

Meter Manufacturer and Identification #: _____

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
pH	7.00							± 0.10
	4.00							± 0.10
	10.00							± 0.10
Sp Cond (mS/cm)	1.413							± 10%
ORP (mV)	240							----------
DO*								± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 4R
Project # : 105.01288.19008	Sample ID: MW-4R
Sampled By: RYAN WOMBLE-WILLIS	Sample Time: 1456 Sample Date: 8/16/2019
Weather Conditions: CLOUDY, BREEZY ~40°F	Duplicate ID: NONE
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter ___2___ in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 0.95'	Tubing/Pump Depth (ft. BTOC): ~2.5'
Total Depth (ft BTOC): 4.1 − 0.11 = 3.99'	Purge Start Time (24-hr) 1428
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1453
Product Thickness (ft) ---------	Total Purge Time (min) 25

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
1429	300	.3	4.65	140	10.14	30.8	8.18	H	1.05	0.10
1432	300	1.20	4.71	139	10.05	34.1	8.22	H	1.05	0.10
1435	300	2.10	4.79	143	9.91	39.9	8.29	H	1.06	0.11
1438	300	3.0	4.72	153	9.64	43.9	8.39	H	1.05	0.10
1441	300	3.9	4.68	158	9.47	45.6	8.46	H	1.05	0.10
1444	300	4.8	4.64	165	9.64	46.7	8.50	H	1.07	0.12
1447	300	5.7	4.66	167	9.34	48.6	8.53	H	1.15	0.2
1450	300	6.9	4.64	169	9.22	50.3	8.55	H	1.15	0.20
1453	400	8.1	4.62	170	9.17	51.8	8.58	H	1.15	0.20
Parameter Stable (Check applicable)			✓	✓	✓	✓	✓			

Sample Color: BROWN	**Sample Odor:** NONE	**Sheen:** NONE

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	Ferrous iron (Fe2+) =
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

CUT DOWN 0.11 FT AFTER SAMPLING.

Equipment: Pump Type____GeoTech Peristaltic_____ Tubing (Type/Length) _____1/4" OD PFTE-LINED HDPE_____

Water Level Meter Slope Indicator 20953 Multi-Parameter Meter (Make/SN#)__YSI 556 07L100513

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?) APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 2
Project # : 105.01288.19008	Sample ID: MW-2
Sampled By: Ryan Coursey-Willis	Sample Time: 1545 Sample Date: 8/16/2019
Weather Conditions: Cloudy ~40F Breezy	Duplicate ID: None
Sampling Method: ☐ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☒ Yes ☐ No; If yes, 1.85 ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 5.05	Tubing/Pump Depth (ft. BTOC): 7.8
Total Depth (ft BTOC): 9.78	Purge Start Time (24-hr) 1516
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1535
Product Thickness (ft) ---------	Total Purge Time (min) 19

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (m/L minute)	Purge Volume (gal) L	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
1517	350	0.35	4.05	328	12.58	87.5	8.00	L	5.19	0.14
1520	350	1.4	3.69	343	12.20	81.3	7.55	L	5.20	0.15
1523	350	2.45	3.48	356	11.91	85.9	7.71	L	5.21	0.16
1526	350	3.5	3.31	365	11.73	87.3	7.66	L	5.22	0.17
1529	350	4.55	3.22	372	11.52	87.2	7.62	L	5.22	0.17
1532	350	5.6	3.23	376	11.39	88.0	7.60	L	5.22	0.17
1535	350	6.65	3.16	380	11.43	88.6	7.58	L	5.22	0.17
Parameter Stable (Check applicable)			✓	✓	✓	✓	✓			

Sample Color: Clear	**Sample Odor:** None	**Sheen:** None

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	Ferrous iron (Fe2+) =
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Equipment: Pump Type____GeoTech Peristaltic_____ Tubing (Type/Length) ____1/4" OD PFTE-LINED HDPE_____

Water Level Meter Slope Indicator #120953 Multi-Parameter Meter (Make/SN#)__YSI 556 ~~07H0ET~~ 07L100513

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?) APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

SLR

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 3
Project # : 105.01288.19008	Sample ID: MW-3
Sampled By: [illegible] - WILLIS	Sample Time: ~~1640~~ 1630 Sample Date: 8 /16 /2019
Weather Conditions: CLOUDY WIND ~40F	Duplicate ID: NONE
Sampling Method: ☒ Low Flow ☐ Other	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary Well Diameter 2 in.	Screen Interval: ____ ft BGS to ____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)	Stickup ☒ Yes ☐ No; If yes, 2.25 ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 4.13	Tubing/Pump Depth (ft. BTOC): ~5.75
Total Depth (ft BTOC): 6.8	Purge Start Time (24-hr) 1609
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1622
Product Thickness (ft) ---------	Total Purge Time (min) 13

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)____ X 0.25 = ____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.

Min. purge volume if required: purge volume (gal) = volume of water/ft____(gal/ft) X Water column thickness____(ft) X # of casing volumes____ = ____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (m/L minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm^c) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
1610	400	0.4	3.77	612	3.84	93.9	7.18	M/L	4.26	0.13
1613	400	1.6	4.11	597	5.95	92.4	7.36	L	4.28	0.15
1616	400	2.8	4.45	536	7.77	90.7	7.41	L	4.28	0.15
1619	400	3.0	4.45	534	7.68	88.9	7.43	L	4.28	0.15
1622	400	4.0	4.45	533	7.82	89.0	7.43	L	4.28	0.15
Parameter Stable (Check applicable)			✓	✓	✓	✓	✓			

Sample Color: SLIGHT TAN/CLEAR	**Sample Odor:** NONE	**Sheen:** NONE

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+) =~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Stickup 2.35 -0.10

Equipment: Pump Type GeoTech Peristaltic Tubing (Type/Length) 1/4" OD PFTE-LINED HDPE

Water Level Meter Slope Indicator # 20953 Multi-Parameter Meter (Make/SN#) YSI 556 07L100513

Turbidity Meter (Make/SN#) N/A Filter Lot # N/A

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?) APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 15
Project # : 105.01288.19008	Sample ID: MW-15
Sampled By: Ryan Curtis, Watts	Sample Time: 1126 Sample Date: 8/16/2019
Weather Conditions: partly cloudy, breezy ~40 F	Duplicate ID: No
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☒ Yes ☐ No; If yes, 1.36 ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 2.61 ft	Tubing/Pump Depth (ft. BTOC): 4.91
Total Depth (ft BTOC): 6.81 ft	Purge Start Time (24-hr) 1109
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1123
Product Thickness (ft) ---------	Total Purge Time (min) 14

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4" – 0.653 gal/ft	6" – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm²) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
1111	100	0.2	7.16	588	2.17	34.5	7.29	L	2.13	0.12
1114	100	0.5	6.78	535	2.13	34.6	7.29	L	2.16	0.15
1117	100	0.8	6.50	509	2.009	38.1	7.25	L	2.17	0.16
1120	100	1.1	6.49	498	1.99	37.4	7.22	L	2.18	0.17
1123	100	1.4	6.35	497	1.93	33.3	7.22	L	2.18	0.17
Parameter Stable (Check applicable)			✓	✓	✓	✓				

Sample Color: CLEAR	**Sample Odor:** NONE	**Sheen:** NONE

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	Ferrous iron (Fe2+) = —
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Stickup 0.24 + 1.80 = 2.04 − 0.68 = 1.36

Equipment: Pump Type____GeoTech Peristaltic_____ Tubing (Type/Length) _____1/4" OD PFTE-LINED HDPE_____

Water Level Meter SLR PLP WL #2 Multi-Parameter Meter (Make/SN#)_YSI 556 05B2462 AE

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-14R**
Project # : 105.01288.19008	Sample ID: MW-14R
Sampled By: Client	Sample Time: 1209 Sample Date: 8 / 16/2019
Weather Conditions: 45°F, Cloudy	Duplicate ID:
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 0.00	Tubing/Pump Depth (ft. BTOC): ~4.0'
Total Depth (ft BTOC): 5.37	Purge Start Time (24-hr) 1145
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1209
Product Thickness (ft) ---------	Total Purge Time (min) 24

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
1145	600	0	6.43	471	9.08	22.9	7.23	L	0.10	0.10
1151	600	3.6	5.44	287	8.94	67.9	7.84	L	0.20	0.20
1154	600	5.4	5.62	283	8.71	73.6	7.84	L	0.23	0.23
1157	500	~~7.6~~ 7.9	5.81	280	8.30	78.4	7.82	L	0.26	0.26
1200	500	8.4	5.70	278	8.40	~~82.1~~ 82.1	7.78	L	0.26	0.26
1203	500	9.9	5.66	276	8.44	82.9	7.77	L	0.26	0.26
1206	500	11.4	~~6.64~~ 6.64	276	8.46	83.9	7.74	L	0.28	0.28
Parameter Stable (Check applicable)			✓	✓		✓	✓			

Sample Color: clear	**Sample Odor:**	**Sheen:** None

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	Ferrous iron (Fe2+) = ____
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

high flow rate to keep water from overflowing inner 2" PVC casing.

Equipment: Pump Type___GeoTech Peristaltic_____ Tubing (Type/Length) _____1/4" OD PFTE-LINED HDPE_____

Water Level Meter SLR PLP #2 Multi-Parameter Meter (Make/SN#)__YSI 556 05B2462 AE

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 17R
Project # : 105.01288.19008	Sample ID: MW-17R
Sampled By: Evan Tyler	Sample Time: 1125 Sample Date: 8/16/2019
Weather Conditions: ~ 90°F, Sunny	Duplicate ID: ———
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: **X** Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 1.34	Tubing/Pump Depth (ft. BTOC): 2.64
Total Depth (ft BTOC): 4.19	Purge Start Time (24-hr) 1054
Depth to Product (ft. BTOC) --------	Purge End Time (24-hr) 1124
Product Thickness (ft) --------	Total Purge Time (min) 30

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ = _____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (ml/minute)	Purge Volume (gal) L	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
1059	320	1.7L	6.15	435	2.00	37.9	7.00	L	1.41	0.07 ET
1102	320	2.7L	6.15	450	0.50	17.7	6.84	L	ET ~~1.49~~ 1.41	~~0.10~~ 0.07
1105	320	3.7L	6.15	459	0.41	12.1	6.82	L	1.41	0.07
1108	320	4.7L	6.20	461	0.34	5.4	6.84	L	1.41	0.07
1111	320	5.7L	6.27	466	0.28	-1.3	6.85	L	1.43	0.09
1114	320	6.7L	6.29	469	0.20	-10.8	6.90	ET L	1.43	0.09
1118	320	8.1L	6.34	469	0.16	-13.3	6.92	L	1.43	0.09
1121	320	9.1L	6.25	470	0.17	-16.7	6.93	L	1.44	0.10
1124	320	10.1L	6.30	468	0.14	-20.1	6.95	L	1.43	0.09
Parameter Stable (Check applicable)			✓	✓		✓	✓			

Sample Color: clear	**Sample Odor:** Strong Diesel	**Sheen:** None

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+) =~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Equipment: Pump Type___GeoTech Peristaltic_____ Tubing (Type/Length) _____1/4" OD PFTE-LINED HDPE_____

Water Level Meter Slope Indicator 20953 Multi-Parameter Meter (Make/SN#)_YSI 556 07L100513

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 16R
Project # : 105.01288.19008	Sample ID: MW-16R
Sampled By: Evan Tyler	Sample Time: 1212 Sample Date: 8/16/2019
Weather Conditions: 50°F Partly cloudy	Duplicate ID: —
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: **X** Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 0.56	Tubing/Pump Depth (ft. BTOC): ~~0.12 ET~~ 1.2
Total Depth (ft BTOC): 4.18	Purge Start Time (24-hr) 1144
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1210
Product Thickness (ft) ---------	Total Purge Time (min) 26

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (~~gal~~) L	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
1146	160	0.3L	4.02	1046	1.80	65.0	6.83	L	0.70	0.14
1149	160	0.8L	4.27	1039	0.85	59.5	6.82	L	0.75	0.19
1152	150	~~ET~~ 1.3L	4.41	1028	0.50	49.0	6.83	L	0.76	0.20
1155	150	1.7L	4.51	1018	0.44	42.1	6.85	L	0.76	0.20
1158	150	2.2L	4.60	1006	0.36	36.1	6.87	L	0.76	0.20
1201	150	2.6L	4.64	991	0.31	32.4	6.88	L	0.74	0.18
1205	150	3.2L	4.68	974	0.29	27.2	6.88	L	0.77	0.21
1210	150	4.0L	4.69	986	0.24	23.5	6.91	L	0.79	0.23
Parameter Stable (Check applicable)			✓	✓		✓	✓			

Sample Color: slight yellow **Sample Odor:** None **Sheen:** None

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+)~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Equipment: Pump Type____GeoTech Peristaltic_____ Tubing (Type/Length) _____1/4" OD PFTE-LINED HDPE_____

Water Level Meter Slope Indicator 20953 Multi-Parameter Meter (Make/SN#)__YSI 556 07L100513

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-18**
Project # : 105.01288.19008	Sample ID: MW-18
Sampled By: RYAN CARTER-WILLIS	Sample Time: 0956 Sample Date: 8 / 16 /2019
Weather Conditions: SUNNY, BREEZY ~40's	Duplicate ID: MW-99 @ 1700
Sampling Method: ☒ ~~Low Flow~~ ☒ Other 3 VOLUMES	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 0.83 ft	Tubing/Pump Depth (ft. BTOC): ~3.00
Total Depth (ft. BTOC): 4.38 ft	Purge Start Time (24-hr) 0927
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 0954
Product Thickness (ft) ---------	Total Purge Time (min) ~~35~~ 23

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (m/L minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
0931	200	.8	7.01	281	11.44	188.8	7.80	M	1.11	0.27
0934	150	1.25	6.57	272	10.97	193.3	7.80	M	1.24	0.41
0938	175	1.95	6.43	281	10.14	197.7	7.74	M	1.27	0.44
0942	300	3.85	6.45	288	9.51	198.6	7.70	M	1.10	0.26
0945	350	4.9	6.39	330	8.48	203.4	7.59	M	1.13	0.3
0948	350	5.95	6.34	340	8.18	203.6	7.56	M/L	1.15	0.32
0951	350	7.00	6.35	361	7.31	207.3	7.50	M/L	1.17	0.34
0954	350	8.1	6.32	368	7.13	208.0	7.49	M/L	1.17	0.34
Parameter Stable (Check applicable)			✓			✓	✓			

Sample Color: LT BROWN	**Sample Odor:** NONE	**Sheen:** NONE

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+)~~ =
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well * SAMPLED AFTER 3 VOLS PURGED

3 vols = 0.1L

1 volume = 0.714gal

= 2.7L

Equipment: Pump Type____GeoTech Peristaltic_____ Tubing (Type/Length) _____1/4" OD PFTE-LINED HDPE_____

Water Level Meter Solinst Slope Indicator 2093 Multi-Parameter Meter (Make/SN#) YSI 556 05B2462AB

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

SLR

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	Well ID: MW- 19
Project # : 105.01288.19008	Sample ID: MW-19
Sampled By: Ryan Cousins, [illegible]	Sample Time: 1049 Sample Date: 8 / 16 /2019
Weather Conditions: SUNNY BREEZE ~40°F	Duplicate ID: ——
Sampling Method: ☒ Low Flow ☒ Other 3 VOLUMES	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary | Well Diameter 2 in. | Screen Interval: ____ ft BGS to ____ ft BGS

Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes) | Stickup ☐ Yes ☒ No; If yes, —— ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 0.52	Tubing/Pump Depth (ft. BTOC): 1.25
Total Depth (ft BTOC): 2.92	Purge Start Time (24-hr) 1026
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1049
Product Thickness (ft) ---------	Total Purge Time (min) 23

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth) ____ X 0.25 = ____ (ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft 0.163 (gal/ft) X Water column thickness 2.4 (ft) X # of casing volumes 3 = 1.17 gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (m/L minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (μS/cm^c) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max ___ ft)
1028	200	0.4	7.55	451	5.80	221.2	7.36	L	0.76	.14
1031	225	1.05	7.12	547	2.97	219.9	7.07	L	0.85	.33
1034	200	1.65	6.98	639	1.99	215.7	7.04	L	0.89	.37
1038	250	2.65	6.85	653	1.67	123.0	6.94	L	0.93	.41
~~1040~~ 1041	250	3.4	6.76	658	1.69	103.4	6.95	L	0.94	.42
1044	250	4.15	6.76	675	1.48	71.3	6.96	L	0.97	.45
1047	250	4.96	6.80	685	1.42	54.6	6.97	L	0.99	0.48
Parameter Stable (Check applicable)										

Sample Color: CLEAR | Sample Odor: NONE | Sheen: NONE

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+) =~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

3 volume = 3 × 1.17 gal = 4.93 L

Equipment: Pump Type ___GeoTech Peristaltic___ Tubing (Type/Length) ___1/4" OD PFTE-LINED HDPE___

Water Level Meter SLRAP [illegible] Multi-Parameter Meter (Make/SN#) YSI 556 05B2462 AE

Turbidity Meter (Make/SN#) N/A Filter Lot # N/A

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?) APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 20
Project # : 105.01288.19008	Sample ID: MW-20
Sampled By: Evan Tyler	Sample Time: 1555 Sample Date: 8 / 16/2019
Weather Conditions: 45°F, Cloudy	Duplicate ID: —
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 0.78	Tubing/Pump Depth (ft. BTOC): 1.4'
Total Depth (ft BTOC): 3.05	Purge Start Time (24-hr) 1524
Depth to Product (ft. BTOC) --------	Purge End Time (24-hr) 1552
Product Thickness (ft) ---------	Total Purge Time (min) 28

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (gal) L	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
1530	125	0.8L	6.48	869	8.70	116.5	7.29	L	0.81	0.03
1535	125	1.4L	6.43	904	5.58	118.1	7.29	L	0.79	0.01
1538	125	1.8L	6.31	937	2.58	121.0	7.25	L	0.79	0.01
1542	175	2.5L	6.35	937	2.05	121.8	7.24	L	0.80	0.02
1546	175	3.2L	6.18	942	1.61	123.0	7.24	L	0.82	0.04
1549	175	3.7L	6.08	945	1.60	124.1	7.23	L	0.82	0.04
1552	175	4.3L	6.11	945	1.59	124.7	7.23	L	0.83	0.05
Parameter Stable (Check applicable)			✓	✓		✓	✓			

Sample Color: Clear **Sample Odor:** None **Sheen:** NONE

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous Iron (Fe2+)~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Equipment: Pump Type___GeoTech Peristaltic_____ Tubing (Type/Length) ____1/4" OD PFTE-LINED HDPE_____

Water Level Meter SLR PLP WL 2 Multi-Parameter Meter (Make/SN#) YSI 556 05B2462AE

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 7R
Project # : 105.01288.19008	Sample ID: MW-7R
Sampled By: Evan Tyler/Ryan Wickstrom	Sample Time: 1646 Sample Date: 8 / 16/2019
Weather Conditions: 44°F, Cloudy	Duplicate ID: —
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☐ Good ☒ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 0.19	Tubing/Pump Depth (ft. BTOC):
Total Depth (ft BTOC): 11.85	Purge Start Time (24-hr) 1619
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1645
Product Thickness (ft) ---------	Total Purge Time (min)

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (gal) L	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
1623	200	0.8L	6.13	209	11.84	108.1	8.44	H	0.21	0.02
1626	200	1.4L	6.17	212	9.27	110.5	8.36	H	0.21	0.02
1630	200	2.2L	6.19	219	6.88	112.1	8.31	H	0.20	0.02
1635	260	3.5L	6.16	238	5.67	113.7	8.28	H	0.25	0.06
1638	260	4.2L	6.17	~~240~~ <250	5.30	115.0	8.25	H	0.30	0.11
1642	260	5.3L	6.14	255	5.17	115.5	8.20	H	0.30	0.11
1645	260	6.0L	6.10	256	5.03	115.8	8.18	H	0.30	0.11
Parameter Stable (Check applicable)			✓		✓	✓	✓			

Sample Color: Brown **Sample Odor:** None **Sheen:** None

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+) =~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Equipment: Pump Type GeoTech Peristaltic Tubing (Type/Length) 1/4" OD PFTE-LINED HDPE

Water Level Meter SLR PLP WL #2 Multi-Parameter Meter (Make/SN#) YSI 556 05B2462 AE

Turbidity Meter (Make/SN#) N/A Filter Lot # N/A

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?) APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-22**
Project # : 105.01288.19008	Sample ID: MW-22
Sampled By: Evan Tyler	Sample Time: 0957 Sample Date: 8/16/2019
Weather Conditions: 42°F, Sunny	Duplicate ID:
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 2.61	Tubing/Pump Depth (ft. BTOC): ~3'
Total Depth (ft BTOC): 5.56	Purge Start Time (24-hr) 0926
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 0954
Product Thickness (ft) ---------	Total Purge Time (min) 28

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.,

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (gal) L	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (+ 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
0933	175	1.2L	4.09	786	3.57	107.7	6.91	L	2.61	0.0
0936	175	1.7L	4.03	790	3.25	102.1	6.91	L	2.62	0.01
0939	175	2.2L	3.85	796	2.89	83.3	6.91	L	2.64	0.03
0942	175	2.6L	3.83	798	2.51	74.9	6.91	L	2.65	0.04
0945	175	3.1L	3.84	797	2.06	70.0	6.91	L	2.65	0.04
0948	175	3.6L	3.91	797	1.92	63.7	6.91	L	2.66	0.05
0951	175	4.0L	3.94	797	1.96	62.7	6.91	L	2.67	0.06
0954	175	4.5L	3.98	796	1.62	62.0	6.92	L	2.69	0.08
Parameter Stable (Check applicable)			✓	✓		✓	✓			

Sample Color: Clear	**Sample Odor:** NONE	**Sheen:** None

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+) =~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Equipment: Pump Type____GeoTech Peristaltic_____ Tubing (Type/Length) _____1/4" OD PFTE-LINED HDPE_____

Water Level Meter Slope Indicator 20953 Multi-Parameter Meter (Make/SN#)_YSI 556 97L100513

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?) APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-23**
Project # : 105.01288.19008	Sample ID: MW-23
Sampled By: Evan Tyler	Sample Time: 1044 Sample Date: 8/16/2019
Weather Conditions: 44°F, Sunny	Duplicate ID: ———
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 2.54	Tubing/Pump Depth (ft. BTOC): ~4.5'
Total Depth (ft BTOC): 5.24	Purge Start Time (24-hr) 1017
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1041
Product Thickness (ft) ---------	Total Purge Time (min) 24

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
1020	225	0.7L	3.68	~~1062~~ 1062	3.60	54.2	6.75	L	2.59	0.05
1023	150	1.2L	4.18	937	1.11	42.8	6.77	L	2.60	0.06
1026	150	1.6L	4.36	901	0.76	37.1	6.82	L	2.61	0.07
1029	150	2.0L	4.53	875	0.69	35.0	6.85	L	2.61	0.07
1032	150	2.5L	4.69	857	0.66	34.7	6.86	L	2.62	0.08
1035	150	2.9L	4.68	837	0.67	34.7	6.87	L	2.62	0.08
1038	150	3.4L	4.73	822	0.68	34.9	6.88	L	2.64	0.10
1041	150	3.8L	4.71	808	0.70	35.9	6.89	L	2.65	0.11
Parameter Stable (Check applicable)										

Sample Color: Clear	**Sample Odor:** None	**Sheen:** None

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+) =~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Equipment: Pump Type___GeoTech Peristaltic_____ Tubing (Type/Length) _____1/4" OD PFTE-LINED HDPE_____

Water Level Meter SLR PLP WL #2 Multi-Parameter Meter (Make/SN#)__YSI 556 07L005/3

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-13**
roject # : 105.01288.19008	Sample ID: MW-13
Sampled By: Ryan Causey-Wittke	Sample Time: 1246 Sample Date: 8 / 16 /2019
Weather Conditions: PARTLY SUNNY, BREEZY, WARM	Duplicate ID: —
Sampling Method: ~~☒ Low Flow~~ ☒ Other 3 Vols	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: **X** Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☒ Yes ☐ No; If yes, 1.0 ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 4.76	Tubing/Pump Depth (ft. BTOC): 4.5
Total Depth (ft BTOC): 6.8	Purge Start Time (24-hr) 1222
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1246
Product Thickness (ft) ---------	Total Purge Time (min) 24

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.

Min. purge volume if required: purge volume (gal) = volume of water/ft .163 (gal/ft) X Water column thickness 2.04 (ft) X # of casing volumes 3 = 1 gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (m/L minute)	Purge Volume ~~(gal)~~ L	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max ___ ft)
1224	400	0.0	6.03	352	9.02	99.1	7.73	M	5.34	0.58
1226	400	1.6	5.66	390	7.72	98.5	7.70	M	5.33	0.57
1229	300	2.5	5.70	405	6.89	98.7	7.69	M	5.31	0.55
1232	150	2.8	5.53	412	6.38	100.3	7.67	M	5.14	0.38
1235	100	3.1	5.56	416	6.14	102.0	7.64	M	5.03	0.27
1241	200	4.3	5.45	423	5.92	101.6	7.61	M	~~X~~ NM	NM
1246										
Parameter Stable (Check applicable)										

Sample Color: SLIGHT - LIGHT BRN. /TAN **Sample Odor:** NONE **Sheen:** NONE

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+) =~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

3 vols = 3.9L

quipment: Pump Type___GeoTech Peristaltic_____ Tubing (Type/Length) ____1/4" OD PFTE-LINED HDPE_____

Water Level Meter SLR PLP #1,#2 Multi-Parameter Meter (Make/SN#) YSI 556 MPS 05B2462 AE

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?) APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-8**
Project # : 105.01288.19008	Sample ID: MW-8
Sampled By: C COURTE WILLIS	Sample Time: 1502 Sample Date: 8/16/2019
Weather Conditions: CLEAR, BREEZY, WARM	Duplicate ID: ———
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☐ Good ☒ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 0.14' (Geotech) 0.16' (Alexus)	Tubing/Pump Depth (ft. BTOC): ~1.1'
Total Depth (ft BTOC): 1.97	Purge Start Time (24-hr) 1421
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1501
Product Thickness (ft) ---------	Total Purge Time (min) 40

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/minute)	Purge Volume ~~(gal)~~	Temp (°C) (± 3 %)	Specific Conductance (µS/cm^c) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
1424	275	0.8L	6.92	728	8.10	130.7	7.50	L	0.24	0.10
1427	275	1.6L	6.70	800	6.62	130.1	7.47	L	0.24	0.10
1432	275	2.9L	6.59	877	3.70	128.6	7.42	L	0.20	0.06
1435	276	3.6L	6.46	914	2.89	126.3	7.42	L	0.19	0.05
1438	275	4.3L	6.25	932	2.11	122.4	7.43	L	0.16	0.02
1440	switched to alexus pump								0.16	0
1447	300	5.3L	6.18	939	1.92	107.1	7.41	L	0.20	0.04
1450	300	6.2L	6.18	938	1.60	104.7	7.42	L	0.22	0.06
1453	300	7.1L	6.15	934	1.36	99.6	7.43	L	0.22	0.06
1458	300	8.6L	6.15	928	0.95	91.8	7.44	L	0.23	0.07
1501	300	9.5L	6.17	923	0.71	89.9	7.45	L	0.23	0.07
Parameter Stable (Check applicable)			✓	✓		✓	✓			

Sample Color: Clear	**Sample Odor:** None	**Sheen:** None

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	~~Ferrous iron (Fe2+) =~~
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Well overflowed because geotech pump couldn't purge fast enough due to bad battery. Switched to alexus pump and started repurging at 1440

Equipment: Pump Type GeoTech Peristaltic Tubing (Type/Length) 1/4" OD PFTE-LINED HDPE

Water Level Meter SLR PLP WL #2 Multi-Parameter Meter (Make/SN#) YSI 556 05B2462 AE

Turbidity Meter (Make/SN#) N/A Filter Lot # N/A

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 9
Project # : 105.01288.19008	Sample ID: MW-9
Sampled By: C. VENOT	Sample Time: 1400 Sample Date: 8 / 16 /2019
Weather Conditions: 40°F, windy	Duplicate ID: MW-99 @ 1730
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 0.30	Tubing/Pump Depth (ft. BTOC): 25
Total Depth (ft BTOC): 3.80	Purge Start Time (24-hr) 1331
Depth to Product (ft. BTOC) --------	Purge End Time (24-hr) 1400
Product Thickness (ft) ---------	Total Purge Time (min) ~~1400~~ 29

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ = _____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (m/L minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
1333	350	0	6.17	1271	11.00	96.4	7.36	L	0.45	0.15
1339	300		5.83	1,247	1.26	66.0	6.92	L	0.48	0.18
1342	↓		5.65	1,226	0.54	54.5	6.91	L	0.48	0.18
1344	↓		5.89	1,190	0.46	44.0	6.91	L	0.48	0.18
1350	↓		5.75	1,141	0.37	33.1	6.91	L	0.48	0.18
1354	↓		5.78	1,134	0.34	27.8	6.92	L	0.48	0.18
1357	↓		5.73	1,130	0.35	25.0	6.93	L	0.48	0.18
1400	↓		5.69	1,125	0.35	23.6	6.93	L	0.48	0.18
Parameter Stable (Check applicable)			✓	✓	✓	✓	✓		✓	✓

Sample Color: light yellow	**Sample Odor:**	**Sheen:** none

Analytical Sampling

Analyses	Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	Ferrous iron (Fe2+) = —
DRO - 2x HCL Amber Glass 250 mL bottle	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	

Notes: 8 bottles total each well

Equipment: Pump Type GeoTech Peristaltic Tubing (Type/Length) 1/4" OD PFTE-LINED HDPE

Water Level Meter Slope Indicator 20953 Multi-Parameter Meter (Make/SN#) YSI 556 07L100513

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: APSC PS01 Former Gasoline Tank Area (FGTA)	**Well ID: MW-** 12
Project # : 105.01288.19008	Sample ID: MW-12
Sampled By: Evan Tyler	Sample Time: 1301 Sample Date: 3 / 16 /2019
Weather Conditions: 50°F, Cloudy	Duplicate ID: —
Sampling Method: ☒ Low Flow ☐ Other	MS/MSD ☐ Yes ☒ No Trip Blank Required: x Yes ☐ No

Well Information

Well Type: X Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☒ Yes ☐ No; If yes, 3.26 ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 3.34	Tubing/Pump Depth (ft. BTOC): 4.6
Total Depth (ft BTOC): ~~3.34~~ ET 7.28	Purge Start Time (24-hr) 1237
Depth to Product (ft. BTOC) ---------	Purge End Time (24-hr) 1258
Product Thickness (ft) ---------	Total Purge Time (min) 21

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft 0.163 (gal/ft) X Water column thickness ~4 (ft) X # of casing volumes 3 = 1.9 gal ~8L

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4' – 0.653 gal/ft	6' – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (m/L minute)	Purge Volume (gal) L	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	ORP (mV) (± 10mV)	pH (± 0.1)	Turbidity (qualitative) (L/M/H)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
1239	150	0.3L	6.06	466	1.24	49.3	7.34	M/L	3.52	0.18
1242	150	0.7L	6.07	458	1.36	50.1	7.32	M/L	3.60	0.26
1246	150	1.4L	6.00	449	1.26	47.0	7.33	M/L	3.60	0.26
1249	150	1.8L	5.95	445	1.11	46.0	7.33	M/L	3.61	0.27
1252	150	2.3L	5.96	442	1.01	44.6	7.32	M/L	3.61	0.27
1255	150	2.7L	5.89	440	0.95	44.3	7.32	M/L	3.61	0.27
1258	150	3.2L	5.93	439	0.97	44.1	7.31	M/L	3.60	0.26
Parameter Stable (Check applicable)			✓	✓		✓	✓			

Sample Color: Cloudy White	**Sample Odor:** None	**Sheen:** None

Analytical Sampling

Analyses		Field Tests
GRO/BTEX - 3x HCL Amber 40 mL VOA	✓	~~Ferrous iron (Fe2+) =~~
DRO - 2x HCL Amber Glass 250 mL bottle	✓	
Petroleum VOCs – 3x HCL Amber 40 mL VOA	✓	

Notes: 8 bottles total each well

Equipment: Pump Type____GeoTech Peristaltic_____ Tubing (Type/Length) _____1/4" OD PFTE-LINED HDPE_____

Water Level Meter Slope Indicator 20953 Multi-Parameter Meter (Make/SN#)_YSI 556 07L100513

Turbidity Meter (Make/SN#)_____N/A_____ Filter Lot #_____N/A_____

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☒ Treated (how?)_APSC HAZMAT CONEX

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Surface Water Sampling Form

Client / Site Name: APSC / PS01	**Location ID:** SW-3
Project # : 105.01288.19002	Sample ID: SW-3
Sampled By: RYAN WASER-WILLIS	Sample Time: 1318 Sample Date: 8 / 16 / 2019
Weather Conditions: WARM, BREEZE ~90F	Duplicate ID: NONE
	MS/MSD ☐ Yes ☒ No Trip Blank Required: ☒ Yes ☐ No

Location Information

Distance from Bank (ft): 2.5	Depth of Water (ft): 0.4	Flowing Water: ☐ Rapid ☐ Slow	☒ Stagnant Pool
Co-Located Sediment Sample: ☐ Yes ☒ No	GPS Coordinates: Northing —	Easting —	

Sheen Test

☒ No Sheen ☐ Sheen Observed: POL-fluid rainbow / Biogenic-platey / other

Water Quality Parameters

Temp (°C)	Specific Conductance (µS/cm[c])	DO (mg/L)	pH	ORP (mV)	Color	Odor
9.60	700	8.04	7.24	119.8	CLEAR	NONE

Analytical Sampling

Analyses	Number/Type of Bottle	Preservative/ Comments	Analyses	Number/Type of Bottle	Preservative/ Comments
BTEX	3x – 40 mL VOA	HCl			
PAH SIM	2x – 250 mL Amber				
Sulfate	1x – 125 mL poly	Eq. Shop only			

Notes (indicate collection method): **250 mL unpreserved bottle dip**

Equipment Used: Pump Type N/A (Type/Length) N/A

Multi-Parameter Meter (Make/SN#) YSI 556 05B2462 AE Turbidity Meter (Make/SN#) N/A

GPS (Type/Unit Number) N/A Filter Lot # N/A

Client / Site Name: APSC / PS01	**Location ID:** SW-1
Project # : 105.01288.19002	Sample ID: SW-1
Sampled By: EVAN TYLER + RYAN WASER-WILLIS	Sample Time: 1329 Sample Date: 8 / 16 / 2019
Weather Conditions: WARM, BREEZE ~90F	Duplicate ID: SW-99 @ 1530
	MS/MSD ☐ Yes ☒ No Trip Blank Required: ☒ Yes ☐ No

Location Information

Distance from Bank (ft): 1.5	Depth of Water (ft): 0.5	Distance from Bank (ft): 1.5
Co-Located Sediment Sample: ☐ Yes ☒ No	GPS Coordinates: Northing —	Easting —

Sheen Test

☒ No Sheen ☐ Sheen Observed: POL-fluid rainbow / Biogenic-platey / other

Water Quality Parameters

Temp (°C)	Specific Conductance (µS/cm[c])	DO (mg/L)	pH	ORP (mV)	Color	Odor
6.96	342	9.03	7.67	102.7	CLEAR	NONE

Analytical Sampling

Analyses	Number/Type of Bottle	Preservative/ Comments	Analyses	Number/Type of Bottle	Preservative/ Comments
BTEX	3x – 40 mL VOA	HCl			
PAH SIM	2x – 250 mL Amber				
Sulfate (EQ Shop only)	1x – 125 mL poly	Eq. Shop only			

Notes (indicate collection method): **250 mL unpreserved bottle dip**

Equipment Used: Pump Type N/A (Type/Length) N/A

Multi-Parameter Meter (Make/SN#) YSI 556 05B2462 AE Turbidity Meter (Make/SN#) N/A

GPS (Type/Unit Number) N/A Filter Lot # N/A

Surface Water Sampling Form

Client / Site Name: APSC / PS01	**Location ID:** SW- 2
Project # : 105.01288.190 08	Sample ID: SW-2
Sampled By: Evan Tyler + Ryan Coursey Willis	Sample Time: 1337 Sample Date: 11/6/2019
Weather Conditions: OVERCAST, BLEEZE ~40°	Duplicate ID: NONE
	MS/MSD ☐ Yes ☒ No Trip Blank Required: ☒ Yes ☐ No

Location Information

Distance from Bank (ft):	Depth of Water (ft):	Flowing Water: ☐ Rapid ☐ Slow	☒ Stagnant Pool
Co-Located Sediment Sample: ☐ Yes ☒ No	GPS Coordinates: Northing —	Easting —	

Sheen Test

☐ No Sheen ☐ Sheen Observed: POL-fluid rainbow / Biogenic-platey / other

Water Quality Parameters

Temp (°C)	Specific Conductance (µS/cm^c)	DO (mg/L)	pH	ORP (mV)	Color	Odor
9.13	567	10.16	7.75	110.3	CLEAR	NONE

Analytical Sampling

Analyses	Number/Type of Bottle	Preservative/ Comments	Analyses	Number/Type of Bottle	Preservative/ Comments
BTEX	3x – 40 mL VOA	HCl			
PAH SIM	2x – 250 mL Amber				
Sulfate	1x – 125 mL poly	Eq. Shop only			

Notes (indicate collection method): **250 mL unpreserved bottle dip**

Equipment Used: Pump Type N/A (Type/Length) N/A

Multi-Parameter Meter (Make/SN#) YSI 556 05B2462 AE Turbidity Meter (Make/SN#) N/A

GPS (Type/Unit Number) N/A Filter Lot # N/A

Client / Site Name: APSC / PS01	**Location ID:** SW-
Project # : 105.01288.190 __	Sample ID:
Sampled By:	Sample Time: Sample Date: / / 2019
Weather Conditions:	Duplicate ID:
	MS/MSD ☐ Yes ☐ No Trip Blank Required: ☐ Yes ☐ No

Location Information

Distance from Bank (ft):	Depth of Water (ft):	~~Distance from Bank (ft):~~ STAGNANT WATER POOL
Co-Located Sediment Sample: ☐ Yes ☒ No	GPS Coordinates: Northing	Easting

Sheen Test

☐ No Sheen ☐ Sheen Observed: POL-fluid rainbow / Biogenic-platey / other

Water Quality Parameters

Temp (°C)	Specific Conductance (µS/cm^c)	DO (mg/L)	pH	ORP (mV)	Color	Odor

Analytical Sampling

Analyses	Number/Type of Bottle	Preservative/ Comments	Analyses	Number/Type of Bottle	Preservative/ Comments
BTEX	3x – 40 mL VOA	HCl			
PAH SIM	2x – 250 mL Amber				
Sulfate (EQ Shop only)	1x – 125 mL poly	Eq. Shop only			

Notes (indicate collection method): **250 mL unpreserved bottle dip**

Equipment Used: Pump Type N/A (Type/Length) N/A

Multi-Parameter Meter (Make/SN#) YSI 556 Turbidity Meter (Make/SN#) N/A

GPS (Type/Unit Number) N/A Filter Lot # N/A

APPENDIX D

SLR QUALITY ASSURANCE REVIEW, ADEC LABORATORY DATA REVIEW CHECKLISTS, AND LABORATORY ANALYTICAL RESULTS

2019 Water Monitoring Report
Pump Station 1 Former Gasoline Tank Area

ALYESKA PIPELINE SERVICE COMPANY
PO Box 196660
3700 Centerpoint Drive
Anchorage, Alaska 99519-6660

December 2019

REPORT

LABORATORY DATA
QUALITY ASSURANCE REVIEW

WATER MONITORING
PUMP STATION 1 FORMER GASOLINE TANK AREA

ALYESKA PIPELINE SERVICE COMPANY

November 2019

Prepared by: Francesca Risse
Reviewed by: Christophe Venot

SLR International Corporation
2700 Gambell Street, Suite 200
Anchorage, AK 99503

SLR Project Number: 105.01288.19008

ADEC File Number: 330.38.019

Hazard ID: 1741

ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
AK	Alaska
ADEC	Alaska Department of Environmental Conservation
BTEX	benzene, toluene, ethylbenzene, and xylenes
°C	degrees Celsius
CCV	continuing calibration verification
COC	chain of custody
DL	detection limit
DRO	diesel range organics
EDD	electronic data deliverable
FGTA	former gasoline tank area
GRO	gasoline range organics
ID	identifier
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
LV	low volume
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
NA	not applicable
NFG	National Functional Guidelines for Superfund Organic Methods Data Review
PAH	polynuclear aromatic hydrocarbons
PARCCS	precision, accuracy, representativeness, comparability, completeness, and sensitivity
PDF	portable data format
PS01	pump station 1
PVOC	petroleum volatile organic compound
QA	quality assurance
QAR	quality assurance review
QC	quality control
RPD	relative percent difference
RRO	residual range organics
SDG	sample delivery group
SGS	SGS North America, Inc.
SIM	selective ion monitoring
SLR	SLR International Corporation
USEPA	United States Environmental Protection Agency

Introduction

This report summarizes a review of analytical data for groundwater and surface water samples collected on August 16, 2019 at the Pump Station 1 (PS01) Former Gas Tank Area (FGTA). Samples were collected by SLR International Corporation (SLR). SGS North America, Inc. (SGS) provided analytical support to the project. SGS maintains a current Alaska Department of Environmental Conservation (ADEC) Contaminated Sites approval number 17-021 for analytical methods of interest, as applicable. Table 1 provides a summary of the sample receipt information and matrices. Table 2 provides a summary of matrices, analytical methods, and analytes.

Table 1 Sample Receipt and Matrix Summary

SDG	Date Collected	Date Received by Laboratory	Temperature Blank	Matrix
1194733	08/16/2019	08/19/2019	1.0°C	Surface Water and Groundwater

Acronyms:
°C – degrees Celsius
SDG – sample delivery group

Table 2 Matrix, Method, and Analyte Summary

Matrix	Method	Analyte
Groundwater	SW8260C	PVOCs[1]
	AK101	GRO
	AK102	DRO
Surface water	SW8021B	BTEX
	SW8270D LV	PAH SIM

Note:
1 – PVOC analytes are: benzene, toluene, ethylbenzene, total xylenes (m,p –xylene and o-xylene), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, isopropylbenzene (cumene), 1,2-dibromoethane (EDB), 1,2-dichloroethane (DCA), methyl-t-butyl ether, naphthalene, n-butylbenzene, sec-butylbenzene, and tert-butylbenzene.
Acronyms:
AK – Alaska
BTEX – benzene, toluene, ethylbenzene, and xylenes
DRO – diesel range organics
GRO – gasoline range organics
LV – low volume
PAH – polynuclear aromatic hydrocarbons
PVOC – petroleum volatile organic compound
SIM – selective ion monitoring

The laboratory final report was provided as a Level II deliverable and included documentation of the delivery group chain of custody (COC) and sample receipt condition. A Microsoft Access compatible electronic data deliverable (EDD) for the report was also provided. The portable data format (PDF) laboratory report is provided electronically as Attachment 2.

Quality Assurance Program

A quality assurance (QA) program was followed for this project that addressed project administration, sampling, quality control (QC), and data review. SLR adhered to required and established sampling and COC protocols. The select laboratory maintains an internal quality assurance program and standard operating procedures.

The analytical data was reviewed for consistency with any project specific requirements, the ADEC Technical Memorandum *Environmental Laboratory Data and Quality Assurance* (ADEC, 2017) requirements, United States Environmental Protection Agency (USEPA) *National Functional Guidelines for Superfund Organic Methods Data Review* (NFG, 2017), analytical method criteria, and laboratory criteria. An ADEC Laboratory Data Review Checklist was completed for the SDG, and was included as Attachment 1 to this Quality Assurance Review (QAR). A review for any anomalies to the project requirements for precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS) are noted in this QAR, and any data qualifications discussed.

The data review included the following, as applicable:

- Reviewing COC records for completeness, signatures, and dates;
- Identifying any sample receipt or preservation anomalies that could impact data quality;
- Verifying that QC blanks (e. g. , field blanks, equipment blanks, trip blanks, method blanks, etc.); were properly prepared, identified, and analyzed;
- Evaluating whether laboratory reporting limits met project goals;
- Reviewing calibration verification recoveries, to include confirming that the laboratory did not identify any Continuing Calibration Verification (CCV) recoveries or other calibration related criteria as being outside applicable acceptance limits;
- Reviewing the case narrative for any discussion of any internal standard recoveries outside of acceptance limits. Internal standard performance was not otherwise presented in the report or in the electronic data deliverable and was reviewed only from the case narrative;
- Verifying that surrogate analyses were within recovery acceptance limits;
- Verifying that Laboratory Control Samples (LCS), and Laboratory Control Sample Duplicates (LCSD) recoveries were within acceptance limits;
- Evaluating the result relative percent difference (RPD) between primary and duplicate field samples and LCS/LCSDs; and
- Providing an overall assessment of laboratory data quality and qualifying sample results as necessary.

Data Qualifications

As part of the quality assurance review, qualifiers (i.e. data flags) were applied to data as determined necessary based on specified criteria, or professional judgement. In all cases, the basis for qualification and the applied data flag are discussed in this QAR. Table 3 provides a list of potential qualifiers (i.e., flags). These data flags were appended to the data as appropriate.

Table 3 Data Qualifiers

Lab Qualifier (Flag)	NFG Qualifier (Flag)	Equivalent Project Qualifier (Flag)[1,2,3]	Definition
U	U	**ND**	The analyte was analyzed for, but was not detected above the detection limit (DL).
J	NJ	**J**	The analyte has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the sample between the limit of quantitation (LOQ) and the DL. This qualifier is appended by the laboratory.
--	J	**Q**	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample, due to one or more laboratory quality control criteria (e.g., LCS recovery, surrogate spike recovery) failed or matrix effect. Where applicable, a "+" or "-" was appended to indicate a high bias, or a low bias respectively.
--	UJ	**UJ**	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
--	--	**B**	Blank contamination: The analyte was positively identified in the blank (e.g., trip blank and/or method blank) associated with the sample and the concentration reported for the sample was less than five times that of the blank (ten times for metals and common laboratory contaminants methylene chloride and acetone). Where applicable, "U" was appended prior to the "B" to indicate the blank detection was greater than the sample detection or both the blank detection and sample detection were below the limit of detection (LOD), and the result is likely a false positive. The greater of the sample detection or LOD was reported as non-detect in brackets.
--	R	R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

Notes:

1 – Flags were appended to the data where applicable. The table presents laboratory, NFG and project equivalent qualifiers.

2 – Only flags in **bold** were applicable and appended to data for this project.

3 – For historical purposes, ND was used in place of "U."

A discussion of the project data quality relative to PARCCS goals and summary of any anomalies or failures requiring data qualifiers follows.

Data Validation

Data Packages
The data package was checked for transcription errors, omissions, or other anomalies. Any issues with regards to the data package are noted below.

- The case narrative noted two residual range organics (RRO) detections in method blanks between the LOD and LOQ. RRO was not a target analyte, therefore data was not impacted.

Sample Receipt
The sample receipt documentation was checked for anomalies. Issues regarding the receipt of samples were limited to that noted below.

- The sample receipt form noted the following: "Container for 14R labeled mw-19 identifying per collection time." The comment was clarified per conversation with SGS as follows. Laboratory personnel noticed that one container was missing for sample MW-14R, and there was one extra container for sample MW-19. They found that the extra container labeled MW-19 had the collection time for MW-14R written on the container label. Since each sample had a unique collection time, they concluded that this was meant to be the missing container for MW-14R and logged it in as the secondary container for MW-14R. Since the container matched collection time and was presumably not used for analysis being the secondary container, no samples or data were considered impacted.

Preservation (Chemical and Temperature)
No issues were noted in regard to sample preservation. Samples were appropriately preserved and were submitted to SGS.

Holding Times
All sample analyses were conducted within holding time criteria.

Laboratory Method Blanks
Laboratory method blanks were analyzed at the appropriate frequencies. All method blanks with detections and the affected results are listed in Table 4 below. Associated sample results of non-detect or greater than five times that of the blank detection were considered unaffected and were not shown in Table 4. Affected data were qualified as noted in the table. Since a high bias was indicated and all affected results were below the applicable ADEC cleanup level of 1.5 milligrams per liter (mg/L) for DRO, data usability was not impacted. All data were usable as qualified.

Table 4 Method Blank Detections and Affected Results

Sample ID	Batch	Method (Analyte)	Lab Result and Flag (mg/L)	LOD (mg/L)	Reported Result and Flag[1] (mg/L)
Method Blank	XXX42077	AK102 (DRO)	**0.445 J**	0.3	NA
MW-18			0.503 J	0.278	0.503 J,B
MW-22			0.83	0.294	0.83 B
Method Blank	XXX42097	AK102 (DRO)	**0.231 J**	0.3	NA
MW-8			0.58	0.283	0.58 B
MW-12			0.272 J	0.294	[0.294] UB
MW-13			0.268 J	0.278	[0.278] UB
MW-14R			0.277 J	0.283	[0.283] UB
MW-16R			0.359 J	0.288	0.359 J,B
MW-19			0.851	0.278	0.851 B
MW-23			0.436 J	0.288	0.436 J,B
Method Blank	XXX42115	AK102 (DRO)	**0.238 J**	0.3	NA
MW-2			0.321 J	0.278	0.321 J,B
MW-3			0.487 J	0.283	0.487 J,B
MW-4R			0.22 J	0.278	[0.278] UB
MW-7R			0.252 J	0.278	[0.278] UB
MW-20			0.317 J	0.294	0.317 J,B
MW-98			0.254 J	0.278	[0.278] UB

Notes:
1 – A UB flag indicates non-detect due to an associated blank contamination, and the original result was likely a false positive. Per NFG and SLR guidelines where blank detection is greater than the sample detection or both the blank detection and sample detection were below the LOD, the greater of the sample detection or LOD was reported in brackets and qualified as non-detect.
Acronyms:
ID – identifier
NA – not applicable

Trip Blanks

Analytes were not detected in any trip blanks at or above the LOD or DL. Trip blanks were submitted and analyzed at the appropriate frequencies for volatile methods (GRO by AK101, BTEX by SW8021B, and PVOCs by SW8260C).

Reporting Limits

Non-detect sample results with LODs not meeting applicable cleanup levels were limited to those noted below. In all instances, analytes not meeting project cleanup levels were due to necessary dilutions due to high target analyte concentration; therefore, data usability was considered not impacted. LODS greater than cleanup levels are summarized as follows:

- Results for 1,2-dibromoethane and 1,2-dichloroethane by Method SW8260C in sample MW-99 were non-detect and were reported at LODs greater than applicable cleanup levels due to a necessary 20-fold dilution. For 1,2-dibromoethane, the LOD was 0.00075 mg/L and the cleanup level was 0.000075 mg/L. For 1,2-dichloroethane, the LOD was 0.005 mg/L and the cleanup level was 0.0017 mg/L. Data usability was not impacted since the dilution was necessary due to high target analyte concentration. All data were usable without qualification.

Groundwater sample LODs were compared to Table C, Groundwater Cleanup Levels contained in Title 18 of the Alaska Administrative Code (AAC) Chapter 75, Oil and Other Hazardous Substances Pollution Control, section 75.345 (ADEC, 2018b). Surface water samples LODs were compared to values in Water Quality Standards, 18 AAC 70, (ADEC, 2018a). ADEC 18 AAC 70 references Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances (ADEC, 2008).

Continuing Calibration Verifications
All CCV recoveries were within acceptable limits. CCVs were analyzed at the appropriate frequencies. CCV data was included only in the EDD, not in the case narrative.

Internal Standards
Internal standard performance criteria were considered met. No internal standards were noted in the case narrative as outside of acceptance limits.

Surrogate Recovery Results
All surrogate recoveries were within analytical method and SGS percent recovery acceptance limits. Surrogate analysis was performed at the required frequencies.

Laboratory Control Samples and Laboratory Control Duplicate Samples
All LCS and LCSD recoveries and RPDs were within analytical method and SGS percent recovery acceptance limits. LCS and LCSDs were analyzed at the appropriate frequencies.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Samples
No MS or MSD samples were analyzed in association with these samples.

Field Duplicates
The field duplicate sample frequency is presented in Table 5 and parent sample and field duplicate pairs are presented in Table 6. Field duplicate RPDs that exceeded the ADEC required 30% for waters are listed in Table 7 and discussed below. Samples with both results below the LOQ (J flagged or non-detect) were considered acceptable without qualification. The frequency satisfied the requirement of one per 10 samples or less per matrix and analyte. Field duplicates were submitted blind to the laboratory.

The MW-18/MW-98 parent sample/field duplicate pair was associated an RPD exceedance as qualified as shown in Table 7. Impacted analytes for all chronologically associated field samples were qualified "Q" for detected results and "UJ" for non-detect results. Laboratory precision was established by an LCS/LCSD pair with RPDs within acceptable limits and only one sample exceeded any ADEC cleanup levels, thus the impact to data was considered minimal. Sample MW-19 had several PVOC analytes exceed ADEC cleanup levels, therefore those results associated with the RPD exceedance should be considered an exceedance of ADEC criteria. Chronologically associated samples are listed in the Table 7 footnotes. All data were usable as qualified.

Table 5 Field Duplicate Frequency, Methods, and Analytes

Matrix	Analytical Method	Analyte	Number of Primary Samples	Number of Field Duplicates
Groundwater	AK101	GRO	17	2
	AK102	DRO	17	2
	SW8260C	PVOCs	17	2
Surface water	SW8021B	BTEX	3	1
	SW8270D LV	PAH SIM	3	1

Table 6 Field Duplicate Identification

Sample Type	Parent Sample ID	Duplicate Sample ID	All RPDs acceptable (Y/N)
Groundwater	MW-18	MW-98	N
Groundwater	MW-9	MW-99	Y
Surface water	SW-1	SW-99	Y

Table 7 Field Duplicate RPD Exceedances

Matrix	Method (Analyte)	Specific Analyte	Parent Sample ID MW-18[1]	Field Duplicate ID MW-98[1]	RPD	Flag
			Result (mg/L)	Result (mg/L)		
Groundwater	SW8260C (PVOCs)	1,2,4-Trimethylbenzene	0.00343	0.00476	32.5%	Q
		1,3,5-Trimethylbenzene[2]	0.00145	0.00197	30.4%[2]	NA[2]
		Ethylbenzene	0.0023	0.00326	34.5%	Q
		P & M -Xylene	0.00232	0.00324	33.1%	Q
		Xylenes (total)	0.00232 J	0.00324	33.1%	J, Q

Notes:

1 – Samples chronologically associated with this parent sample/field duplicate pair for all listed analytes were MW-22, MW-23, MW-19, MW-17R, MW-15, MW-14R, MW-16R, MW-13, and MW-12. Samples were qualified "Q" for detected results and "UJ" for non-detect results.

2 – RPD of 30.4% was considered to be within the 30% criteria due to rounding and qualification was not necessary.

Laboratory Duplicate Samples

No laboratory duplicates were analyzed in association with these samples.

Overall Assessment

Precision, Accuracy, Representativeness, Comparability, Completeness, and Sensitivity Summary

- Precision: Precision goals were met, except as noted in the Field Duplicates section.
- Accuracy: Accuracy goals were met
- Representativeness: Representativeness goals were met. The samples were collected from usual locations in accordance with applicable requirements and guidance documents.
- Comparability: Comparability goals were met. SGS laboratory provided analytical support for all methods.
- Completeness: Completeness goals were met. The data were 100% complete with respect to analysis because no data were rejected.
- Sensitivity: Sensitivity goals were met, except as noted in the Data Packages, Laboratory Method Blanks, and Reporting Limits sections.

This data were considered of good quality and acceptable for use with the noted qualifications in this QAR. No data were rejected.

References

ADEC, 2008. Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances. December.

ADEC, 2017. Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling. Technical Memorandum. March.

ADEC, 2018a. 18 AAC 70, Water Quality Standards. Amended as of April 6.

ADEC, 2018b. 18 AAC 75, Oil and Other Hazardous Substances Pollution Control. As amended through October 27.

USEPA, 2017. National Functional Guidelines for Superfund Organic Methods Data Review (NFG). January.

Attachments

Attachment 1 – ADEC Laboratory Data Review Checklist
Attachment 2 – Laboratory Deliverables

Attachment 1

ADEC Laboratory Data Review Checklist

Laboratory Data Review Checklist

Completed By:

Francesca Risse

Title:

Staff Engineer

Date:

December 19, 2019

Consultant Firm:

SLR International Corporation

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1194733

Laboratory Report Date:

September 5, 2019

CS Site Name:

Alyeska PS 01 Former Gas Tank Area

ADEC File Number:

330.38.019

Hazard Identification Number:

1741

1194733

Laboratory Report Date:

September 5, 2019

CS Site Name:

Alyeska PS 01 Former Gas Tank Area

Note: Any N/A or No box checked must have an explanation in the comments box.

1. Laboratory

   a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

   Yes☒ No☐ N/A☐ Comments:

Samples were received and analyzed at SGS' Anchorage Laboratory. SGS maintains a current ADEC Contaminated Sites approval number (17-021) for analytical methods of interest, as applicable.

   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☐ N/A☒ Comments:

All analyses were conducted at SGS, Anchorage.

2. Chain of Custody (CoC)

   a. CoC information completed, signed, and dated (including released/received by)?

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

3. Laboratory Sample Receipt Documentation

   a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

   Yes☒ No☐ N/A☐ Comments:

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

   Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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☐ N/A☐ Comments:

The sample receipt form noted: "Container for 14R labeled mw-19 identifying per collection time." The comment was clarified per conversation with SGS as follows. Laboratory personnel noticed that one container was missing for sample MW-14R, and there was one extra container for sample MW-19. They found that the extra container labeled MW-19 had the collection time for MW-14R written on the container label. Since each sample had a unique collection time, they concluded that this was meant to be the missing container for MW-14R and logged it in as the secondary container for MW-14R.

e. Data quality or usability affected?

Comments:

Since the container matched collection time and was presumably not used for analysis being the secondary container, no samples or data were considered impacted.

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

The case narrative noted two RRO detections in method blanks between the LOD and LOQ. RRO was not a target analyte, therefore data was not impacted.

c. Were all corrective actions documented?

Yes☐ No☐ N/A☒ Comments:

No corrective actions were performed.

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

Comments:

No impact.

5. Samples Results

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

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

No soils samples were analyzed.

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

Yes☐ No☒ N/A☐ Comments:

LODs for non-detect results were compared to applicable cleanup levels for the site. For groundwater samples, LODs were compared to 18 AAC 75, Oil and Other Hazardous Substances Pollution Control, section 75. 345 Table C, Groundwater Cleanup Levels. For surface water samples, LODs were compared to 18 AAC 70, Water Quality Standards. ADEC 18 AAC 70 references Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances.

For groundwater sample MW-99, two analytes (1,2-dibromoethane and 1,2-dichloroethane) had non-detect results with LODs above ADEC 18 AAC 75, Table C cleanup levels due to necessary dilution, due to high target analyte concentration.

e. Data quality or usability affected?

Because the dilutions were necessary due to high target analyte concentration, data quality or usability was considered not affected.

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6. QC Samples

a. Method Blank

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

Yes☒ No☐ N/A☐ Comments:

ii. All method blank results less than limit of quantitation (LOQ) or project specified objectives?

Yes☐ No☒ N/A☐ Comments:

DRO was detected in three method blanks between the DL and LOQ.

iii. If above LOQ or project specified objectives, what samples are affected?

Comments:

No analytes were detected above the LOQ.
Samples affected by the three DRO detections between the DL and LOQ were:
1 – for MB for batch XXX42077, affected samples were MW-18 and MW-22.
2 – for MB for batch XXX42097, affected samples were MW-8, MW-12, MW-13, MW-14R, MW-16R, MW-19, and MW-23.
3 – for MB for batch XXX42077, affected samples were MW-2, MW-3, MW-4R, MW-7R, MW-20, and MW-98.

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

Yes☒ No☐ N/A☐ Comments:

The associated sample detections that were less than the blank detection and/or the LOD, or where both the blank and sample detections were less than the LOD, were qualified with "UB" as non-detect. The associated detections that were greater than both the blank detection and LOD were qualified with "B" to indicate blank detection.

v. Data quality or usability affected?

Comments:

In all cases a high bias was indicated, and impacted results were below the applicable cleanup level of 1.5 mg/L for DRO; therefore, data usability was not impacted. All data were usable as qualified.

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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☐ N/A☐ Comments:

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

Yes☐ No☒ N/A☐ Comments:

No metals or inorganics were analyzed for this workorder.

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ 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☐ N/A☒ Comments:

No samples were affected.

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

Comments:

No impact.

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c. Matrix Spike/Matrix Spike Duplicate (MS/MSD)

Note: Leave blank if not required for project

i. Organics – One MS/MSD reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☐ Comments:

ii. Metals/Inorganics – one MS and one MSD reported per matrix, analysis and 20 samples?

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Comments:

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

Yes☐ No☐ N/A☐ Comments:

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

Comments:

d. Surrogates – Organics Only or Isotope Dilution Analytes (IDA) – Isotope Dilution Methods Only

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

All surrogates were acceptable.

iv. Data quality or usability affected?

Comments:

No impact.

e. Trip Blanks

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

Yes☒ No☐ N/A☐ 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☐ N/A☐ Comments:

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iii. All results less than LOQ and project specified objectives?

Yes☒ No☐ N/A☐ Comments:

iv. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A

v. Data quality or usability affected?

Comments:

No impact.

f. Field Duplicate

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

Yes☒ No☐ N/A☐ Comments:

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

MW-98 was a duplicate of MW-18
MW-99 was a duplicate of MW-9
SW-99 was a duplicate of SW-1

iii. Precision – All relative percent differences (RPD) less than specified project objectives? (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☒ N/A☐ Comments:

Parent sample/field duplicate pair MW-18/MW-98 had RPDs for four analytes (1,2,4-trimethylbenzene, ethylbenzene, P & M -xylene, and total xylenes) exceeding the 30% for waters criteria.
For 1,3,5-trimethylbenzene, MW-18/MW-98 had an RPD of 30.4% and was considered within criteria due to rounding.

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

Comments:

Impacted analytes for all chronologically associated field samples were qualified "Q" for detected results to indicate an estimated value, and "UJ" for non-detect results to indicate an estimated reporting limit. In all cases, laboratory precision was established by an LCS/LCSD pair with RPDs within acceptable limits, thus the impact to data was considered minimal. All data were usable as qualified.

g. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below)?

Yes☐ No☐ N/A☒ Comments:

Dedicated or disposable equipment was used for the collection of all samples.

i. All results less than LOQ and project specified objectives?

Yes☐ No☐ N/A☒ Comments:

Dedicated or disposable equipment was used for the collection of all samples.

ii. If above LOQ or project specified objectives, what samples are affected?

Comments:

N/A

iii. Data quality or usability affected?

Comments:

N/A

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

a. Defined and appropriate?

Yes☒ No☐ N/A☐ Comments:

Attachment 2
Laboratory Deliverable

(Data package)

Laboratory Report of Analysis

To: Alyeska Pipeline Srv Co.
4601 Business Park Blvd K42
Anchorage, AK 99503
(907)222-1112

Report Number: **1194733**

Client Project: **105.01288.19008 PS01 Fmr GT**

Dear Scott Rose,

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 Justin 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

Justin Nelson
2019.09.05
15:48:30 -08'00'

Justin Nelson Date
Project Manager
Justin.Nelson@sgs.com

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

Case Narrative

SGS Client: **Alyeska Pipeline Srv Co.**
SGS Project: **1194733**
Project Name/Site: **105.01288.19008 PS01 Fmr GT**
Project Contact: **Scott Rose**

Refer to sample receipt form for information on sample condition.

MB for HBN 1798284 [XXX/42077] (1526966) MB

AK102/103 - DRO/RRO is detect in the MB greater than one half the LOQ, but less than the LOQ.

MB for HBN 1798508 [XXX/42115] (1527923) MB

AK102/103 - RRO is detect in the MB greater than one half the LOQ, but less than the LOQ.

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

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
t 907.562.2343 **f** 907.561.5301 www.us.sgs.com

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. 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.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

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) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8015C, 8021B, 8082A, 8260C, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification, and only those analytes will be reported to the State of Alaska for compliance. 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
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
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
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.

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

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
MW-18	1194733001	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-22	1194733002	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-23	1194733003	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-19	1194733004	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-17R	1194733005	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-15	1194733006	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-16R	1194733007	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-14R	1194733008	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-13	1194733009	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-12	1194733010	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-9	1194733011	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-8	1194733012	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-4R	1194733013	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-2	1194733014	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-20	1194733015	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-3	1194733016	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-7R	1194733017	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-98	1194733018	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
MW-99	1194733019	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
SW-1	1194733020	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
SW-2	1194733021	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
SW-3	1194733022	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
SW-99	1194733023	08/16/2019	08/19/2019	Water (Surface, Eff., Ground)
FGTA TB-1	1194733024	08/02/2019	08/19/2019	Water (Surface, Eff., Ground)
FGTA TB-2	1194733025	08/02/2019	08/19/2019	Water (Surface, Eff., Ground)
FGTA TB-3	1194733026	08/02/2019	08/19/2019	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM LV (PAH)	8270 PAH SIM GC/MS Liq/Liq ext. LV
SW8021B	BTEX 8021
AK102	DRO Low Volume (W)
AK101	Gasoline Range Organics (W)
SW8260C	Volatile Organic Compounds (W) FULL

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Detectable Results Summary

Client Sample ID: **MW-18**
Lab Sample ID: 1194733001
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	0.503J	mg/L
Gasoline Range Organics	0.0804J	mg/L
1,2,4-Trimethylbenzene	3.43	ug/L
1,3,5-Trimethylbenzene	1.45	ug/L
Benzene	6.88	ug/L
Ethylbenzene	2.30	ug/L
Isopropylbenzene (Cumene)	0.630J	ug/L
P & M -Xylene	2.32	ug/L
Toluene	0.410J	ug/L
Xylenes (total)	2.32J	ug/L

Client Sample ID: **MW-22**
Lab Sample ID: 1194733002
Semivolatile Organic Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	0.830	mg/L
Benzene	0.180J	ug/L

Client Sample ID: **MW-23**
Lab Sample ID: 1194733003
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	0.436J	mg/L
Gasoline Range Organics	0.181	mg/L
1,2,4-Trimethylbenzene	7.74	ug/L
1,3,5-Trimethylbenzene	5.64	ug/L
Benzene	37.5	ug/L
Ethylbenzene	7.90	ug/L
Isopropylbenzene (Cumene)	2.59	ug/L
P & M -Xylene	15.3	ug/L
Xylenes (total)	15.3	ug/L

Client Sample ID: **MW-19**
Lab Sample ID: 1194733004
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	0.851	mg/L
Gasoline Range Organics	17.4	mg/L
1,2,4-Trimethylbenzene	98.4	ug/L
1,3,5-Trimethylbenzene	26.3	ug/L
Benzene	2340	ug/L
Ethylbenzene	1180	ug/L
Isopropylbenzene (Cumene)	27.5	ug/L
Naphthalene	2.32	ug/L
o-Xylene	1420	ug/L
P & M -Xylene	3850	ug/L
Toluene	3.99	ug/L
Xylenes (total)	5270	ug/L

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Detectable Results Summary

Client Sample ID: **MW-17R**
Lab Sample ID: 1194733005
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	2.06	mg/L
Gasoline Range Organics	0.0454J	mg/L
1,2,4-Trimethylbenzene	0.780J	ug/L
1,3,5-Trimethylbenzene	0.590J	ug/L
Benzene	2.68	ug/L
Ethylbenzene	1.33	ug/L
o-Xylene	5.25	ug/L
P & M -Xylene	4.47	ug/L
Toluene	1.46	ug/L
Xylenes (total)	9.72	ug/L

Client Sample ID: **MW-15**
Lab Sample ID: 1194733006
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	5.76	mg/L
Gasoline Range Organics	0.287	mg/L
1,2,4-Trimethylbenzene	10.5	ug/L
1,3,5-Trimethylbenzene	4.21	ug/L
Benzene	25.3	ug/L
Ethylbenzene	11.3	ug/L
Isopropylbenzene (Cumene)	1.87	ug/L
Naphthalene	3.30	ug/L
o-Xylene	28.4	ug/L
P & M -Xylene	44.1	ug/L
Toluene	34.6	ug/L
Xylenes (total)	72.4	ug/L

Client Sample ID: **MW-16R**
Lab Sample ID: 1194733007
Semivolatile Organic Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	0.359J	mg/L
Benzene	0.250J	ug/L

Client Sample ID: **MW-14R**
Lab Sample ID: 1194733008
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.277J	mg/L

Client Sample ID: **MW-13**
Lab Sample ID: 1194733009
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.268J	mg/L

Client Sample ID: **MW-12**
Lab Sample ID: 1194733010
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.272J	mg/L

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Detectable Results Summary

Client Sample ID: **MW-9**
Lab Sample ID: 1194733011
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	1.38	mg/L
Gasoline Range Organics	24.9	mg/L
1,2,4-Trimethylbenzene	523	ug/L
1,3,5-Trimethylbenzene	183	ug/L
Benzene	1850	ug/L
Ethylbenzene	1700	ug/L
Isopropylbenzene (Cumene)	106	ug/L
Naphthalene	7.96	ug/L
o-Xylene	2580	ug/L
P & M -Xylene	5880	ug/L
tert-Butylbenzene	0.800J	ug/L
Toluene	647	ug/L
Xylenes (total)	8460	ug/L

Client Sample ID: **MW-8**
Lab Sample ID: 1194733012
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	0.580	mg/L
Gasoline Range Organics	4.05	mg/L
1,2,4-Trimethylbenzene	3.81	ug/L
1,3,5-Trimethylbenzene	1.29	ug/L
Benzene	1080	ug/L
Ethylbenzene	21.8	ug/L
Isopropylbenzene (Cumene)	0.920J	ug/L
Naphthalene	1.82	ug/L
o-Xylene	45.4	ug/L
P & M -Xylene	41.8	ug/L
Toluene	1150	ug/L
Xylenes (total)	87.2	ug/L

Client Sample ID: **MW-4R**
Lab Sample ID: 1194733013
Semivolatile Organic Fuels
Volatile Fuels

Parameter	Result	Units
Diesel Range Organics	0.220J	mg/L
Gasoline Range Organics	0.0314J	mg/L

Client Sample ID: **MW-2**
Lab Sample ID: 1194733014
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.321J	mg/L

Client Sample ID: **MW-20**
Lab Sample ID: 1194733015
Semivolatile Organic Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	0.317J	mg/L
Benzene	2.54	ug/L
Ethylbenzene	0.460J	ug/L

Client Sample ID: **MW-3**
Lab Sample ID: 1194733016
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.487J	mg/L

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Detectable Results Summary

Client Sample ID: **MW-7R**
Lab Sample ID: 1194733017
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.252J	mg/L

Client Sample ID: **MW-98**
Lab Sample ID: 1194733018
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	0.254J	mg/L
Gasoline Range Organics	0.106	mg/L
1,2,4-Trimethylbenzene	4.76	ug/L
1,3,5-Trimethylbenzene	1.97	ug/L
Benzene	8.36	ug/L
Ethylbenzene	3.26	ug/L
Isopropylbenzene (Cumene)	0.880J	ug/L
P & M -Xylene	3.24	ug/L
Toluene	0.590J	ug/L
Xylenes (total)	3.24	ug/L

Client Sample ID: **MW-99**
Lab Sample ID: 1194733019
Semivolatile Organic Fuels
Volatile Fuels
Volatile GC/MS- Petroleum VOC Group

Parameter	Result	Units
Diesel Range Organics	1.35	mg/L
Gasoline Range Organics	22.8	mg/L
1,2,4-Trimethylbenzene	600	ug/L
1,3,5-Trimethylbenzene	180	ug/L
Benzene	1770	ug/L
Ethylbenzene	1700	ug/L
Isopropylbenzene (Cumene)	96.6	ug/L
Naphthalene	7.73	ug/L
o-Xylene	2620	ug/L
P & M -Xylene	5830	ug/L
Toluene	622	ug/L
Xylenes (total)	8450	ug/L

Client Sample ID: **SW-1**
Lab Sample ID: 1194733020
Volatile Fuels

Parameter	Result	Units
Benzene	3.01	ug/L
o-Xylene	0.373J	ug/L

Client Sample ID: **SW-2**
Lab Sample ID: 1194733021
Volatile Fuels

Parameter	Result	Units
Benzene	1.77	ug/L

Client Sample ID: **SW-99**
Lab Sample ID: 1194733023
Volatile Fuels

Parameter	Result	Units
Benzene	3.07	ug/L
o-Xylene	0.354J	ug/L

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Results of **MW-18**

Client Sample ID: **MW-18**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733001
Lab Project ID: 1194733

Collection Date: 08/16/19 09:56
Received Date: 08/19/19 13:20
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	0.503	J	0.556	0.167	mg/L	1		08/26/19 21:57
Surrogates								
5a Androstane (surr)	68.6		50-150		%	1		08/26/19 21:57

Batch Information

Analytical Batch: XFC15276
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/26/19 21:57
Container ID: 1194733001-G

Prep Batch: XXX42077
Prep Method: SW3520C
Prep Date/Time: 08/23/19 08:39
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Results of **MW-18**

Client Sample ID: **MW-18**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733001
Lab Project ID: 1194733

Collection Date: 08/16/19 09:56
Received Date: 08/19/19 13:20
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	0.0804	J	0.100	0.0310	mg/L	1		08/20/19 22:42
Surrogates								
4-Bromofluorobenzene (surr)	83.3		50-150		%	1		08/20/19 22:42

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/20/19 22:42
Container ID: 1194733001-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-18**

Client Sample ID: **MW-18**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733001
Lab Project ID: 1194733

Collection Date: 08/16/19 09:56
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	3.43		1.00	0.310	ug/L	1		08/27/19 15:40
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/27/19 15:40
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/27/19 15:40
1,3,5-Trimethylbenzene	1.45		1.00	0.310	ug/L	1		08/27/19 15:40
Benzene	6.88		0.400	0.120	ug/L	1		08/27/19 15:40
Ethylbenzene	2.30		1.00	0.310	ug/L	1		08/27/19 15:40
Isopropylbenzene (Cumene)	0.630	J	1.00	0.310	ug/L	1		08/27/19 15:40
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/27/19 15:40
Naphthalene	0.500	U	1.00	0.310	ug/L	1		08/27/19 15:40
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 15:40
o-Xylene	0.500	U	1.00	0.310	ug/L	1		08/27/19 15:40
P & M -Xylene	2.32		2.00	0.620	ug/L	1		08/27/19 15:40
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 15:40
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 15:40
Toluene	0.410	J	1.00	0.310	ug/L	1		08/27/19 15:40
Xylenes (total)	2.32	J	3.00	1.00	ug/L	1		08/27/19 15:40
Surrogates								
1,2-Dichloroethane-D4 (surr)	106		81-118		%	1		08/27/19 15:40
4-Bromofluorobenzene (surr)	98.6		85-114		%	1		08/27/19 15:40
Toluene-d8 (surr)	101		89-112		%	1		08/27/19 15:40

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 15:40
Container ID: 1194733001-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-22**

Client Sample ID: **MW-22**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733002
Lab Project ID: 1194733

Collection Date: 08/16/19 09:57
Received Date: 08/19/19 13:20
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	0.830		0.588	0.176	mg/L	1		08/26/19 22:06
Surrogates								
5a Androstane (surr)	68		50-150		%	1		08/26/19 22:06

Batch Information

Analytical Batch: XFC15276
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/26/19 22:06
Container ID: 1194733002-G

Prep Batch: XXX42077
Prep Method: SW3520C
Prep Date/Time: 08/23/19 08:39
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **MW-22**

Client Sample ID: **MW-22**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733002
Lab Project ID: 1194733

Collection Date: 08/16/19 09:57
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/20/19 22:59
Surrogates								
4-Bromofluorobenzene (surr)	77.8		50-150		%	1		08/20/19 22:59

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/20/19 22:59
Container ID: 1194733002-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-22**

Client Sample ID: **MW-22**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733002
Lab Project ID: 1194733

Collection Date: 08/16/19 09:57
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		08/27/19 16:10
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		08/27/19 16:10
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
Benzene	0.180 J		0.400	0.120	ug/L	1		08/27/19 16:10
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/27/19 16:10
Naphthalene	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
o-Xylene	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		08/27/19 16:10
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
Toluene	0.500 U		1.00	0.310	ug/L	1		08/27/19 16:10
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		08/27/19 16:10
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		08/27/19 16:10
4-Bromofluorobenzene (surr)	101		85-114		%	1		08/27/19 16:10
Toluene-d8 (surr)	103		89-112		%	1		08/27/19 16:10

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 16:10
Container ID: 1194733002-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-23**

Client Sample ID: **MW-23**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733003
Lab Project ID: 1194733

Collection Date: 08/16/19 10:44
Received Date: 08/19/19 13:20
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	0.436	J	0.577	0.173	mg/L	1		08/27/19 19:11
Surrogates								
5a Androstane (surr)	70.8		50-150		%	1		08/27/19 19:11

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 19:11
Container ID: 1194733003-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-23**

Client Sample ID: **MW-23**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733003
Lab Project ID: 1194733

Collection Date: 08/16/19 10:44
Received Date: 08/19/19 13:20
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	0.181		0.100	0.0310	mg/L	1		08/20/19 23:17
Surrogates								
4-Bromofluorobenzene (surr)	96.8		50-150		%	1		08/20/19 23:17

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/20/19 23:17
Container ID: 1194733003-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-23**

Client Sample ID: **MW-23**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733003
Lab Project ID: 1194733

Collection Date: 08/16/19 10:44
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	7.74		1.00	0.310	ug/L	1		08/27/19 16:25
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/27/19 16:25
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/27/19 16:25
1,3,5-Trimethylbenzene	5.64		1.00	0.310	ug/L	1		08/27/19 16:25
Benzene	37.5		0.400	0.120	ug/L	1		08/27/19 16:25
Ethylbenzene	7.90		1.00	0.310	ug/L	1		08/27/19 16:25
Isopropylbenzene (Cumene)	2.59		1.00	0.310	ug/L	1		08/27/19 16:25
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/27/19 16:25
Naphthalene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:25
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:25
o-Xylene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:25
P & M -Xylene	15.3		2.00	0.620	ug/L	1		08/27/19 16:25
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:25
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:25
Toluene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:25
Xylenes (total)	15.3		3.00	1.00	ug/L	1		08/27/19 16:25
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		08/27/19 16:25
4-Bromofluorobenzene (surr)	100		85-114		%	1		08/27/19 16:25
Toluene-d8 (surr)	102		89-112		%	1		08/27/19 16:25

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 16:25
Container ID: 1194733003-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-19**

Client Sample ID: **MW-19**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733004
Lab Project ID: 1194733

Collection Date: 08/16/19 10:49
Received Date: 08/19/19 13:20
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	0.851		0.556	0.167	mg/L	1		08/27/19 19:21
Surrogates								
5a Androstane (surr)	70.2		50-150		%	1		08/27/19 19:21

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 19:21
Container ID: 1194733004-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Results of **MW-19**

Client Sample ID: **MW-19**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733004
Lab Project ID: 1194733

Collection Date: 08/16/19 10:49
Received Date: 08/19/19 13:20
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	17.4		2.00	0.620	mg/L	20		08/22/19 07:41
Surrogates								
4-Bromofluorobenzene (surr)	92.6		50-150		%	20		08/22/19 07:41

Batch Information

Analytical Batch: VFC14888
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/22/19 07:41
Container ID: 1194733004-E

Prep Batch: VXX34697
Prep Method: SW5030B
Prep Date/Time: 08/21/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-19**

Client Sample ID: **MW-19**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733004
Lab Project ID: 1194733

Collection Date: 08/16/19 10:49
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	98.4		1.00	0.310	ug/L	1		08/27/19 16:41
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/27/19 16:41
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/27/19 16:41
1,3,5-Trimethylbenzene	26.3		1.00	0.310	ug/L	1		08/27/19 16:41
Benzene	2340		8.00	2.40	ug/L	20		08/28/19 23:19
Ethylbenzene	1180		20.0	6.20	ug/L	20		08/28/19 23:19
Isopropylbenzene (Cumene)	27.5		1.00	0.310	ug/L	1		08/27/19 16:41
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/27/19 16:41
Naphthalene	2.32		1.00	0.310	ug/L	1		08/27/19 16:41
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:41
o-Xylene	1420		20.0	6.20	ug/L	20		08/28/19 23:19
P & M -Xylene	3850		40.0	12.4	ug/L	20		08/28/19 23:19
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:41
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:41
Toluene	3.99		1.00	0.310	ug/L	1		08/27/19 16:41
Xylenes (total)	5270		60.0	20.0	ug/L	20		08/28/19 23:19
Surrogates								
1,2-Dichloroethane-D4 (surr)	94.6		81-118		%	1		08/27/19 16:41
4-Bromofluorobenzene (surr)	97.5		85-114		%	1		08/27/19 16:41
Toluene-d8 (surr)	102		89-112		%	1		08/27/19 16:41

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 16:41
Container ID: 1194733004-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS19370
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/28/19 23:19
Container ID: 1194733004-B

Prep Batch: VXX34757
Prep Method: SW5030B
Prep Date/Time: 08/28/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-17R**

Client Sample ID: **MW-17R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733005
Lab Project ID: 1194733

Collection Date: 08/16/19 11:25
Received Date: 08/19/19 13:20
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	2.06		0.577	0.173	mg/L	1		08/27/19 19:31
Surrogates								
5a Androstane (surr)	72.3		50-150		%	1		08/27/19 19:31

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 19:31
Container ID: 1194733005-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

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

Results of **MW-17R**

Client Sample ID: **MW-17R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733005
Lab Project ID: 1194733

Collection Date: 08/16/19 11:25
Received Date: 08/19/19 13:20
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	0.0454	J	0.100	0.0310	mg/L	1		08/22/19 09:28
Surrogates								
4-Bromofluorobenzene (surr)	86.4		50-150		%	1		08/22/19 09:28

Batch Information

Analytical Batch: VFC14888
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/22/19 09:28
Container ID: 1194733005-E

Prep Batch: VXX34697
Prep Method: SW5030B
Prep Date/Time: 08/21/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-17R**

Client Sample ID: **MW-17R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733005
Lab Project ID: 1194733

Collection Date: 08/16/19 11:25
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.780	J	1.00	0.310	ug/L	1		08/28/19 23:04
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/27/19 16:56
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/27/19 16:56
1,3,5-Trimethylbenzene	0.590	J	1.00	0.310	ug/L	1		08/28/19 23:04
Benzene	2.68		0.400	0.120	ug/L	1		08/28/19 23:04
Ethylbenzene	1.33		1.00	0.310	ug/L	1		08/28/19 23:04
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		08/28/19 23:04
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/27/19 16:56
Naphthalene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:56
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:56
o-Xylene	5.25		1.00	0.310	ug/L	1		08/28/19 23:04
P & M -Xylene	4.47		2.00	0.620	ug/L	1		08/28/19 23:04
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:56
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 16:56
Toluene	1.46		1.00	0.310	ug/L	1		08/27/19 16:56
Xylenes (total)	9.72		3.00	1.00	ug/L	1		08/28/19 23:04
Surrogates								
1,2-Dichloroethane-D4 (surr)	106		81-118		%	1		08/27/19 16:56
4-Bromofluorobenzene (surr)	98		85-114		%	1		08/27/19 16:56
Toluene-d8 (surr)	100		89-112		%	1		08/27/19 16:56

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 16:56
Container ID: 1194733005-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS19370
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/28/19 23:04
Container ID: 1194733005-F

Prep Batch: VXX34757
Prep Method: SW5030B
Prep Date/Time: 08/28/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-15**

Client Sample ID: **MW-15**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733006
Lab Project ID: 1194733

Collection Date: 08/16/19 11:26
Received Date: 08/19/19 13:20
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	5.76		0.556	0.167	mg/L	1		08/27/19 19:40
Surrogates								
5a Androstane (surr)	73.2		50-150		%	1		08/27/19 19:40

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 19:40
Container ID: 1194733006-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Results of **MW-15**

Client Sample ID: **MW-15**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733006
Lab Project ID: 1194733

Collection Date: 08/16/19 11:26
Received Date: 08/19/19 13:20
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	0.287		0.100	0.0310	mg/L	1		08/21/19 00:10
Surrogates								
4-Bromofluorobenzene (surr)	84.4		50-150		%	1		08/21/19 00:10

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 00:10
Container ID: 1194733006-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-15**

Client Sample ID: **MW-15**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733006
Lab Project ID: 1194733

Collection Date: 08/16/19 11:26
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	10.5		1.00	0.310	ug/L	1		08/27/19 17:11
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/27/19 17:11
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/27/19 17:11
1,3,5-Trimethylbenzene	4.21		1.00	0.310	ug/L	1		08/27/19 17:11
Benzene	25.3		0.400	0.120	ug/L	1		08/27/19 17:11
Ethylbenzene	11.3		1.00	0.310	ug/L	1		08/27/19 17:11
Isopropylbenzene (Cumene)	1.87		1.00	0.310	ug/L	1		08/27/19 17:11
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/27/19 17:11
Naphthalene	3.30		1.00	0.310	ug/L	1		08/27/19 17:11
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:11
o-Xylene	28.4		1.00	0.310	ug/L	1		08/27/19 17:11
P & M -Xylene	44.1		2.00	0.620	ug/L	1		08/27/19 17:11
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:11
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:11
Toluene	34.6		1.00	0.310	ug/L	1		08/27/19 17:11
Xylenes (total)	72.4		3.00	1.00	ug/L	1		08/27/19 17:11
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		81-118		%	1		08/27/19 17:11
4-Bromofluorobenzene (surr)	100		85-114		%	1		08/27/19 17:11
Toluene-d8 (surr)	103		89-112		%	1		08/27/19 17:11

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 17:11
Container ID: 1194733006-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-16R**

Client Sample ID: **MW-16R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733007
Lab Project ID: 1194733

Collection Date: 08/16/19 12:12
Received Date: 08/19/19 13:20
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	0.359	J	0.577	0.173	mg/L	1		08/27/19 19:50
Surrogates								
5a Androstane (surr)	69.9		50-150		%	1		08/27/19 19:50

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 19:50
Container ID: 1194733007-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **MW-16R**

Client Sample ID: **MW-16R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733007
Lab Project ID: 1194733

Collection Date: 08/16/19 12:12
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/21/19 00:28
Surrogates								
4-Bromofluorobenzene (surr)	80.9		50-150		%	1		08/21/19 00:28

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 00:28
Container ID: 1194733007-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-16R**

Client Sample ID: **MW-16R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733007
Lab Project ID: 1194733

Collection Date: 08/16/19 12:12
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/27/19 17:26
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/27/19 17:26
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
Benzene	0.250	J	0.400	0.120	ug/L	1		08/27/19 17:26
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/27/19 17:26
Naphthalene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
o-Xylene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		08/27/19 17:26
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
Toluene	0.500	U	1.00	0.310	ug/L	1		08/27/19 17:26
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		08/27/19 17:26
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		08/27/19 17:26
4-Bromofluorobenzene (surr)	102		85-114		%	1		08/27/19 17:26
Toluene-d8 (surr)	102		89-112		%	1		08/27/19 17:26

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 17:26
Container ID: 1194733007-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-14R**

Client Sample ID: **MW-14R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733008
Lab Project ID: 1194733

Collection Date: 08/16/19 12:09
Received Date: 08/19/19 13:20
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	0.277	J	0.566	0.170	mg/L	1		08/27/19 20:00
Surrogates								
5a Androstane (surr)	68.6		50-150		%	1		08/27/19 20:00

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 20:00
Container ID: 1194733008-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-14R**

Client Sample ID: **MW-14R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733008
Lab Project ID: 1194733

Collection Date: 08/16/19 12:09
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/21/19 00:46
Surrogates								
4-Bromofluorobenzene (surr)	81.1		50-150		%	1		08/21/19 00:46

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 00:46
Container ID: 1194733008-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-14R**

Client Sample ID: **MW-14R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733008
Lab Project ID: 1194733

Collection Date: 08/16/19 12:09
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		08/27/19 17:42
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		08/27/19 17:42
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
Benzene	0.200 U		0.400	0.120	ug/L	1		08/27/19 17:42
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/27/19 17:42
Naphthalene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
o-Xylene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		08/27/19 17:42
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
Toluene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:42
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		08/27/19 17:42
Surrogates								
1,2-Dichloroethane-D4 (surr)	106		81-118		%	1		08/27/19 17:42
4-Bromofluorobenzene (surr)	99.8		85-114		%	1		08/27/19 17:42
Toluene-d8 (surr)	101		89-112		%	1		08/27/19 17:42

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 17:42
Container ID: 1194733008-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-13**

Client Sample ID: **MW-13**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733009
Lab Project ID: 1194733

Collection Date: 08/16/19 12:46
Received Date: 08/19/19 13:20
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	0.268	J	0.556	0.167	mg/L	1		08/27/19 20:09
Surrogates								
5a Androstane (surr)	69		50-150		%	1		08/27/19 20:09

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 20:09
Container ID: 1194733009-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Results of **MW-13**

Client Sample ID: **MW-13**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733009
Lab Project ID: 1194733

Collection Date: 08/16/19 12:46
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/21/19 01:03
Surrogates								
4-Bromofluorobenzene (surr)	78.2		50-150		%	1		08/21/19 01:03

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 01:03
Container ID: 1194733009-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-13**

Client Sample ID: **MW-13**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733009
Lab Project ID: 1194733

Collection Date: 08/16/19 12:46
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		08/27/19 17:57
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		08/27/19 17:57
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
Benzene	0.200 U		0.400	0.120	ug/L	1		08/27/19 17:57
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/27/19 17:57
Naphthalene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
o-Xylene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		08/27/19 17:57
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
Toluene	0.500 U		1.00	0.310	ug/L	1		08/27/19 17:57
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		08/27/19 17:57
Surrogates								
1,2-Dichloroethane-D4 (surr)	106		81-118		%	1		08/27/19 17:57
4-Bromofluorobenzene (surr)	98.8		85-114		%	1		08/27/19 17:57
Toluene-d8 (surr)	103		89-112		%	1		08/27/19 17:57

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 17:57
Container ID: 1194733009-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-12**

Client Sample ID: **MW-12**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733010
Lab Project ID: 1194733

Collection Date: 08/16/19 13:01
Received Date: 08/19/19 13:20
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	0.272	J	0.588	0.176	mg/L	1		08/27/19 20:19
Surrogates								
5a Androstane (surr)	72		50-150		%	1		08/27/19 20:19

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 20:19
Container ID: 1194733010-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

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

Results of **MW-12**

Client Sample ID: **MW-12**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733010
Lab Project ID: 1194733

Collection Date: 08/16/19 13:01
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/21/19 01:21
Surrogates								
4-Bromofluorobenzene (surr)	79.3		50-150		%	1		08/21/19 01:21

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 01:21
Container ID: 1194733010-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-12**

Client Sample ID: **MW-12**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733010
Lab Project ID: 1194733

Collection Date: 08/16/19 13:01
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/27/19 18:12
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/27/19 18:12
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
Benzene	0.200	U	0.400	0.120	ug/L	1		08/27/19 18:12
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/27/19 18:12
Naphthalene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
o-Xylene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		08/27/19 18:12
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
Toluene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:12
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		08/27/19 18:12
Surrogates								
1,2-Dichloroethane-D4 (surr)	107		81-118		%	1		08/27/19 18:12
4-Bromofluorobenzene (surr)	100		85-114		%	1		08/27/19 18:12
Toluene-d8 (surr)	102		89-112		%	1		08/27/19 18:12

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 18:12
Container ID: 1194733010-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-9**

Client Sample ID: **MW-9**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733011
Lab Project ID: 1194733

Collection Date: 08/16/19 14:01
Received Date: 08/19/19 13:20
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	1.38		0.577	0.173	mg/L	1		08/27/19 20:29
Surrogates								
5a Androstane (surr)	71.6		50-150		%	1		08/27/19 20:29

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 20:29
Container ID: 1194733011-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-9**

Client Sample ID: **MW-9**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733011
Lab Project ID: 1194733

Collection Date: 08/16/19 14:01
Received Date: 08/19/19 13:20
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	24.9		5.00	1.55	mg/L	50		08/22/19 07:05
Surrogates								
4-Bromofluorobenzene (surr)	89.2		50-150		%	50		08/22/19 07:05

Batch Information

Analytical Batch: VFC14888
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/22/19 07:05
Container ID: 1194733011-E

Prep Batch: VXX34697
Prep Method: SW5030B
Prep Date/Time: 08/21/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-9**

Client Sample ID: **MW-9**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733011
Lab Project ID: 1194733

Collection Date: 08/16/19 14:01
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	523		20.0	6.20	ug/L	20		08/28/19 23:33
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/27/19 18:28
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/27/19 18:28
1,3,5-Trimethylbenzene	183		1.00	0.310	ug/L	1		08/27/19 18:28
Benzene	1850		8.00	2.40	ug/L	20		08/28/19 23:33
Ethylbenzene	1700		20.0	6.20	ug/L	20		08/28/19 23:33
Isopropylbenzene (Cumene)	106		1.00	0.310	ug/L	1		08/27/19 18:28
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/27/19 18:28
Naphthalene	7.96		1.00	0.310	ug/L	1		08/27/19 18:28
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:28
o-Xylene	2580		20.0	6.20	ug/L	20		08/28/19 23:33
P & M -Xylene	5880		40.0	12.4	ug/L	20		08/28/19 23:33
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/27/19 18:28
tert-Butylbenzene	0.800	J	1.00	0.310	ug/L	1		08/27/19 18:28
Toluene	647		20.0	6.20	ug/L	20		08/28/19 23:33
Xylenes (total)	8460		60.0	20.0	ug/L	20		08/28/19 23:33
Surrogates								
1,2-Dichloroethane-D4 (surr)	92.5		81-118		%	1		08/27/19 18:28
4-Bromofluorobenzene (surr)	101		85-114		%	1		08/27/19 18:28
Toluene-d8 (surr)	104		89-112		%	1		08/27/19 18:28

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 18:28
Container ID: 1194733011-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS19370
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/28/19 23:33
Container ID: 1194733011-F

Prep Batch: VXX34757
Prep Method: SW5030B
Prep Date/Time: 08/28/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-8**

Client Sample ID: **MW-8**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733012
Lab Project ID: 1194733

Collection Date: 08/16/19 15:02
Received Date: 08/19/19 13:20
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	0.580		0.566	0.170	mg/L	1		08/27/19 20:39
Surrogates								
5a Androstane (surr)	79.4		50-150		%	1		08/27/19 20:39

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 08/27/19 20:39
Container ID: 1194733012-G

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 08/24/19 07:39
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Results of **MW-8**

Client Sample ID: **MW-8**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733012
Lab Project ID: 1194733

Collection Date: 08/16/19 15:02
Received Date: 08/19/19 13:20
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	4.05		0.500	0.155	mg/L	5		08/22/19 09:10
Surrogates								
4-Bromofluorobenzene (surr)	87.1		50-150		%	5		08/22/19 09:10

Batch Information

Analytical Batch: VFC14888
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/22/19 09:10
Container ID: 1194733012-E

Prep Batch: VXX34697
Prep Method: SW5030B
Prep Date/Time: 08/21/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-8**

Client Sample ID: **MW-8**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733012
Lab Project ID: 1194733

Collection Date: 08/16/19 15:02
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	3.81		1.00	0.310	ug/L	1		08/28/19 23:48
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		08/27/19 18:43
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		08/27/19 18:43
1,3,5-Trimethylbenzene	1.29		1.00	0.310	ug/L	1		08/28/19 23:48
Benzene	1080		4.00	1.20	ug/L	10		08/29/19 00:18
Ethylbenzene	21.8		1.00	0.310	ug/L	1		08/28/19 23:48
Isopropylbenzene (Cumene)	0.920 J		1.00	0.310	ug/L	1		08/28/19 23:48
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/27/19 18:43
Naphthalene	1.82		1.00	0.310	ug/L	1		08/28/19 23:48
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 18:43
o-Xylene	45.4		1.00	0.310	ug/L	1		08/28/19 23:48
P & M -Xylene	41.8		2.00	0.620	ug/L	1		08/28/19 23:48
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 18:43
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/27/19 18:43
Toluene	1150		10.0	3.10	ug/L	10		08/29/19 00:18
Xylenes (total)	87.2		3.00	1.00	ug/L	1		08/28/19 23:48
Surrogates								
1,2-Dichloroethane-D4 (surr)	92.5		81-118		%	1		08/27/19 18:43
4-Bromofluorobenzene (surr)	97.5		85-114		%	1		08/27/19 18:43
Toluene-d8 (surr)	103		89-112		%	1		08/27/19 18:43

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-8**

Client Sample ID: **MW-8**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733012
Lab Project ID: 1194733

Collection Date: 08/16/19 15:02
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Batch Information

Analytical Batch: VMS19370
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/29/19 00:18
Container ID: 1194733012-F

Prep Batch: VXX34757
Prep Method: SW5030B
Prep Date/Time: 08/28/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/27/19 18:43
Container ID: 1194733012-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS19370
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/28/19 23:48
Container ID: 1194733012-F

Prep Batch: VXX34757
Prep Method: SW5030B
Prep Date/Time: 08/28/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-4R**

Client Sample ID: **MW-4R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733013
Lab Project ID: 1194733

Collection Date: 08/16/19 14:56
Received Date: 08/19/19 13:20
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	0.220	J	0.556	0.167	mg/L	1		09/03/19 21:04
Surrogates								
5a Androstane (surr)	82.7		50-150		%	1		09/03/19 21:04

Batch Information

Analytical Batch: XFC15297
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 09/03/19 21:04
Container ID: 1194733013-G

Prep Batch: XXX42115
Prep Method: SW3520C
Prep Date/Time: 08/27/19 09:36
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Results of **MW-4R**

Client Sample ID: **MW-4R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733013
Lab Project ID: 1194733

Collection Date: 08/16/19 14:56
Received Date: 08/19/19 13:20
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	0.0314	J	0.100	0.0310	mg/L	1		08/21/19 02:15
Surrogates								
4-Bromofluorobenzene (surr)	77.1		50-150		%	1		08/21/19 02:15

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 02:15
Container ID: 1194733013-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-4R**

Client Sample ID: **MW-4R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733013
Lab Project ID: 1194733

Collection Date: 08/16/19 14:56
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/26/19 21:00
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/26/19 21:00
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
Benzene	0.200	U	0.400	0.120	ug/L	1		08/26/19 21:00
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/26/19 21:00
Naphthalene	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
o-Xylene	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		08/26/19 21:00
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
Toluene	0.500	U	1.00	0.310	ug/L	1		08/26/19 21:00
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		08/26/19 21:00
Surrogates								
1,2-Dichloroethane-D4 (surr)	81.5		81-118		%	1		08/26/19 21:00
4-Bromofluorobenzene (surr)	99.5		85-114		%	1		08/26/19 21:00
Toluene-d8 (surr)	104		89-112		%	1		08/26/19 21:00

Batch Information

Analytical Batch: VMS19358
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/26/19 21:00
Container ID: 1194733013-D

Prep Batch: VXX34744
Prep Method: SW5030B
Prep Date/Time: 08/26/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-2**

Client Sample ID: **MW-2**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733014
Lab Project ID: 1194733

Collection Date: 08/16/19 15:45
Received Date: 08/19/19 13:20
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	0.321	J	0.556	0.167	mg/L	1		09/03/19 21:14
Surrogates								
5a Androstane (surr)	88.7		50-150		%	1		09/03/19 21:14

Batch Information

Analytical Batch: XFC15297
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 09/03/19 21:14
Container ID: 1194733014-G

Prep Batch: XXX42115
Prep Method: SW3520C
Prep Date/Time: 08/27/19 09:36
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Results of **MW-2**

Client Sample ID: **MW-2**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733014
Lab Project ID: 1194733

Collection Date: 08/16/19 15:45
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/21/19 02:32
Surrogates								
4-Bromofluorobenzene (surr)	79.1		50-150		%	1		08/21/19 02:32

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 02:32
Container ID: 1194733014-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-2**

Client Sample ID: **MW-2**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733014
Lab Project ID: 1194733

Collection Date: 08/16/19 15:45
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		08/26/19 21:15
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		08/26/19 21:15
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
Benzene	0.200 U		0.400	0.120	ug/L	1		08/26/19 21:15
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/26/19 21:15
Naphthalene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
o-Xylene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		08/26/19 21:15
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
Toluene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:15
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		08/26/19 21:15
Surrogates								
1,2-Dichloroethane-D4 (surr)	82.2		81-118		%	1		08/26/19 21:15
4-Bromofluorobenzene (surr)	99.6		85-114		%	1		08/26/19 21:15
Toluene-d8 (surr)	105		89-112		%	1		08/26/19 21:15

Batch Information

Analytical Batch: VMS19358
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/26/19 21:15
Container ID: 1194733014-D

Prep Batch: VXX34744
Prep Method: SW5030B
Prep Date/Time: 08/26/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-20**

Client Sample ID: **MW-20**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733015
Lab Project ID: 1194733

Collection Date: 08/16/19 15:55
Received Date: 08/19/19 13:20
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	0.317	J	0.588	0.176	mg/L	1		09/03/19 21:25
Surrogates								
5a Androstane (surr)	80.5		50-150		%	1		09/03/19 21:25

Batch Information

Analytical Batch: XFC15297
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 09/03/19 21:25
Container ID: 1194733015-G

Prep Batch: XXX42115
Prep Method: SW3520C
Prep Date/Time: 08/27/19 09:36
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-20**

Client Sample ID: **MW-20**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733015
Lab Project ID: 1194733

Collection Date: 08/16/19 15:55
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/21/19 02:50
Surrogates								
4-Bromofluorobenzene (surr)	78.8		50-150		%	1		08/21/19 02:50

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 02:50
Container ID: 1194733015-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-20**

Client Sample ID: **MW-20**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733015
Lab Project ID: 1194733

Collection Date: 08/16/19 15:55
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:29
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		08/26/19 21:29
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		08/26/19 21:29
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:29
Benzene	2.54		0.400	0.120	ug/L	1		08/26/19 21:29
Ethylbenzene	0.460 J		1.00	0.310	ug/L	1		08/26/19 21:29
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:29
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/26/19 21:29
Naphthalene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:29
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:29
o-Xylene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:29
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		08/26/19 21:29
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:29
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:29
Toluene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:29
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		08/26/19 21:29
Surrogates								
1,2-Dichloroethane-D4 (surr)	82.9		81-118		%	1		08/26/19 21:29
4-Bromofluorobenzene (surr)	98.6		85-114		%	1		08/26/19 21:29
Toluene-d8 (surr)	106		89-112		%	1		08/26/19 21:29

Batch Information

Analytical Batch: VMS19358
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/26/19 21:29
Container ID: 1194733015-D

Prep Batch: VXX34744
Prep Method: SW5030B
Prep Date/Time: 08/26/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733016
Lab Project ID: 1194733

Collection Date: 08/16/19 16:30
Received Date: 08/19/19 13:20
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	0.487	J	0.566	0.170	mg/L	1		09/03/19 21:35
Surrogates								
5a Androstane (surr)	81.9		50-150		%	1		09/03/19 21:35

Batch Information

Analytical Batch: XFC15297
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 09/03/19 21:35
Container ID: 1194733016-G

Prep Batch: XXX42115
Prep Method: SW3520C
Prep Date/Time: 08/27/19 09:36
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733016
Lab Project ID: 1194733

Collection Date: 08/16/19 16:30
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/21/19 03:08
Surrogates								
4-Bromofluorobenzene (surr)	76.9		50-150		%	1		08/21/19 03:08

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 03:08
Container ID: 1194733016-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-3**

Client Sample ID: **MW-3**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733016
Lab Project ID: 1194733

Collection Date: 08/16/19 16:30
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		08/26/19 21:44
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		08/26/19 21:44
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
Benzene	0.200 U		0.400	0.120	ug/L	1		08/26/19 21:44
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/26/19 21:44
Naphthalene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
o-Xylene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		08/26/19 21:44
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
Toluene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:44
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		08/26/19 21:44
Surrogates								
1,2-Dichloroethane-D4 (surr)	82.6		81-118		%	1		08/26/19 21:44
4-Bromofluorobenzene (surr)	98.3		85-114		%	1		08/26/19 21:44
Toluene-d8 (surr)	105		89-112		%	1		08/26/19 21:44

Batch Information

Analytical Batch: VMS19358
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/26/19 21:44
Container ID: 1194733016-D

Prep Batch: VXX34744
Prep Method: SW5030B
Prep Date/Time: 08/26/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-7R**

Client Sample ID: **MW-7R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733017
Lab Project ID: 1194733

Collection Date: 08/16/19 16:46
Received Date: 08/19/19 13:20
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	0.252	J	0.556	0.167	mg/L	1		09/03/19 21:45
Surrogates								
5a Androstane (surr)	83.3		50-150		%	1		09/03/19 21:45

Batch Information

Analytical Batch: XFC15297
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 09/03/19 21:45
Container ID: 1194733017-G

Prep Batch: XXX42115
Prep Method: SW3520C
Prep Date/Time: 08/27/19 09:36
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Results of **MW-7R**

Client Sample ID: **MW-7R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733017
Lab Project ID: 1194733

Collection Date: 08/16/19 16:46
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/21/19 03:43
Surrogates								
4-Bromofluorobenzene (surr)	78		50-150		%	1		08/21/19 03:43

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 03:43
Container ID: 1194733017-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-7R**

Client Sample ID: **MW-7R**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733017
Lab Project ID: 1194733

Collection Date: 08/16/19 16:46
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		08/26/19 21:59
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		08/26/19 21:59
1,3,5-Trimethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
Benzene	0.200 U		0.400	0.120	ug/L	1		08/26/19 21:59
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/26/19 21:59
Naphthalene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
o-Xylene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		08/26/19 21:59
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
Toluene	0.500 U		1.00	0.310	ug/L	1		08/26/19 21:59
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		08/26/19 21:59
Surrogates								
1,2-Dichloroethane-D4 (surr)	82.5		81-118		%	1		08/26/19 21:59
4-Bromofluorobenzene (surr)	97.9		85-114		%	1		08/26/19 21:59
Toluene-d8 (surr)	105		89-112		%	1		08/26/19 21:59

Batch Information

Analytical Batch: VMS19358
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/26/19 21:59
Container ID: 1194733017-D

Prep Batch: VXX34744
Prep Method: SW5030B
Prep Date/Time: 08/26/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-98**

Client Sample ID: **MW-98**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733018
Lab Project ID: 1194733

Collection Date: 08/16/19 17:00
Received Date: 08/19/19 13:20
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	0.254	J	0.556	0.167	mg/L	1		09/03/19 21:55
Surrogates								
5a Androstane (surr)	79.9		50-150		%	1		09/03/19 21:55

Batch Information

Analytical Batch: XFC15297
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 09/03/19 21:55
Container ID: 1194733018-G

Prep Batch: XXX42115
Prep Method: SW3520C
Prep Date/Time: 08/27/19 09:36
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Results of **MW-98**

Client Sample ID: **MW-98**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733018
Lab Project ID: 1194733

Collection Date: 08/16/19 17:00
Received Date: 08/19/19 13:20
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	0.106		0.100	0.0310	mg/L	1		08/21/19 04:01
Surrogates								
4-Bromofluorobenzene (surr)	80.8		50-150		%	1		08/21/19 04:01

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/21/19 04:01
Container ID: 1194733018-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-98**

Client Sample ID: **MW-98**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733018
Lab Project ID: 1194733

Collection Date: 08/16/19 17:00
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	4.76		1.00	0.310	ug/L	1		08/26/19 22:14
1,2-Dibromoethane	0.0375 U		0.0750	0.0180	ug/L	1		08/26/19 22:14
1,2-Dichloroethane	0.250 U		0.500	0.150	ug/L	1		08/26/19 22:14
1,3,5-Trimethylbenzene	1.97		1.00	0.310	ug/L	1		08/26/19 22:14
Benzene	8.36		0.400	0.120	ug/L	1		08/26/19 22:14
Ethylbenzene	3.26		1.00	0.310	ug/L	1		08/26/19 22:14
Isopropylbenzene (Cumene)	0.880 J		1.00	0.310	ug/L	1		08/26/19 22:14
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/26/19 22:14
Naphthalene	0.500 U		1.00	0.310	ug/L	1		08/26/19 22:14
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 22:14
o-Xylene	0.500 U		1.00	0.310	ug/L	1		08/26/19 22:14
P & M -Xylene	3.24		2.00	0.620	ug/L	1		08/26/19 22:14
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 22:14
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 22:14
Toluene	0.590 J		1.00	0.310	ug/L	1		08/26/19 22:14
Xylenes (total)	3.24		3.00	1.00	ug/L	1		08/26/19 22:14
Surrogates								
1,2-Dichloroethane-D4 (surr)	82.8		81-118		%	1		08/26/19 22:14
4-Bromofluorobenzene (surr)	98.9		85-114		%	1		08/26/19 22:14
Toluene-d8 (surr)	106		89-112		%	1		08/26/19 22:14

Batch Information

Analytical Batch: VMS19358
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/26/19 22:14
Container ID: 1194733018-D

Prep Batch: VXX34744
Prep Method: SW5030B
Prep Date/Time: 08/26/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **MW-99**

Client Sample ID: **MW-99**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733019
Lab Project ID: 1194733

Collection Date: 08/16/19 17:30
Received Date: 08/19/19 13:20
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	1.35		0.600	0.180	mg/L	1		09/03/19 22:05
Surrogates								
5a Androstane (surr)	84.1		50-150		%	1		09/03/19 22:05

Batch Information

Analytical Batch: XFC15297
Analytical Method: AK102
Analyst: CMS
Analytical Date/Time: 09/03/19 22:05
Container ID: 1194733019-G

Prep Batch: XXX42115
Prep Method: SW3520C
Prep Date/Time: 08/27/19 09:36
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 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 **MW-99**

Client Sample ID: **MW-99**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733019
Lab Project ID: 1194733

Collection Date: 08/16/19 17:30
Received Date: 08/19/19 13:20
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	22.8		5.00	1.55	mg/L	50		08/22/19 07:23
Surrogates								
4-Bromofluorobenzene (surr)	93.1		50-150		%	50		08/22/19 07:23

Batch Information

Analytical Batch: VFC14888
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/22/19 07:23
Container ID: 1194733019-E

Prep Batch: VXX34697
Prep Method: SW5030B
Prep Date/Time: 08/21/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-99**

Client Sample ID: **MW-99**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733019
Lab Project ID: 1194733

Collection Date: 08/16/19 17:30
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	600		20.0	6.20	ug/L	20		08/28/19 00:03
1,2-Dibromoethane	0.750 U		1.50	0.360	ug/L	20		08/28/19 00:03
1,2-Dichloroethane	5.00 U		10.0	3.00	ug/L	20		08/28/19 00:03
1,3,5-Trimethylbenzene	180		1.00	0.310	ug/L	1		08/26/19 22:28
Benzene	1770		8.00	2.40	ug/L	20		08/28/19 00:03
Ethylbenzene	1700		20.0	6.20	ug/L	20		08/28/19 00:03
Isopropylbenzene (Cumene)	96.6		20.0	6.20	ug/L	20		08/28/19 00:03
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		08/26/19 22:28
Naphthalene	7.73		1.00	0.310	ug/L	1		08/26/19 22:28
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 22:28
o-Xylene	2620		20.0	6.20	ug/L	20		08/28/19 00:03
P & M -Xylene	5830		40.0	12.4	ug/L	20		08/28/19 00:03
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 22:28
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		08/26/19 22:28
Toluene	622		20.0	6.20	ug/L	20		08/28/19 00:03
Xylenes (total)	8450		60.0	20.0	ug/L	20		08/28/19 00:03
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.2		81-118		%	20		08/28/19 00:03
4-Bromofluorobenzene (surr)	102		85-114		%	1		08/26/19 22:28
Toluene-d8 (surr)	104		89-112		%	1		08/26/19 22:28

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/28/19 00:03
Container ID: 1194733019-D

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 08/27/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS19358
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/26/19 22:28
Container ID: 1194733019-D

Prep Batch: VXX34744
Prep Method: SW5030B
Prep Date/Time: 08/26/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **SW-1**

Client Sample ID: **SW-1**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733020
Lab Project ID: 1194733

Collection Date: 08/16/19 13:29
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Acenaphthene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Acenaphthylene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Anthracene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Benzo(a)Anthracene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Benzo[a]pyrene	0.00945	U	0.0189	0.00585	ug/L	1		08/22/19 23:07
Benzo[b]Fluoranthene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Benzo[g,h,i]perylene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Benzo[k]fluoranthene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Chrysene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Dibenzo[a,h]anthracene	0.00945	U	0.0189	0.00585	ug/L	1		08/22/19 23:07
Fluoranthene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Fluorene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Indeno[1,2,3-c,d] pyrene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Naphthalene	0.0471	U	0.0943	0.0292	ug/L	1		08/22/19 23:07
Phenanthrene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Pyrene	0.0236	U	0.0472	0.0142	ug/L	1		08/22/19 23:07
Surrogates								
2-Methylnaphthalene-d10 (surr)	65		47-106		%	1		08/22/19 23:07
Fluoranthene-d10 (surr)	57.2		24-116		%	1		08/22/19 23:07

Batch Information

Analytical Batch: XMS11655
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 08/22/19 23:07
Container ID: 1194733020-D

Prep Batch: XXX42052
Prep Method: SW3520C
Prep Date/Time: 08/20/19 08:55
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **SW-1**

Client Sample ID: **SW-1**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733020
Lab Project ID: 1194733

Collection Date: 08/16/19 13:29
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3.01		0.500	0.150	ug/L	1		08/23/19 06:57
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/23/19 06:57
o-Xylene	0.373	J	1.00	0.310	ug/L	1		08/23/19 06:57
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		08/23/19 06:57
Toluene	0.500	U	1.00	0.310	ug/L	1		08/23/19 06:57
Xylenes (total)	1.50	U	3.00	0.930	ug/L	1		08/23/19 06:57
Surrogates								
1,4-Difluorobenzene (surr)	97		77-115		%	1		08/23/19 06:57

Batch Information

Analytical Batch: VFC14891
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 06:57
Container ID: 1194733020-A

Prep Batch: VXX34705
Prep Method: SW5030B
Prep Date/Time: 08/22/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **SW-2**

Client Sample ID: **SW-2**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733021
Lab Project ID: 1194733

Collection Date: 08/16/19 13:37
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Acenaphthene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Acenaphthylene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Anthracene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Benzo(a)Anthracene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Benzo[a]pyrene	0.00960	U	0.0192	0.00596	ug/L	1		08/22/19 23:27
Benzo[b]Fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Benzo[g,h,i]perylene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Benzo[k]fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Chrysene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Dibenzo[a,h]anthracene	0.00960	U	0.0192	0.00596	ug/L	1		08/22/19 23:27
Fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Fluorene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Indeno[1,2,3-c,d] pyrene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Naphthalene	0.0481	U	0.0962	0.0298	ug/L	1		08/22/19 23:27
Phenanthrene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Pyrene	0.0240	U	0.0481	0.0144	ug/L	1		08/22/19 23:27
Surrogates								
2-Methylnaphthalene-d10 (surr)	59		47-106		%	1		08/22/19 23:27
Fluoranthene-d10 (surr)	53.3		24-116		%	1		08/22/19 23:27

Batch Information

Analytical Batch: XMS11655
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 08/22/19 23:27
Container ID: 1194733021-D

Prep Batch: XXX42052
Prep Method: SW3520C
Prep Date/Time: 08/20/19 08:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **SW-2**

Client Sample ID: **SW-2**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733021
Lab Project ID: 1194733

Collection Date: 08/16/19 13:37
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	1.77		0.500	0.150	ug/L	1		08/23/19 07:15
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		08/23/19 07:15
o-Xylene	0.500 U		1.00	0.310	ug/L	1		08/23/19 07:15
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		08/23/19 07:15
Toluene	0.500 U		1.00	0.310	ug/L	1		08/23/19 07:15
Xylenes (total)	1.50 U		3.00	0.930	ug/L	1		08/23/19 07:15
Surrogates								
1,4-Difluorobenzene (surr)	96.7		77-115		%	1		08/23/19 07:15

Batch Information

Analytical Batch: VFC14891
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 07:15
Container ID: 1194733021-A

Prep Batch: VXX34705
Prep Method: SW5030B
Prep Date/Time: 08/22/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **SW-3**

Client Sample ID: **SW-3**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733022
Lab Project ID: 1194733

Collection Date: 08/16/19 13:18
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Acenaphthene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Acenaphthylene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Anthracene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Benzo(a)Anthracene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Benzo[a]pyrene	0.00925 U		0.0185	0.00574	ug/L	1		08/22/19 23:48
Benzo[b]Fluoranthene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Benzo[g,h,i]perylene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Benzo[k]fluoranthene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Chrysene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Dibenzo[a,h]anthracene	0.00925 U		0.0185	0.00574	ug/L	1		08/22/19 23:48
Fluoranthene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Fluorene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Indeno[1,2,3-c,d] pyrene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Naphthalene	0.0463 U		0.0926	0.0287	ug/L	1		08/22/19 23:48
Phenanthrene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Pyrene	0.0232 U		0.0463	0.0139	ug/L	1		08/22/19 23:48
Surrogates								
2-Methylnaphthalene-d10 (surr)	73.9		47-106		%	1		08/22/19 23:48
Fluoranthene-d10 (surr)	67.5		24-116		%	1		08/22/19 23:48

Batch Information

Analytical Batch: XMS11655
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 08/22/19 23:48
Container ID: 1194733022-D

Prep Batch: XXX42052
Prep Method: SW3520C
Prep Date/Time: 08/20/19 08:55
Prep Initial Wt./Vol.: 270 mL
Prep Extract Vol: 1 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **SW-3**

Client Sample ID: **SW-3**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733022
Lab Project ID: 1194733

Collection Date: 08/16/19 13:18
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250	U	0.500	0.150	ug/L	1		08/23/19 07:33
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/23/19 07:33
o-Xylene	0.500	U	1.00	0.310	ug/L	1		08/23/19 07:33
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		08/23/19 07:33
Toluene	0.500	U	1.00	0.310	ug/L	1		08/23/19 07:33
Xylenes (total)	1.50	U	3.00	0.930	ug/L	1		08/23/19 07:33
Surrogates								
1,4-Difluorobenzene (surr)	96.3		77-115		%	1		08/23/19 07:33

Batch Information

Analytical Batch: VFC14891
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 07:33
Container ID: 1194733022-A

Prep Batch: VXX34705
Prep Method: SW5030B
Prep Date/Time: 08/22/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **SW-99**

Client Sample ID: **SW-99**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733023
Lab Project ID: 1194733

Collection Date: 08/16/19 15:30
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Acenaphthene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Acenaphthylene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Anthracene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Benzo(a)Anthracene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Benzo[a]pyrene	0.00960	U	0.0192	0.00596	ug/L	1		08/23/19 00:09
Benzo[b]Fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Benzo[g,h,i]perylene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Benzo[k]fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Chrysene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Dibenzo[a,h]anthracene	0.00960	U	0.0192	0.00596	ug/L	1		08/23/19 00:09
Fluoranthene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Fluorene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Indeno[1,2,3-c,d] pyrene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Naphthalene	0.0481	U	0.0962	0.0298	ug/L	1		08/23/19 00:09
Phenanthrene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Pyrene	0.0240	U	0.0481	0.0144	ug/L	1		08/23/19 00:09
Surrogates								
2-Methylnaphthalene-d10 (surr)	61.5		47-106		%	1		08/23/19 00:09
Fluoranthene-d10 (surr)	58.3		24-116		%	1		08/23/19 00:09

Batch Information

Analytical Batch: XMS11655
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 08/23/19 00:09
Container ID: 1194733023-D

Prep Batch: XXX42052
Prep Method: SW3520C
Prep Date/Time: 08/20/19 08:55
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **SW-99**

Client Sample ID: **SW-99**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733023
Lab Project ID: 1194733

Collection Date: 08/16/19 15:30
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	3.07		0.500	0.150	ug/L	1		08/23/19 07:50
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/23/19 07:50
o-Xylene	0.354	J	1.00	0.310	ug/L	1		08/23/19 07:50
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		08/23/19 07:50
Toluene	0.500	U	1.00	0.310	ug/L	1		08/23/19 07:50
Xylenes (total)	1.50	U	3.00	0.930	ug/L	1		08/23/19 07:50
Surrogates								
1,4-Difluorobenzene (surr)	97		77-115		%	1		08/23/19 07:50

Batch Information

Analytical Batch: VFC14891
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 07:50
Container ID: 1194733023-A

Prep Batch: VXX34705
Prep Method: SW5030B
Prep Date/Time: 08/22/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **FGTA TB-1**

Client Sample ID: **FGTA TB-1**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733024
Lab Project ID: 1194733

Collection Date: 08/02/19 00:00
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS- Petroleum VOC Group**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		08/26/19 16:16
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		08/26/19 16:16
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
Benzene	0.200	U	0.400	0.120	ug/L	1		08/26/19 16:16
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		08/26/19 16:16
Naphthalene	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
o-Xylene	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		08/26/19 16:16
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
Toluene	0.500	U	1.00	0.310	ug/L	1		08/26/19 16:16
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		08/26/19 16:16
Surrogates								
1,2-Dichloroethane-D4 (surr)	93.4		81-118		%	1		08/26/19 16:16
4-Bromofluorobenzene (surr)	95.6		85-114		%	1		08/26/19 16:16
Toluene-d8 (surr)	103		89-112		%	1		08/26/19 16:16

Batch Information

Analytical Batch: VMS19358
Analytical Method: SW8260C
Analyst: CMC
Analytical Date/Time: 08/26/19 16:16
Container ID: 1194733024-A

Prep Batch: VXX34744
Prep Method: SW5030B
Prep Date/Time: 08/26/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **FGTA TB-2**

Client Sample ID: **FGTA TB-2**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733025
Lab Project ID: 1194733

Collection Date: 08/02/19 00:00
Received Date: 08/19/19 13:20
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.250	U	0.500	0.150	ug/L	1		08/23/19 05:11
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		08/23/19 05:11
o-Xylene	0.500	U	1.00	0.310	ug/L	1		08/23/19 05:11
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		08/23/19 05:11
Toluene	0.500	U	1.00	0.310	ug/L	1		08/23/19 05:11
Xylenes (total)	1.50	U	3.00	0.930	ug/L	1		08/23/19 05:11
Surrogates								
1,4-Difluorobenzene (surr)	96.9		77-115		%	1		08/23/19 05:11

Batch Information

Analytical Batch: VFC14891
Analytical Method: SW8021B
Analyst: NRB
Analytical Date/Time: 08/23/19 05:11
Container ID: 1194733025-A

Prep Batch: VXX34705
Prep Method: SW5030B
Prep Date/Time: 08/22/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Results of **FGTA TB-3**

Client Sample ID: **FGTA TB-3**
Client Project ID: **105.01288.19008 PS01 Fmr GT**
Lab Sample ID: 1194733026
Lab Project ID: 1194733

Collection Date: 08/02/19 00:00
Received Date: 08/19/19 13:20
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	0.0500	U	0.100	0.0310	mg/L	1		08/20/19 22:24
Surrogates								
4-Bromofluorobenzene (surr)	79.1		50-150		%	1		08/20/19 22:24

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Analyst: NRB
Analytical Date/Time: 08/20/19 22:24
Container ID: 1194733026-A

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 08/20/19 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/05/2019 2:10:49PM

J flagging is activated

Method Blank

Blank ID: MB for HBN 1798241 [VXX/34686]
Blank Lab ID: 1526779

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733001, 1194733002, 1194733003, 1194733006, 1194733007, 1194733008, 1194733009, 1194733010, 1194733013, 1194733014, 1194733015, 1194733016, 1194733017, 1194733018, 1194733026

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
1,4-Difluorobenzene (surr)	94.6	77-115		%
4-Bromofluorobenzene (surr)	77.5	50-150		%

Batch Information

Analytical Batch: VFC14886
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: NRB
Analytical Date/Time: 8/20/2019 10:06:00PM

Prep Batch: VXX34686
Prep Method: SW5030B
Prep Date/Time: 8/20/2019 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [VXX34686]
Blank Spike Lab ID: 1526780
Date Analyzed: 08/20/2019 21:48

Spike Duplicate ID: LCSD for HBN 1194733 [VXX34686]
Spike Duplicate Lab ID: 1526781
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733001, 1194733002, 1194733003, 1194733006, 1194733007, 1194733008, 1194733009, 1194733010, 1194733013, 1194733014, 1194733015, 1194733016, 1194733017, 1194733018, 1194733026

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	1.07	107	1.00	1.01	101	(60-120)	6.50	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	84.3	84	0.0500	81.8	82	(50-150)	3.00	

Batch Information

Analytical Batch: **VFC14886**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **NRB**

Prep Batch: **VXX34686**
Prep Method: **SW5030B**
Prep Date/Time: **08/20/2019 06:00**
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 1798300 [VXX/34697]
Blank Lab ID: 1527038

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733004, 1194733005, 1194733011, 1194733012, 1194733019

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
1,4-Difluorobenzene (surr)	95	77-115		%
4-Bromofluorobenzene (surr)	85.7	50-150		%

Batch Information

Analytical Batch: VFC14888
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: NRB
Analytical Date/Time: 8/22/2019 6:48:00AM

Prep Batch: VXX34697
Prep Method: SW5030B
Prep Date/Time: 8/21/2019 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [VXX34697]
Blank Spike Lab ID: 1527039
Date Analyzed: 08/22/2019 06:30

Spike Duplicate ID: LCSD for HBN 1194733 [VXX34697]
Spike Duplicate Lab ID: 1527040
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733004, 1194733005, 1194733011, 1194733012, 1194733019

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	0.970	97	1.00	0.988	99	(60-120)	1.90	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	92.3	92	0.0500	91.9	92	(50-150)	0.36	

Batch Information

Analytical Batch: **VFC14888**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **NRB**

Prep Batch: **VXX34697**
Prep Method: **SW5030B**
Prep Date/Time: **08/21/2019 06:00**
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 1798379 [VXX/34705]
Blank Lab ID: 1527366

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733020, 1194733021, 1194733022, 1194733023, 1194733025

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
Xylenes (total)	1.50U	3.00	0.930	ug/L
Surrogates				
1,4-Difluorobenzene (surr)	97	77-115		%

Batch Information

Analytical Batch: VFC14891
Analytical Method: SW8021B
Instrument: Agilent 7890A PID/FID
Analyst: NRB
Analytical Date/Time: 8/23/2019 4:53:00AM

Prep Batch: VXX34705
Prep Method: SW5030B
Prep Date/Time: 8/22/2019 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [VXX34705]
Blank Spike Lab ID: 1527367
Date Analyzed: 08/23/2019 04:18

Spike Duplicate ID: LCSD for HBN 1194733 [VXX34705]
Spike Duplicate Lab ID: 1527368
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733020, 1194733021, 1194733022, 1194733023, 1194733025

Results by **SW8021B**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	100	105	105	100	103	103	(80-120)	2.00	(< 20)
Ethylbenzene	100	93.1	93	100	85.7	86	(75-125)	8.30	(< 20)
o-Xylene	100	92.5	93	100	82.6	83	(80-120)	11.20	(< 20)
P & M -Xylene	200	183	92	200	170	85	(75-130)	7.60	(< 20)
Toluene	100	97.9	98	100	91.4	91	(75-120)	6.90	(< 20)
Xylenes (total)	300	276	92	300	252	84	(79-121)	8.80	(< 20)
Surrogates									
1,4-Difluorobenzene (surr)	50	103	103	50	102	102	(77-115)	1.70	

Batch Information

Analytical Batch: **VFC14891**
Analytical Method: **SW8021B**
Instrument: **Agilent 7890A PID/FID**
Analyst: **NRB**

Prep Batch: **VXX34705**
Prep Method: **SW5030B**
Prep Date/Time: **08/22/2019 06:00**
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 1798560 [VXX/34744]
Blank Lab ID: 1528070

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733013, 1194733014, 1194733015, 1194733016, 1194733017, 1194733018, 1194733019, 1194733024

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	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
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	94	81-118		%
4-Bromofluorobenzene (surr)	94.4	85-114		%
Toluene-d8 (surr)	103	89-112		%

Batch Information

Analytical Batch: VMS19358
Analytical Method: SW8260C
Instrument: VPA 780/5975 GC/MS
Analyst: CMC
Analytical Date/Time: 8/26/2019 2:29:00PM

Prep Batch: VXX34744
Prep Method: SW5030B
Prep Date/Time: 8/26/2019 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [VXX34744]
Blank Spike Lab ID: 1528071
Date Analyzed: 08/26/2019 14:44

Spike Duplicate ID: LCSD for HBN 1194733 [VXX34744]
Spike Duplicate Lab ID: 1528072
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733013, 1194733014, 1194733015, 1194733016, 1194733017, 1194733018, 1194733019, 1194733024

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,2,4-Trimethylbenzene	30	29.8	99	30	29.3	98	(79-124)	1.90	(< 20)
1,2-Dibromoethane	30	32.2	107	30	32.0	107	(77-121)	0.72	(< 20)
1,2-Dichloroethane	30	27.5	92	30	27.4	91	(73-128)	0.36	(< 20)
1,3,5-Trimethylbenzene	30	29.3	98	30	29.4	98	(75-124)	0.10	(< 20)
Benzene	30	30.0	100	30	29.8	100	(79-120)	0.57	(< 20)
Ethylbenzene	30	30.8	103	30	30.1	100	(79-121)	2.20	(< 20)
Isopropylbenzene (Cumene)	30	32.2	107	30	31.9	106	(72-131)	1.10	(< 20)
Methyl-t-butyl ether	45	44.3	99	45	44.5	99	(71-124)	0.36	(< 20)
Naphthalene	30	28.9	96	30	30.4	101	(61-128)	5.00	(< 20)
n-Butylbenzene	30	30.0	100	30	29.6	99	(75-128)	1.40	(< 20)
o-Xylene	30	29.7	99	30	29.7	99	(78-122)	0.00	(< 20)
P & M -Xylene	60	62.1	103	60	62.5	104	(80-121)	0.72	(< 20)
sec-Butylbenzene	30	30.7	102	30	30.6	102	(77-126)	0.20	(< 20)
tert-Butylbenzene	30	30.1	100	30	31.1	104	(78-124)	3.10	(< 20)
Toluene	30	30.1	100	30	28.9	96	(80-121)	4.00	(< 20)
Xylenes (total)	90	91.8	102	90	92.2	102	(79-121)	0.49	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	88.3	88	30	88.6	89	(81-118)	0.38	
4-Bromofluorobenzene (surr)	30	93.5	94	30	95.2	95	(85-114)	1.90	
Toluene-d8 (surr)	30	103	103	30	101	101	(89-112)	2.10	

Batch Information

Analytical Batch: **VMS19358**
Analytical Method: **SW8260C**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **CMC**

Prep Batch: **VXX34744**
Prep Method: **SW5030B**
Prep Date/Time: **08/26/2019 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 09/05/2019 2:11:05PM

Method Blank

Blank ID: MB for HBN 1798617 [VXX/34750]
Blank Lab ID: 1528311

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733001, 1194733002, 1194733003, 1194733004, 1194733005, 1194733006, 1194733007, 1194733008, 1194733009, 1194733010, 1194733011, 1194733012, 1194733019

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	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
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	105	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	103	89-112		%

Batch Information

Analytical Batch: VMS19365
Analytical Method: SW8260C
Instrument: Agilent 7890-75MS
Analyst: CMC
Analytical Date/Time: 8/27/2019 1:10:00PM

Prep Batch: VXX34750
Prep Method: SW5030B
Prep Date/Time: 8/27/2019 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [VXX34750]
Blank Spike Lab ID: 1528312
Date Analyzed: 08/27/2019 13:25

Spike Duplicate ID: LCSD for HBN 1194733 [VXX34750]
Spike Duplicate Lab ID: 1528313
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733001, 1194733002, 1194733003, 1194733004, 1194733005, 1194733006, 1194733007, 1194733008, 1194733009, 1194733010, 1194733011, 1194733012, 1194733019

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,2,4-Trimethylbenzene	30	31.4	105	30	31.3	104	(79-124)	0.32	(< 20)
1,2-Dibromoethane	30	30.0	100	30	30.2	101	(77-121)	0.60	(< 20)
1,2-Dichloroethane	30	28.6	95	30	28.2	94	(73-128)	1.20	(< 20)
1,3,5-Trimethylbenzene	30	31.2	104	30	30.3	101	(75-124)	2.70	(< 20)
Benzene	30	28.1	94	30	27.6	92	(79-120)	1.60	(< 20)
Ethylbenzene	30	28.9	96	30	28.2	94	(79-121)	2.50	(< 20)
Isopropylbenzene (Cumene)	30	30.5	102	30	30.1	100	(72-131)	1.30	(< 20)
Methyl-t-butyl ether	45	42.0	93	45	42.7	95	(71-124)	1.80	(< 20)
Naphthalene	30	30.7	102	30	32.6	109	(61-128)	6.10	(< 20)
n-Butylbenzene	30	32.6	109	30	32.1	107	(75-128)	1.50	(< 20)
o-Xylene	30	28.1	94	30	28.0	93	(78-122)	0.61	(< 20)
P & M -Xylene	60	58.6	98	60	58.0	97	(80-121)	1.00	(< 20)
sec-Butylbenzene	30	31.7	106	30	31.5	105	(77-126)	0.57	(< 20)
tert-Butylbenzene	30	31.2	104	30	30.9	103	(78-124)	0.71	(< 20)
Toluene	30	27.6	92	30	27.4	91	(80-121)	0.73	(< 20)
Xylenes (total)	90	86.7	96	90	86.0	96	(79-121)	0.89	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	100	100	30	98.5	99	(81-118)	1.60	
4-Bromofluorobenzene (surr)	30	101	101	30	101	101	(85-114)	0.17	
Toluene-d8 (surr)	30	101	101	30	102	102	(89-112)	0.75	

Batch Information

Analytical Batch: **VMS19365**
Analytical Method: **SW8260C**
Instrument: **Agilent 7890-75MS**
Analyst: **CMC**

Prep Batch: **VXX34750**
Prep Method: **SW5030B**
Prep Date/Time: **08/27/2019 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1798682 [VXX/34757]
Blank Lab ID: 1528573

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733004, 1194733005, 1194733011, 1194733012

Results by **SW8260C**

Parameter	Results	LOQ/CL	DL	Units
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Naphthalene	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
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	83.9	81-118		%
4-Bromofluorobenzene (surr)	97.6	85-114		%
Toluene-d8 (surr)	104	89-112		%

Batch Information

Analytical Batch: VMS19370
Analytical Method: SW8260C
Instrument: VPA 780/5975 GC/MS
Analyst: CMC
Analytical Date/Time: 8/28/2019 3:33:00PM

Prep Batch: VXX34757
Prep Method: SW5030B
Prep Date/Time: 8/28/2019 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [VXX34757]
Blank Spike Lab ID: 1528574
Date Analyzed: 08/28/2019 15:48

Spike Duplicate ID: LCSD for HBN 1194733 [VXX34757]
Spike Duplicate Lab ID: 1528575
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733004, 1194733005, 1194733011, 1194733012

Results by **SW8260C**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,2,4-Trimethylbenzene	30	28.7	96	30	28.9	96	(79-124)	0.83	(< 20)
1,3,5-Trimethylbenzene	30	29.0	97	30	28.7	96	(75-124)	1.10	(< 20)
Benzene	30	31.0	103	30	30.5	102	(79-120)	1.70	(< 20)
Ethylbenzene	30	30.4	101	30	30.1	100	(79-121)	1.20	(< 20)
Isopropylbenzene (Cumene)	30	31.0	103	30	30.8	103	(72-131)	0.42	(< 20)
Naphthalene	30	31.4	105	30	33.7	112	(61-128)	7.00	(< 20)
o-Xylene	30	29.2	97	30	28.8	96	(78-122)	1.40	(< 20)
P & M -Xylene	60	61.4	102	60	60.6	101	(80-121)	1.20	(< 20)
Toluene	30	30.3	101	30	29.9	100	(80-121)	1.20	(< 20)
Xylenes (total)	90	90.6	101	90	89.4	99	(79-121)	1.30	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	81.6	82	30	81	81	(81-118)	0.70	
4-Bromofluorobenzene (surr)	30	95.6	96	30	97.2	97	(85-114)	1.60	
Toluene-d8 (surr)	30	105	105	30	104	104	(89-112)	0.48	

Batch Information

Analytical Batch: **VMS19370**
Analytical Method: **SW8260C**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **CMC**

Prep Batch: **VXX34757**
Prep Method: **SW5030B**
Prep Date/Time: **08/28/2019 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1798149 [XXX/42052]
Blank Lab ID: 1526350

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733020, 1194733021, 1194733022, 1194733023

Results by **8270D SIM LV (PAH)**

Parameter	Results	LOQ/CL	DL	Units
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	69.4	47-106		%
Fluoranthene-d10 (surr)	67.4	24-116		%

Batch Information

Analytical Batch: XMS11655
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 8/22/2019 9:03:00PM

Prep Batch: XXX42052
Prep Method: SW3520C
Prep Date/Time: 8/20/2019 8:55:19AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [XXX42052]
Blank Spike Lab ID: 1526351
Date Analyzed: 08/22/2019 21:24

Spike Duplicate ID: LCSD for HBN 1194733 [XXX42052]
Spike Duplicate Lab ID: 1526352
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733020, 1194733021, 1194733022, 1194733023

Results by **8270D SIM LV (PAH)**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Acenaphthene	2	1.64	82	2	1.54	77	(48-114)	6.50	(< 20)
Acenaphthylene	2	1.69	84	2	1.59	79	(35-121)	6.20	(< 20)
Anthracene	2	1.50	75	2	1.43	72	(53-119)	5.10	(< 20)
Benzo(a)Anthracene	2	1.53	76	2	1.43	72	(59-120)	6.20	(< 20)
Benzo[a]pyrene	2	1.51	76	2	1.41	70	(53-120)	7.30	(< 20)
Benzo[b]Fluoranthene	2	1.63	81	2	1.52	76	(53-126)	6.80	(< 20)
Benzo[g,h,i]perylene	2	1.50	75	2	1.36	68	(44-128)	9.90	(< 20)
Benzo[k]fluoranthene	2	1.60	80	2	1.50	75	(54-125)	6.70	(< 20)
Chrysene	2	1.59	79	2	1.49	75	(57-120)	6.20	(< 20)
Dibenzo[a,h]anthracene	2	1.50	75	2	1.32	66	(44-131)	12.80	(< 20)
Fluoranthene	2	1.67	84	2	1.60	80	(58-120)	4.40	(< 20)
Fluorene	2	1.62	81	2	1.54	77	(50-118)	5.50	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.61	81	2	1.46	73	(48-130)	10.10	(< 20)
Naphthalene	2	1.77	88	2	1.66	83	(43-114)	6.20	(< 20)
Phenanthrene	2	1.47	73	2	1.38	69	(53-115)	6.40	(< 20)
Pyrene	2	1.70	85	2	1.63	81	(53-121)	4.20	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2	73.5	74	2	72.7	73	(47-106)	1.10	
Fluoranthene-d10 (surr)	2	71.3	71	2	69.6	70	(24-116)	2.40	

Batch Information

Analytical Batch: **XMS11655**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **DSD**

Prep Batch: **XXX42052**
Prep Method: **SW3520C**
Prep Date/Time: **08/20/2019 08:55**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 09/05/2019 2:11:15PM

Method Blank

Blank ID: MB for HBN 1798284 [XXX/42077]
Blank Lab ID: 1526966

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733001, 1194733002

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.445J	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	71.2	60-120		%

Batch Information

Analytical Batch: XFC15276
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CMS
Analytical Date/Time: 8/26/2019 6:11:00PM

Prep Batch: XXX42077
Prep Method: SW3520C
Prep Date/Time: 8/23/2019 8:39:53AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [XXX42077]
Blank Spike Lab ID: 1526967
Date Analyzed: 08/26/2019 18:21

Spike Duplicate ID: LCSD for HBN 1194733 [XXX42077]
Spike Duplicate Lab ID: 1526968
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733001, 1194733002

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	19.2	96	20	19.1	95	(75-125)	0.68	(< 20)
Surrogates									
5a Androstane (surr)	0.4	84.6	85	0.4	86.4	86	(60-120)	2.10	

Batch Information

Analytical Batch: **XFC15276**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CMS**

Prep Batch: **XXX42077**
Prep Method: **SW3520C**
Prep Date/Time: **08/23/2019 08:39**
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 1798406 [XXX/42097]
Blank Lab ID: 1527482

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733003, 1194733004, 1194733005, 1194733006, 1194733007, 1194733008, 1194733009, 1194733010, 1194733011, 1194733012

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.231J	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	73.3	60-120		%

Batch Information

Analytical Batch: XFC15285
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CMS
Analytical Date/Time: 8/27/2019 6:42:00PM

Prep Batch: XXX42097
Prep Method: SW3520C
Prep Date/Time: 8/24/2019 7:39:21AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [XXX42097]
Blank Spike Lab ID: 1527483
Date Analyzed: 08/27/2019 18:52

Spike Duplicate ID: LCSD for HBN 1194733 [XXX42097]
Spike Duplicate Lab ID: 1527484
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733003, 1194733004, 1194733005, 1194733006, 1194733007, 1194733008, 1194733009, 1194733010, 1194733011, 1194733012

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	19.8	99	20	19.0	95	(75-125)	3.90	(< 20)
Surrogates									
5a Androstane (surr)	0.4	84.3	84	0.4	83.5	84	(60-120)	0.92	

Batch Information

Analytical Batch: **XFC15285**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CMS**

Prep Batch: **XXX42097**
Prep Method: **SW3520C**
Prep Date/Time: **08/24/2019 07:39**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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

Method Blank

Blank ID: MB for HBN 1798508 [XXX/42115]
Blank Lab ID: 1527923

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1194733013, 1194733014, 1194733015, 1194733016, 1194733017, 1194733018, 1194733019

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.238J	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	86.7	60-120		%

Batch Information

Analytical Batch: XFC15297
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: CMS
Analytical Date/Time: 9/3/2019 6:01:00PM

Prep Batch: XXX42115
Prep Method: SW3520C
Prep Date/Time: 8/27/2019 9:36:02AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1194733 [XXX42115]
Blank Spike Lab ID: 1527924
Date Analyzed: 09/03/2019 18:11

Spike Duplicate ID: LCSD for HBN 1194733 [XXX42115]
Spike Duplicate Lab ID: 1527925
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1194733013, 1194733014, 1194733015, 1194733016, 1194733017, 1194733018, 1194733019

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	20.9	105	20	21.9	109	(75-125)	4.50	(< 20)
Surrogates									
5a Androstane (surr)	0.4	96.7	97	0.4	104	104	(60-120)	7.60	

Batch Information

Analytical Batch: **XFC15297**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **CMS**

Prep Batch: **XXX42115**
Prep Method: **SW3520C**
Prep Date/Time: **08/27/2019 09:36**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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

1194733

1 of 2

CLIENT:	Alyeska Pipeline Service Company		
CONTACT:	Scott Rose Christophe Venot	PHONE NO:	(907) 222-1112
PROJECT NAME:	APSC PS01 Former Gasoline Tank Area	PROJECT/ PWSID/ PERMIT#:	105.01288.19008
REPORTS TO:	Scott Rose Janine Boyette	E-MAIL:	srose@slrconsulting.com janine.boyette@alyeska-pipeline.com
INVOICE TO:	APSC	QUOTE #: P.O. #:	

SLR INTERNATIONAL
2700 Gambell St, Suite 20
Anchorage, AK 99507

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	Preservative Used:	HCL	HCL	HCL		HCL	--					REMARKS/ LOC ID
						TYPE: C = COMP G = GRAB MI = Multi Incremental Soils	GRO (AK101)	DRO (AK102, low volume)	Petroleum VOCs (SW 8260 C)		BTEX (EPA 8021B)	PAHs (SW SIM 8270D; PAHs, EPA 610) 16					
1	MW-18	8/16/19	0956	W	8	G	X	X	X								
2	MW-22		0957		8		X	X	X								
3	MW-23		1044		8		X	X	X								MW-23 8/16/19 C.Venot
4	MW-19		1049		8		X	X	X								
5	MW-17R		1125		8		X	X	X								
6	MW-15		1126		8		X	X	X								
7	MW-16R		1212		8		X	X	X								
8	MW-14R		1209		8		X	X	X								
9	MW-13		1246		8		X	X	X								
10	MW-12		1301		8		X	X	X								
11	MW-9		1401		8		X	X	X								
12	MW-8	1502	~~1458~~		8		X	X	X								1502 8/16/19 C.Venot
13	MW-4R		1456		8		X	X	X								
14	MW-2		1545		8		X	X	X								
15	MW-20	▼	1555	▼	8	▼	X	X	X								

Collected/Relinquished By: (1) Christophe Venot	Date 8/16/19	Time 1000	Received By:
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 8.19.19	Time 13:20	Received For Laboratory By:

1,12021 1,7,2021

DOD Project? YES (NO)

Cooler ID:

Data Deliverable Requirements: Level II

Requested Turnaround Time and-or Special Instructions:
Standard Turnaround Profile #162313

Temp Blank °C: 1.0 DS8
or Ambient [ ]
(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)
IF HB INTACT BROKEN ABSENT
(See attached Sample Receipt Form)

1194733

CLIENT:	Alyeska Pipeline Service Company
CONTACT:	Scott Rose, Christophe Venot — PHONE NO: (907) 222-1112
PROJECT NAME:	APSC PS01 Former Gasoline Tank Area — PROJECT/ PWSID/ PERMIT#: 105.01288.19008
REPORTS TO:	Scott Rose, Janine Boyette — E-MAIL: srose@slrconsulting.com, janine.boyette@alyeska-pipeline.com
INVOICE TO:	APSC — QUOTE #: P.O. #:

SLR INTERNATIONAL
2700 Gambell St, Suite 2
Anchorage, AK 99507

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX/ MATRIX CODE	# CONTAINERS	Preservative Used: TYPE: C = COMP G = GRAB MI = Multi Incremental Soils	GRO (AK101) HCL	DRO (AK102, low volume) HCL	Petroleum VOCs (SW 8260 C) HCL		BTEX (EPA 8021B) HCL	PAHs (SW SIM 8270D; PAHs, EPA 610) -- 16					REMARKS/ LOC ID
16 AH	MW-3	8/16/19	1630	W	8	G	X	X	X								
17 AH	MW-7R		1646		8		X	X	X								
18 AH	MW-98		1700		8		X	X	X								
19 AH	MW-99		1730		8		X	X	X								
20 AE	SW-1		1329		5						X	X					
21 AE	SW-2		1337		5						X	X					
22 AE	SW-3		1318		5						X	X					
23 AE	SW-99	8/16/19	1530	5	8						X	X					C. Jarvis F 8/16/19
24 AC	FGTA TB-1	8/2/19	—		3	—			X								
25 AC	FGTA TB-2	8/2/19	—		3	—					X						
26 AC	FGTA TB-3	8/2/19	—		3	—	X										

Collected/Relinquished By: (1) Christophe Venot	Date 8/16/19	Time 1000	Received By:
Relinquished By: (2)	Date	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date 8-19-19	Time 13:20	Received For Laboratory By:

DOD Project? YES (NO)
Cooler ID:

Data Deliverable Requirements: Level II

Requested Turnaround Time and-or Special Instructions:
Standard Turnaround

Temp Blank °C: 1.0 DSR
or Ambient [ ]
(See attached Sample Receipt Form)

Chain of Custody Seal: (Circle)
INTACT BROKEN ABSENT
(See attached Sample Receipt Form)

Alert Expeditors Inc. **#397628**

Citywide Delivery • 440-3351
8421 Flamingo Drive • Anchorage, Alaska 99502

1194733

Date 6/17/11
From SLR
To SGS

Collect ☐	Prepay ☐ Account ☐	Advance Charges ☐
Job # 500	PO# AS 2673 4234	

Water / Soil
Samples

Shipped Signature EUT

Total Charge

Received By:

027 SCC 2673 4234 027-2673 4234

Shipper's Name and Address
SLR International Corp
2700 Gambell St Ste 200
Anchorage, AK 99503
USA
Tel: 907-563-2137

Shipper's Account Number
27442441434
Customer's ID Number
9817

Not Negotiable
Air Waybill
Issued By
Alaska AIR CARGO
P.O. BOX 68900 SEATTLE, WA 98168
800-225-2752 ALASKACARGO.COM

7015
1220

Consignee's Name and Address
SGS CT and ENVIRONM
200 W Potter Drive
Anchorage, AK 99518
USA
Tel: 907-562-2343

Consignee's Account Number
27400215947

Also notify
N
Tel:

Issuing Carrier's Agent and City

Agent's IATA Code

Account No.

Airport of Departure (Addr. of First Carrier) and Requested Routing
Prudhoe Bay/Deadhorse

Accounting Information
9817
SLR International Corp
2700 Gambell St Ste 200
Anchorage, AK 99503
USA

SRN/0128819008
GoldStreak

FA1 2827 0244

To	By First Carrier	To / By	To / By	Currency		WT/VAL		Other		Declared Value For Carriage	Declared Value For Customs
ANC	Alaska Airlines			USD	PX	X		X		NVD	NCV

Airport of Destination	Flight/Date	Flight/Date	Amount of Insurance
Anchorage	AS 7015/19		XXX

Handling Information
SUBJECT TO LOAD - NEED TO MOVE AS SOON AS POSSIBLE
PERISHABLE CARGO (NON - FOOD)

SCI

No of Pieces	Gross Weight	kg lb	Commodity Item No	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (Incl. Dimensions or Volume)
7	258.0	L	Q	258.0		AS AGREED	WATER & SOIL SAMPLES
							1194733
							Dims: 24 x 14 x13 x 6 13 x 9 x9 x 1
							PER GSX
7	258.0					AS AGREED	Volume: 0.000

Prepaid	Weight Charge	Collect	Other Charges
	AS AGREED		XBC 10.32
Valuation Charge			
Tax			
Total Other Charges Due Agent			
Total Other Charges Due Carrier			
Total Prepaid		Total Collect	
	AS AGREED		

Shipper certifies that the particulars on the face hereof are correct and that **insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations. I consent to the inspection of this cargo.**

For: SLR International Corp

Signature of Shipper or his Agent

[CW] THIS SHIPMENT DOES NOT CONTAIN DANGEROUS GOODS

[ ] THIS SHIPMENT DOES CONTAIN DANGEROUS GOODS

18 Aug 2019 11:51 — Executed On (Date)
Prudhoe Bay/Deadh — at (Place)
Alaska Airlines — Signature of Issuing Carrier or its Agent

027-2673 4234

e-Sample Receipt Form

SGS Workorder #: **1194733**

1 1 9 4 7 3 3

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		N/A — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	Yes	1F 1B
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?		
**Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 1.0 °C Therm. ID: D58
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	No	Container for 14R labeled mw-19 identifying per collection time.
		***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

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

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1194733001-A	HCL to pH < 2	OK			
1194733001-B	HCL to pH < 2	OK			
1194733001-C	HCL to pH < 2	OK			
1194733001-D	HCL to pH < 2	OK			
1194733001-E	HCL to pH < 2	OK			
1194733001-F	HCL to pH < 2	OK			
1194733001-G	HCL to pH < 2	OK			
1194733001-H	HCL to pH < 2	OK			
1194733002-A	HCL to pH < 2	OK			
1194733002-B	HCL to pH < 2	OK			
1194733002-C	HCL to pH < 2	OK			
1194733002-D	HCL to pH < 2	OK			
1194733002-E	HCL to pH < 2	OK			
1194733002-F	HCL to pH < 2	OK			
1194733002-G	HCL to pH < 2	OK			
1194733002-H	HCL to pH < 2	OK			
1194733003-A	HCL to pH < 2	OK			
1194733003-B	HCL to pH < 2	OK			
1194733003-C	HCL to pH < 2	OK			
1194733003-D	HCL to pH < 2	OK			
1194733003-E	HCL to pH < 2	OK			
1194733003-F	HCL to pH < 2	OK			
1194733003-G	HCL to pH < 2	OK			
1194733003-H	HCL to pH < 2	OK			
1194733004-A	HCL to pH < 2	OK			
1194733004-B	HCL to pH < 2	OK			
1194733004-C	HCL to pH < 2	OK			
1194733004-D	HCL to pH < 2	OK			
1194733004-E	HCL to pH < 2	OK			
1194733004-F	HCL to pH < 2	OK			
1194733004-G	HCL to pH < 2	OK			
1194733004-H	HCL to pH < 2	OK			
1194733005-A	HCL to pH < 2	OK			
1194733005-B	HCL to pH < 2	OK			
1194733005-C	HCL to pH < 2	OK			
1194733005-D	HCL to pH < 2	OK			
1194733005-E	HCL to pH < 2	OK			
1194733005-F	HCL to pH < 2	OK			
1194733005-G	HCL to pH < 2	OK			
1194733005-H	HCL to pH < 2	OK			
1194733006-A	HCL to pH < 2	OK			
1194733006-B	HCL to pH < 2	OK			
1194733006-C	HCL to pH < 2	OK			
1194733006-D	HCL to pH < 2	OK			
1194733006-E	HCL to pH < 2	OK			
1194733006-F	HCL to pH < 2	OK			
1194733006-G	HCL to pH < 2	OK			
1194733006-H	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1194733007-A	HCL to pH < 2	OK			
1194733007-B	HCL to pH < 2	OK			
1194733007-C	HCL to pH < 2	OK			
1194733007-D	HCL to pH < 2	OK			
1194733007-E	HCL to pH < 2	OK			
1194733007-F	HCL to pH < 2	OK			
1194733007-G	HCL to pH < 2	OK			
1194733007-H	HCL to pH < 2	OK			
1194733008-A	HCL to pH < 2	OK			
1194733008-B	HCL to pH < 2	OK			
1194733008-C	HCL to pH < 2	OK			
1194733008-D	HCL to pH < 2	OK			
1194733008-E	HCL to pH < 2	OK			
1194733008-F	HCL to pH < 2	OK			
1194733008-G	HCL to pH < 2	OK			
1194733008-H	HCL to pH < 2	OK			
1194733009-A	HCL to pH < 2	OK			
1194733009-B	HCL to pH < 2	OK			
1194733009-C	HCL to pH < 2	OK			
1194733009-D	HCL to pH < 2	OK			
1194733009-E	HCL to pH < 2	OK			
1194733009-F	HCL to pH < 2	OK			
1194733009-G	HCL to pH < 2	OK			
1194733009-H	HCL to pH < 2	OK			
1194733010-A	HCL to pH < 2	OK			
1194733010-B	HCL to pH < 2	OK			
1194733010-C	HCL to pH < 2	OK			
1194733010-D	HCL to pH < 2	OK			
1194733010-E	HCL to pH < 2	OK			
1194733010-F	HCL to pH < 2	OK			
1194733010-G	HCL to pH < 2	OK			
1194733010-H	HCL to pH < 2	OK			
1194733011-A	HCL to pH < 2	OK			
1194733011-B	HCL to pH < 2	OK			
1194733011-C	HCL to pH < 2	OK			
1194733011-D	HCL to pH < 2	OK			
1194733011-E	HCL to pH < 2	OK			
1194733011-F	HCL to pH < 2	OK			
1194733011-G	HCL to pH < 2	OK			
1194733011-H	HCL to pH < 2	OK			
1194733012-A	HCL to pH < 2	OK			
1194733012-B	HCL to pH < 2	OK			
1194733012-C	HCL to pH < 2	OK			
1194733012-D	HCL to pH < 2	OK			
1194733012-E	HCL to pH < 2	OK			
1194733012-F	HCL to pH < 2	OK			
1194733012-G	HCL to pH < 2	OK			
1194733012-H	HCL to pH < 2	OK			
1194733013-A	HCL to pH < 2	OK			
1194733013-B	HCL to pH < 2	OK			
1194733013-C	HCL to pH < 2	OK			
1194733013-D	HCL to pH < 2	OK			
1194733013-E	HCL to pH < 2	OK			
1194733013-F	HCL to pH < 2	OK			
1194733013-G	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1194733013-H	HCL to pH < 2	OK			
1194733014-A	HCL to pH < 2	OK			
1194733014-B	HCL to pH < 2	OK			
1194733014-C	HCL to pH < 2	OK			
1194733014-D	HCL to pH < 2	OK			
1194733014-E	HCL to pH < 2	OK			
1194733014-F	HCL to pH < 2	OK			
1194733014-G	HCL to pH < 2	OK			
1194733014-H	HCL to pH < 2	OK			
1194733015-A	HCL to pH < 2	OK			
1194733015-B	HCL to pH < 2	OK			
1194733015-C	HCL to pH < 2	OK			
1194733015-D	HCL to pH < 2	OK			
1194733015-E	HCL to pH < 2	OK			
1194733015-F	HCL to pH < 2	OK			
1194733015-G	HCL to pH < 2	OK			
1194733015-H	HCL to pH < 2	OK			
1194733016-A	HCL to pH < 2	OK			
1194733016-B	HCL to pH < 2	OK			
1194733016-C	HCL to pH < 2	OK			
1194733016-D	HCL to pH < 2	OK			
1194733016-E	HCL to pH < 2	OK			
1194733016-F	HCL to pH < 2	OK			
1194733016-G	HCL to pH < 2	OK			
1194733016-H	HCL to pH < 2	OK			
1194733017-A	HCL to pH < 2	OK			
1194733017-B	HCL to pH < 2	OK			
1194733017-C	HCL to pH < 2	OK			
1194733017-D	HCL to pH < 2	OK			
1194733017-E	HCL to pH < 2	OK			
1194733017-F	HCL to pH < 2	OK			
1194733017-G	HCL to pH < 2	OK			
1194733017-H	HCL to pH < 2	OK			
1194733018-A	HCL to pH < 2	OK			
1194733018-B	HCL to pH < 2	OK			
1194733018-C	HCL to pH < 2	OK			
1194733018-D	HCL to pH < 2	OK			
1194733018-E	HCL to pH < 2	OK			
1194733018-F	HCL to pH < 2	OK			
1194733018-G	HCL to pH < 2	OK			
1194733018-H	HCL to pH < 2	OK			
1194733019-A	HCL to pH < 2	OK			
1194733019-B	HCL to pH < 2	OK			
1194733019-C	HCL to pH < 2	OK			
1194733019-D	HCL to pH < 2	OK			
1194733019-E	HCL to pH < 2	OK			
1194733019-F	HCL to pH < 2	OK			
1194733019-G	HCL to pH < 2	OK			
1194733019-H	HCL to pH < 2	OK			
1194733020-A	HCL to pH < 2	OK			
1194733020-B	HCL to pH < 2	OK			
1194733020-C	HCL to pH < 2	OK			
1194733020-D	No Preservative Required	OK			
1194733020-E	No Preservative Required	OK			
1194733021-A	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1194733021-B	HCL to pH < 2	OK			
1194733021-C	HCL to pH < 2	OK			
1194733021-D	No Preservative Required	OK			
1194733021-E	No Preservative Required	OK			
1194733022-A	HCL to pH < 2	OK			
1194733022-B	HCL to pH < 2	OK			
1194733022-C	HCL to pH < 2	OK			
1194733022-D	No Preservative Required	OK			
1194733022-E	No Preservative Required	OK			
1194733023-A	HCL to pH < 2	OK			
1194733023-B	HCL to pH < 2	OK			
1194733023-C	HCL to pH < 2	OK			
1194733023-D	No Preservative Required	OK			
1194733023-E	No Preservative Required	OK			
1194733024-A	HCL to pH < 2	OK			
1194733024-B	HCL to pH < 2	OK			
1194733024-C	HCL to pH < 2	OK			
1194733025-A	HCL to pH < 2	OK			
1194733025-B	HCL to pH < 2	OK			
1194733025-C	HCL to pH < 2	OK			
1194733026-A	HCL to pH < 2	OK			
1194733026-B	HCL to pH < 2	OK			
1194733026-C	HCL to pH < 2	OK			

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.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
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.
QN - Insufficient sample quantity provided.

APPENDIX E

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

2019 Water Monitoring Report
Pump Station 1 Former Gasoline Tank Area

ALYESKA PIPELINE SERVICE COMPANY
PO Box 196660
3700 Centerpoint Drive
Anchorage, Alaska 99519-6660

December 2019

Appendix E - Historical Groundwater Analytical Results
Pump Station 1 Former Gasoline Tank Area
(All results in mg/L)

Monitoring Well	Sample Designation	Date Sampled	AK 101 Gasoline Range Organics	AK102 Diesel Range Organics	AK 103 Residual Range Organics	BTEX - USEPA Method 8021B/SW8260B Benzene	Toluene	Ethylbenzene	Total Xylenes
2009 ADEC Groundwater Cleanup Levels [A]			2.2	1.5	1.1	0.005	1.0	0.7	10.0
MW-1	MW-1	9/4/1994	0.22	23.9	--	0.001	0.017	0.002	0.013
	MW-1	8/23/1996	0.22	18	--	0.0013	0.0013	0.03	0.026
	MW-1	8/26/1997	ND	--	--	ND	0.0023	ND	0.0031
	MW-1	8/26/1998	0.051	7.61	--	ND	ND	ND	0.002
	MW-1	8/25/1999	ND	2.5	ND	ND	0.0015	ND	ND
	MW-1	8/23/2000	ND	4.25	0.753	ND	ND	ND	ND
	MW-1	8/7/2001	ND [0.0900]	1.9	1.11	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-1	8/17/2002	ND [0.0900]	1.72	1.14	ND [0.0005]	ND [0.002]	ND [0.002]	0.00203
	MW-1	9/6/2003	ND [0.0900]	1.23	0.533	ND [0.0005]	ND [0.002]	ND [0.002]	0.00203
	MW-1	8/26/2004	ND [0.0900]	1.42	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.003]
	MW-1	7/22/2005	ND [0.0900]	0.309	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-1	9/6/2006	ND [0.100]	0.910	--	ND [0.0004]	ND [0.001]	ND [0.001]	ND [0.002]
	N/A	9/6/2007, 7/30/2008							
	MW-1	7/29/2009	ND [0.1]	ND [0.784]	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-22	7/29/2009	ND [0.1]	0.258 J	--	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	Well decommissioned in 2009								
MW-5	MW-5	9/4/1994	0.054	0.2	--	0.0232	0.001	ND	ND
	MW-5	8/23/1996	0.19	0.78	--	0.048	0.0016	ND	ND
	N/A[B]	8/26/1997							
	MW-5	8/26/1998	ND	--	--	ND	ND	ND	ND
	MW-5	8/25/1999	ND	0.53	2.1	0.0032	ND	ND	ND
	MW-5	8/23/2000	ND	0.886	0.999	0.00499	ND	ND	ND
	MW-5	8/11/2001	ND [.0900]	1.89	ND [1.0]	0.00576	ND [0.002]	ND [0.002]	ND [0.002]
	Well decommissioned in 2003								
MW-6	MW-6	9/4/1994	ND	1.8	--	ND	ND	ND	ND
	MW-6	8/23/1996	ND	43	--	ND	ND	0.0048	0.003
	MW-6	8/26/1997	ND	--	--	ND	ND	ND	ND
	MW-6	8/26/1998	ND	7.59	--	ND	ND	ND	ND
	MW-6	8/25/1999	ND	1.9	0.46	ND	0.0045	ND	0.0025
	MW-6	8/23/2000	ND	1.53	0.84	ND	ND	ND	ND
	MW-6	8/7/2001	ND [0.0900]	0.871	ND [1.00]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	MW-6	8/17/2002	ND [0.0900]	0.754	ND [1.00]	0.000558	ND [0.002]	ND [0.002]	ND [0.002]
	MW-21[C]	8/17/2002	ND [0.0900]	0.749	ND [1.00]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	Sampling discontinued in 2003								
MW-10	MW-10	9/4/1994	340	7.7	--	80	73	6.6	46
	MW-13[C]	9/3/1994	290	8.1	--	69	65	5.6	40
	MW-10	8/23/1996	300	15	--	60	56	3.3	20
	MW-10	8/26/1997	300	--	--	44	80	5	35.5
	MW-13[C]	8/27/1997	280	--	--	36	61	4.5	34
	MW-10	8/26/1998	400	8.59	--	46	83	6.1	36
	MW-10	8/25/1999	290	18	ND	16	85	5.5	34
	MW-15[C]	8/26/1999	340	22	ND	16	87	5.7	37
	MW-10	8/23/2000	283	14	0.796	16.2	75.7	4.81	26.93
	MW-15[C]	8/23/2000	284	14.4	0.78	14.7	77.2	4.96	28.3
	MW-10	8/7/2001	249	15.1	ND [1.00]	13.4	82.6	5.81	33.5
	MW-10	8/17/2002	0.758	ND [0.575]	ND [1.15]	0.0245	0.145	0.00955	0.1274
	MW-10	9/6/2003	165	6.44	ND [0.500]	10.3	68.2	5.54	31.3
	FGTA-Dup-2[C]	9/6/2003	155	7.48	0.632	9.22	61.8	5.05	29.9
	MW-10	8/26/2004	193	11.7	--	2.24	65	4.91	29.4
	FGTA-Dup-2[C]	8/26/2004	213	10.9	--	2.24	65.3	5.29	31.8
	MW-10	7/22/2005	189	10.9	--	2.210	53.4	5.65	41.10
	MW-10	9/6/2006	165	13.4	ND	11.7	70.3	6.06	39.90
	FGTA-Dup-1[C]	9/6/2006	207	14.7	ND	1.9	63.1	6.17	44.40
	MW-10	9/6/2007	80.7	14	--	5.4	58.7	6.41	39.80
	MW-10	8/2/2008	75.5	6.4	--	0.626	16.5	2.56	20.31
	FGTA MW-10	9/2/2009	8.24	0.899	--	0.174	1.25	0.184	2.45
	N/A[B]	8/2/2010, 8/9/2011, 8/4/2012, 8/4/2013, 8/24/2014							
	Well not located in 2015, decommissioned in 2016.								
MW-11	MW-11	9/4/1994	ND	0.5	--	0.0042	ND	ND	ND
	MW-12[C]	9/4/1994	ND	0.6	--	0.0066	ND	ND	ND
	N/A[C]	8/25/1999	ND	1.7	0.59	0.01	ND	ND	ND
	N/A[B]	'8/23/2000, 8/7/2001							
	MW-11	8/17/2002	ND [0.0900]	ND [0.500]	ND [1.00]	ND [0.0005]	ND [0.002]	ND [0.002]	ND [0.002]
	Sampling discontinued in 2003								
MW-21	N/A[B]	7/30/2009, 8/2/2010, 8/6/2012, 8/4/2013, well decommissioned in 2014							

Notes:

1.5 Shaded results exceeded ADEC 2009 cleanup levels; see Note [A] below.

A Sample results prior to 2009 were compared 18 AAC 75, *Oil and Other Hazardous Substances Pollution Control Regulations,* as amended through October 9.

B Well could not be sampled due to construction, obstructions, or well damage.

C Duplicate of preceding sample.

ND [0.062] Bracketed values prior to 2009 are given as the limit of quantitation or practical quantitation limit.

Abbreviations

-- not analyzed
AAC Alaska Administrative Code
ADEC Alaska Department of Environmental Conservation
AK Alaska Method
N/A not applicable
ND not detected at or above the [Limit of Detection]
USEPA U.S. Environmental Protection Agency