2019-2022 Groundwater Monitoring Well Report Formerly Kobuk Feed & Fuel 2751 Picket Place Fairbanks, Alaska

ADEC File ID: 100.26.137

Prepared for:

Gary Lundgren

Prepared by:

Alaska Resources and Environmental Services, LLC.



August 2023

Prepared by:

the

Dustin Stahl Environmental Specialist

EXECUTIVE SUMMARY

This report was prepared on behalf of Castle Properties, Inc and Gary Lundgren, who has contracted with Alaska Resources & Environmental Services (ARES) to perform the groundwater investigation associated with the petroleum release (Alaska Department of Environmental Conservation (ADEC) file #100.26.137). The work was conducted as detailed in the approved Work Plan submitted in September 2008. Deviations from the workplan include the use of a bladder pump, and the analysis of groundwater collected from MW-3 and MW-2 for volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAH) by method EPA 8270DSIM analysis. Deviations from the workplan were instituted based on ADEC recommendations.

The objective of the sampling event was to obtain groundwater sample data near the site of a former petroleum release in order to determine if the documented groundwater contamination on the property is naturally attenuating and if it is migrating off-site.

Groundwater samples were collected from monitoring wells MW-1, MW-2, and MW-3 on September 23, 2019, July 22, 2020, September 24, 2021 and August 26, 2022 in general accordance with the version of following documents that was current at the time of sampling or reporting: ADEC Oil and Other Hazardous Substances Pollution Control Regulations (18 AAC 75 – amended July 2017-Feb 2023), ADEC Field Sampling Guidance August 2017-January 2022, and the approved ADEC Work Plan dated September 2008 with updates/revisions based on ADEC recommendations.

Analytical results from MW-1 groundwater samples were below ADEC cleanup levels for all tested analytes with the following exceptions:

<u>2020</u>

Kobuk-MW1-0720:

• Benzene: 6.7 ug/L (ADEC CUL= 4.6 ug/L)

<u>2021</u>

MW1-0921:

• Benzene: 10.6 ug/L (ADEC CUL= 4.6 ug/L)

2022

MW1-0822:

• Benzene: 15.3 ug/L (ADEC CUL= 4.6 ug/L)

Historically, MW-1 has been non-detect or below ADEC cleanup levels for all tested analytes until 2020. In 2020, there was a large increase in the concentrations of benzene that exceed ADEC CULs, and the concentration of benzene continued to increase through 2022. It should be noted that DRO was detected in the well in 2020 at a concentration below ADEC CULs (380 ug/L) and increased to 537 ug/L in 2021. The DRO result for MW-1 in 2022 was a low biased result of 349 ug/L. GRO (58.1 ug/L) was detected in MW-1 in 2021 and increased to a

concentration of 84.6 ug/L in 2022. The source of the increase in these analytes is unknown, but it is likely from an offsite/upgradient source.

Analytical results from MW-2 groundwater samples were below ADEC cleanup levels for all tested analytes with the following exceptions:

<u>2019</u>

Kobuk-MW2-919:

- Naphthalene by method 8270D SIM: 4.1 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 13 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 6.8 ug/L (ADEC CUL= 1.7 ug/L)

Kobuk-MW12-919:

- Naphthalene by method 8270D SIM: 3.7 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 14 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 8 ug/L (ADEC CUL= 1.7 ug/L)

<u>2020</u>

Kobuk-MW2-0720:

- DRO: 1800 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 3.6 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 90 ug/L (ADEC CUL= 4.6 ug/L)
- Ethylbenzene: 22 ug/L (ADEC CUL= 15 ug/L)
- Naphthalene by method 8260D: 7.2 ug/L (ADEC CUL= 1.7 ug/L)

Kobuk-MW12-0720:

- DRO: 1900 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 3.3 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 88 ug/L (ADEC CUL= 4.6 ug/L)
- Ethylbenzene: 22 ug/L (ADEC CUL= 15 ug/L)
- Naphthalene by method 8260D: 7.1 ug/L (ADEC CUL= 1.7 ug/L)

<u>2021</u>

MW2-0921:

- Naphthalene by method 8270D SIM: 2.57 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 31.9 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 6.36 ug/L (ADEC CUL= 1.7 ug/L)

MW12-0921:

- Naphthalene by method 8270D SIM: 2.4 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 31 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 5.84 ug/L (ADEC CUL= 1.7 ug/L)

<u>2022</u>

MW2-0822:

- DRO: 1870 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 3.49 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 26.2 ug/L (ADEC CUL= 4.6 ug/L)

MW12-0822:

- Naphthalene by method 8270D SIM: 3.2 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 30.2 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 4.3 ug/L (ADEC CUL= 1.7 ug/L)

DRO results have fluctuated over the four-year sampling period addressed in this report, but remained above ADEC cleanup levels in 2022. Naphthalene and Benzene concentrations were above ADEC cleanup levels during this period. Ethylbenzene concentrations were below in 2019 but increased to above ADEC cleanup levels in 2020. In 2021 and 2022, ethylbenzene was below ADEC cleanup levels.

Analytical results from MW-3 groundwater samples were below ADEC cleanup levels for all tested analytes with the following exceptions:

<u>2019</u>

Kobuk-MW3-919:

- DRO: 1900 ug/L (ADEC CUL= 1800 ug/L)
- 1-Methylnaphthalene: 16 ug/L (ADEC CUL: 11 ug/L)
- Naphthalene by method 8270D SIM: 14 ug/L (ADEC CUL= 1.7 ug/L)
- 1,3,4- Trimethylbenzene: 48 ug/L (15 ug/L)
- Naphthalene by method 8260C SIM: 35 ug/L (ADEC CUL= 1.7 ug/L)

<u>2022</u>

MW3-0822:

- DRO: 2570 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 2.08 ug/L (ADEC CUL= 1.7 ug/L)
- Naphthalene by method 8260C SIM: 4.2 ug/L (ADEC CUL= 1.7 ug/L)

Due to the presence of free product in the well analytical samples were not collected from MW-3 in 2020 or 2021. Up until 2019, MW-3 was only analyzed for BTEX, GRO and DRO. From 2019-2022, this monitoring well was sampled for GRO, DRO, PAH and VOCs. DRO has exceeded ADEC cleanup levels in all historic sampling events that samples were collected from the well. GRO has been below ADEC cleanup levels since 2015. 1-Methylnapthalene was above ADEC cleanup levels in 2019, however in 2022, this analyte was significantly below ADEC cleanup levels. Naphthalene was above ADEC clean up levels, however saw a significant decrease in concentration in 2022, but still exceeded ADEC cleanup levels. Benzene was above ADEC cleanup levels from 2008-2012. Benzene was below ADEC CULs from 2013-2022 and in 2022, the well was non-detect for the analyte. Ethylbenzene and xylenes been below ADEC CULs since 2018 and 2017 respectively.

Since MW-1 has seen an increase in benzene concentration above ADEC cleanup levels (and increases in DRO and GRO below ADEC CULs), has been historically non-detect for all analytes or detected below ADEC cleanup levels and this well is cross-gradient to the source area, it is likely that this contamination is migrating onsite from another upgradient source.

In general, all analytes sampled MW-2 have been decreasing in concentration with the exception of DRO and Benzene. These analytes saw an increase in concentration in 2020 and have fluctuated greatly historically.

In general, all analytes sampled in MW-3 have been decreasing in concentration with the exception of DRO. Prior to 20019, DRO was following a downward trend. From 2019 to 2022, there was an increase in concentration however, this well wasn't sampled in 2020 and 2021.

MW2 is located adjacent to the former site of two (2) 10,000-gallon gasoline UST's. MW3 is located adjacent to the former site of one (1) 10,000-gallon gasoline UST and one (1) 5,000-gallon diesel UST.

Field technicians have observed slow recovery in MW-3 on consecutive years. It is likely that the galvanized metal screen is rusting and slowing recovery. All the monitoring wells at the site are galvanized metal with a cut screen. This type of well is much more inexpensive to install as it can be jackhammered in place without the use of a drill rig, but this well type is not ideal for long-term monitoring due to screen deterioration over time. It is likely that MW-3 (and possibly MW2 and MW1) is approaching the end of its serviceable use. If additional wells are installed in the future, the value of replacing MW-3 should be evaluated.

ARES recommends the following:

- Schedule an additional annual groundwater sampling event during period of high seasonal groundwater conditions (August 2023). Groundwater collected from all wells should be analyzed for GRO by method AK101 and DRO by method AK 102. Due to new fuel related detections in the well, groundwater collected from MW1 should also be analyzed for VOCs by method EPA 8260D and PAH by method 8270DSIM. Groundwater collected from MW-2 and MW-3 should be analyzed for volatile organic compounds (VOCs) by method EPA 8260D, and polycyclic aromatic hydrocarbons (PAH) by method EPA 8270D SIM;
- Contaminants are likely migrating off-site. Additional down-gradient samples (soil/water) would need to be collected to determine the extent of the contaminant plume. ARES recommends additional soil borings and well points/groundwater monitoring wells be placed down-gradient to assess potential impacts. If additional wells are installed, ARES recommends replacement of MW-3. Monitoring wells installed on adjacent properties or right of way areas would require permission from the property owners and be installed in accordance with an ADEC approved workplan.

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Appendix D – Analytical Summary Tables

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Appendix D-4: 2022 Analytical Summary Table 1225201

Appendix E – Field Notes & Groundwater Sampling Field Data Sheets

Appendix F- Disposal Documents

ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
	Alaska Department of Environmental Conservation
AK	
	Alaska Resources and Environmental Services, LLC
bgs	Below Ground Surface
	Benzene, Toluene, Ethylbenzene and Xylenes
COC	Chain of Custody
CULs	Clean Up Levels
°C	
DO	Dissolved Oxygen
DRO	Diesel Range Organics
	Eternal Holdings Corporation Inc.
EPA	Environmental Protection Agency
°F	Degrees Fahrenheit
ft²	
GFAHFH	Greater Fairbanks Area Habitat for Humanity
GRO	Gasoline Range Organics
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LLC	Limited Liability Company
LOQ	Limit of Quantitation
MS/MSD	Matrix Spike/Matrix Spike Duplicate
mv	
ND	Non-Detect
	Poly Aromatic Hydrocarbons
ppm	Parts Per Million
	Practical Quantitation Limit
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percent Difference
ТВ	-
	Micrograms Per Liter
USGS	United States Geological Survey

1.0 INTRODUCTION

This report was prepared on behalf of Castle Properties, Inc and Gary Lundgren, who has contracted with Alaska Resources & Environmental Services (ARES) to perform the groundwater investigation associated with the petroleum release (Alaska Department of Environmental Conservation (ADEC) file #100.26.137). The work was conducted as detailed in the approved Work Plan submitted in September 2008. Deviations from the workplan include the use of a bladder pump, and the analysis of groundwater collected from MW-3 and MW-2 for volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons (PAH) by method EPA 8270DSIM analysis. Deviations from the workplan were instituted based on ADEC recommendations.

1.1 Objectives and Scope of Work

The objective of the sampling event was to obtain groundwater sample data near the site of a former petroleum release in order to determine if the documented groundwater contamination on the property is naturally attenuating and if it is migrating off-site. Groundwater samples were collected from monitoring wells MW-1, MW-2, and MW-3 on September 23, 2019, July 22, 2020, September 24, 2021 and August 26, 2022 in general accordance with the version of following documents that was current at the time of sampling or reporting: ADEC Oil and Other Hazardous Substances Pollution Control Regulations (18 AAC 75 – amended July 2017-Feb 2023), ADEC Field Sampling Guidance August 2017-January 2022, and the approved ADEC Work Plan dated September 2008 with updates/revisions based on ADEC recommendations.

1.2 Project Organization / Personnel

Castle Properties, Inc. is the current owner of the property. Ms. Cheryl Bagstad, on behalf of Mr. Gary Lundgren, is the contact for Castle Properties, Inc. The mailing address for Castle Properties, Inc is 18333 Bothell Way NE, #115 Bothell, WA 98011. The telephone number for Ms. Cheryl Bagstad is (425)-949-8921.

Eurofins Seattle performed laboratory analysis for VOC's, GRO, DRO and PAH in groundwater. Test America Seattle is approved by ADEC to provide testing of groundwater for hazardous substances and petroleum related contaminants. The mailing address for Eurofins Seattle is 5755 8th Street East, WA 98424. The telephone number for Eurofins Seattle is (253) 922-2310.

Eurofins Spokane performed laboratory analysis for DRO and PAH in groundwater. Eurofins Spokane is approved by ADEC to provide testing of groundwater for hazardous substances and petroleum related contaminants. The mailing address for Eurofins Spokane is 11922 East 1st Ave Spokane, WA 99206. The telephone number for Eurofins Spokane is (509) 924-9200.

SGS North America Inc. performed laboratory analysis for GRO, DRO, PAH, VOCs and BTEX. SGS North America Inc is approved by ADEC to provide testing of groundwater

for hazardous substances and petroleum related contaminants. The mailing address for SGS North America is 200 W. Potter Drive, Anchorage, AK 99518. Their telephone number is (907) 562-2343.

The groundwater monitoring work described in this report was conducted by Alaska Resources & Environmental Services on September 23, 2019, July 22, 2020, September 24, 2021, and August 26, 2022, by Joshua Klynsta, Environmental Technician for ARES. Mr. Klynstra meets the qualifications of 'Qualified Environmental Professional' by the ADEC under 18 AAC 75. Mr. Dustin Stahl is the point of contact for this project and may be contacted at Alaska Resources & Environmental Services LLC P.O. Box 83050 Fairbanks, Alaska 99708. The telephone number for Mr. Stahl is (907) 374-3226.

1.3 Regulatory Framework

A regulatory framework for the groundwater monitoring activities has been developed and followed with the consideration of the following regulations and guidance:

- 18 AAC 75 <u>Oil and Other Hazardous Substances Pollution Control</u> as amended through Feb 2023;
- ADEC soil cleanup levels in accordance with 18 AAC 75.341 Table B1 and B2 Method Two 'under 40" zone' most stringent level listed; revised Feb 2023; and
- <u>ADEC Field Sampling Guidance</u> amended August 2017-January 2022 (version that was current at the time of the sampling event)

2.0 SITE BACKGROUND

2.1 Site Description

The property located at 2751 Picket Place is an industrial lot of approximately 109,335 square feet in size. The lot contains a gravel parking lot with no structures. The legal description for the site is: Tax Lot 1740 Section 17 Township 1 South Range 1 West. The elevation of the site is 439' above mean sea level.

2.2 History

The subject property was formerly a commercial agricultural feed and fuel supply facility referenced as Kobuk Feed and Fuel. It was owned and operated by Ken Ulz, who declared bankruptcy in 1993. A Phase I Site Assessment was reportedly conducted in 1993 by a prospective purchaser and a UST system was identified with fuel reportedly still in the tanks. There had been numerous surface spills and/or releases of fuel product reported at the site with an estimated 620 cubic yards of soil possibly impacted. There was no investigation of subsurface soils associated with potential leaks from the tanks and subsurface piping.

The property was transferred to the Alaska Department of Natural Resources (ADNR) as a result of a failure to fulfill the requirements of an Agriculture Revolving Loan Fund agreement. ADNR then offered the property for sale in 1996 "as is, where is" by sealed competitive bid. The successful bidder was Global Finance and Investment Co. Current tax records indicate it is now owned by Castle Residence Inns, Inc.

During excavation and removal of the four USTs in May 2007, petroleum-contaminated soils were encountered of which approximately 2,190 cubic yards of contaminated soils were removed and stockpiled on-site for remediation by land farming in accordance with the ADEC approved Work Plan. As confirmed by laboratory results, soil levels for GRO, DRO, and BTEX constituents were generally below ADEC target cleanup levels between the surface and 8' bgs on the sidewalls and end walls for both excavation pits following excavation and removal of contaminated soils. The lateral extent of contamination to the west however could not be determined. Laboratory results indicate petroleum-contaminated soils still remain along the west wall of the excavation. Excavation was forced to cease along the west wall once the property boundary limits were reached on the subject property.

The horizontal extent of contamination for the subject property was undetermined. Soils were excavated to a maximum depth of approximately 10' bgs. The seasonal high groundwater table for the surrounding area is generally 8' bgs. Sample results indicate that petroleum contaminated soils above ADEC target cleanup levels still exist within the vadose zone >8' below ground surface.

Information regarding field activities and initial Release Investigation is included in the ARES report titled *Phase II Environmental Site Assessment/ Release Investigation, Kobuk Feed and Fuel (Former) Property, July 2007.* Information regarding installation of permanent groundwater monitoring is included in the ARES report titled *Groundwater Monitoring Well Report, Kobuk Feed and Fuel Property, November 2008.*

Additional groundwater monitoring events were conducted by Alaska Resources and Environmental Services annually since 2008. A summary of recent and historical groundwater sampling data is included in Appendix D of this report. Graphical trend analysis is included in Appendix B.

2.3 Topography

The United States Geological Survey (USGS) Fairbanks Quadrangle (D-2) SW provides topographic map coverage of the site (Figure 1). Fairbanks is located in the northern part of the Tanana Basin, which is a relatively flat floodplain of the Tanana River. The subject property is situated approximately 2.5 miles north of the Tanana River and 1.5 miles south of the Chena River. Based upon the topographic map of the Fairbanks Quadrangle, the site elevation is approximately 439 feet above the mean sea level.

2.4 Regional Hydrology

The Tanana River is the dominant influence on ground-water flow in the subject area. Two discharge peaks characterize the Tanana River: spring snowmelt runoff and late summer precipitation. The stage of nearby water bodies such as Chena Slough and Chena River typically rises and falls in response to stage changes of the Tanana River. The depth to groundwater varies in response to these controlling factors. Based on interpretation of USGS data, regional groundwater flow direction is generally to the northwest. However, the direction of flow can vary depending upon the stage of the

Tanana River. The seasonal high groundwater table for the surrounding area is generally 8' bgs.

2.5 Site Hydrology

The groundwater table at the time of sampling was approximately 9.7-10.7' below ground surface. Depth to water (DTW) measurements on the Groundwater Monitoring Data Sheets include 3' of stickup casing height. The presumed groundwater flow direction is to the northwest which is consistent with other data obtained in the area.

3.0 GROUNDWATER SAMPLING

3.1 Scope of Work

To achieve the stated objectives, ARES performed the following tasks:

- Collected groundwater elevations and water quality parameter measurements to include temperature, pH, conductivity, oxidation reduction potential, and dissolved oxygen;
- Collection of groundwater samples and a duplicate sample. All samples were analyzed for gasoline range organics (GRO) by method AK 101, and diesel range organics (DRO) by method AK 102. Groundwater collected from MW1 was analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by method EPA 8260C. Groundwater collected from MW-2 and MW-3 was analyzed for volatile organic compounds (VOCs) by method EPA 8260C/8260CSIM, and polycyclic aromatic hydrocarbons (PAH) by method EPA 8270DSIM; and
- Data review and report preparation.

3.2 Groundwater Sampling Procedures

A peristaltic pump with new disposable polyethylene tubing, and new nitrile gloves were used during the 2019-2022 sampling event to purge the well while it stabilized and to collect groundwater for DRO and PAH analysis. A bladder pump with disposable polyethylene bladders was used to collect samples for BTEX and VOC analysis.

Groundwater was purged and sampled using low-flow techniques. For low-flow sampling, the goal is minimum drawdown (<0.3 feet) during purging. A flow rate of 0.15-0.4 L/minute was measured and maintained throughout the purging process. Water quality parameters were obtained using a flow-through-cell and a YSI Model 556 multi-parameter water meter. Additionally, water quality parameters were measured and recorded on dedicated water parameter sheets while purging each monitoring well.

Water parameters were monitored and recorded every three to five minutes until purging was completed. Purging continued until water parameter measurements indicated that the well had stabilized.

The following water quality parameters are considered stable when three successive readings, collected 3-5 minutes apart, are within:

- \pm 3% for temperature (minimum of \pm 0.2°C);
- · ± 0.1 for pH;
- \pm 3% for conductivity;
- $\cdot \pm 10$ mv for redox potential; and
- $\cdot \pm 10\%$ for dissolved oxygen (DO).

Once the groundwater parameters stabilized, samples were collected in order of decreasing volatility. Note: MW-3 did not recover quickly enough to maintain the low flow sampling rate during multiple sampling events. For each of these events an attempt was made to collect groundwater from the well once it had recovered sufficiently, however the samples were collected without groundwater parameters stabilizing.

Groundwater was collected directly from the pump tubing and was placed directly into lab supplied sample bottles. Volatile samples were collected with care to avoid any headspace in the bottle. All bottles were labeled and placed in a pre-chilled cooler (at approximately 4°C) and submitted to an ADEC approved laboratory (Eurofins Seattle and SGS North America Inc.) following chain of custody (COC) procedures.

Purge water was placed into individually labeled 5-gallon buckets with lids and stored offsite in ARES warm storage until analytical results were received. Once the analytical results were received, all purge water that was below ADEC cleanup level was discharged onto the ground surface. Purge water exceeding ADEC cleanup levels was stored in ARES warm storage until enough water accumulated to make disposal economically practical. Purge water was combined with water from other events and sent to NRC Fairbanks facility for disposal. Disposal documentation is included in Appendix F.

Groundwater samples were collected from MW-1, MW-2 and MW-3 on September 23, 2019. A blind field duplicate sample was collected from monitoring well MW-2 for quality assurance/quality control purposes.

Groundwater samples were collected from MW-1 and MW-2 on July 22, 2020. A blind field duplicate sample was collected from monitoring well MW-2 for quality assurance/quality control purposes. Analytical samples were not collected from MW-3 due to floating product in the well (0.01 feet/0.25 gallons recovered).

Groundwater samples were collected from MW-1 and MW-2 on September 24, 2021. A blind field duplicate sample was collected from monitoring well MW-2 for quality assurance/quality control purposes. Analytical samples were not collected from MW-3 due to floating product in the well (0.01 feet/no recovery attempted)

Groundwater samples were collected from MW-1, MW-2 and MW-3 on August 26, 2022. A blind field duplicate sample was collected from monitoring well MW-2 for quality assurance/quality control purposes.

3.3 Field Observations

In the 2019 sampling event, the purge water from MW-1 was clear in appearance and did not have a sheen or odor. It is noted that this well had silt accumulating at the bottom of the well. MW-2 was clear in color and did not have a sheen or odor. MW-3 was clear in color and did not exhibit a sheen but did have a fuel odor. It was noted in the sampling form, that the well did not recharge adequately even after agitating with surge block.

In the 2020 sampling event, the purge water from MW-1 and MW-2 was clear in appearance, did not have a sheen, but did contain a slight fuel odor. MW-3 was not sampled due to floating product in the well (0.01 feet)

In the 2021 sampling event, the purge water from MW-1 and MW-2 was clear in appearance, did not have a sheen or an odor. MW-3 was not sampled due to floating product in the well (0.01 feet).

In the 2022 sampling event, the purge water from MW-1 was clear in color but contained a sheen and fuel odor. MW-2 was clear and didn't have a sheen but did contain a fuel odor. MW-3 drew down before the first parameter reading was received even at a minimum flow. The monitoring well was sampled regardless and was clear in color, contained a sheen and a strong fuel odor.

Groundwater measurements taken during the 2019 sampling event indicate that the water table was approximately 8.5-10.5' below ground surface at the time of sampling.

Groundwater measurements taken during the 2020 sampling event indicate that the water table was approximately 7.35'-8.59' below ground surface at the time of sampling.

Groundwater measurements taken during the 2021 sampling event indicate that the water table was approximately 8.90'-10.47' below ground surface at the time of sampling. Groundwater measurements taken during the 2022 sampling event indicate that the water table was approximately 8.25'-9.9' below ground surface at the time of sampling.

3.4 Analytical Results

During the 2019 sampling event, all three monitoring wells were sampled for DRO by method AK102 and GRO by method AK101. Monitoring well MW-1 was also sampled for benzene, ethylbenzene, m-xylene, p-xylene, o-xylene and Toluene (BTEX) by method 8260C. Monitoring well MW-2 (including the blind field duplicate sample) and MW-3 were both also sampled for PAH by method EPA 8270D SIM and VOCs by method 8260C and low-level VOCs by method 8260C SIM. A summary table of all analytical results is included in Appendix D. Complete laboratory results are included in Appendix C.

During the 2020 sampling event, all three monitoring wells were sampled for DRO by method AK102 and GRO by method AK101. Monitoring well MW-1 was also sampled for BTEX by method 8260D. Monitoring well MW-2 (including the blind field duplicate sample) was also sampled for PAH by method EPA 8270E SIM and VOCs by method 8260D. A summary table of all analytical results is included in Appendix D. Complete laboratory results are included in Appendix C.

During the 2021 sampling event, all three monitoring wells were sampled for DRO by method AK102 and GRO by method AK101. Monitoring well MW-1 was alsosampled for BTEX by method 8260D. Monitoring well MW-2 (including the blind field duplicate sample) was alsosampled for PAH by method EPA 8270D SIM and VOCs by method 8260D. A summary table of all analytical results is included in Appendix D. Complete laboratory results are included in Appendix C.

In the 2022 sampling event, all three monitoring wells were sampled for DRO by method AK102 & 103, GRO by method AK101 and PAH by method 8270D SIM. Monitoring well MW-1 was also sampled for BTEX by method 8260D. Sampling well MW-2 (including the blind field duplicate sample) and MW-3 was additionally sampled for VOCs by method 8260D. A summary table of all analytical results is included in Appendix D. Complete laboratory results are included in Appendix C.

Groundwater monitoring well MW-1, was non-detect or detected below ADEC CULs from 2019-2022 for all tested analytes with the following exceptions:

<u>2019</u>

Kobuk-MW1-919:

• All tested analytes were non-detect without exception.

<u>2020</u>

Kobuk-MW1-0720:

• Benzene: 6.7 ug/L (ADEC CUL= 4.6 ug/L)

<u>2021</u>

MW1-0921:

• Benzene: 10.6 ug/L (ADEC CUL= 4.6 ug/L)

<u>2022</u>

MW1-0822:

• Benzene: 15.3 ug/L (ADEC CUL= 4.6 ug/L)

Groundwater monitoring well MW-1 was sampled for DRO, GRO and BTEX from 2008 to 2021. In 2022, PAH analysis was added to the annual sampling. MW-1 is a cross-gradient/up-gradient groundwater well that is located east of MW-2, MW-3 and the former locations of the removed USTs. MW-1 has been non-detect or significantly below ADEC CULs from 2008-2019 for all tested analytes. In 2020-2022, the sample results show that the concentrations of benzene are increasing and are at concentrations that exceed ADEC CULs. It should be noted that DRO was detected in the well in 2020 at a concentration below ADEC CULs (380 ug/L) and increased to 537 ug/L in 2021. The DRO result for MW-1 in 2022 was a low biased result of 349 ug/L. GRO (58.1 ug/L) was detected in MW-1 in 2021 and increased to a concentration of 84.6 ug/L in 2022. The source of the increase in these analytes is unknown, but it is likely from an offsite/upgradient source.

Groundwater monitoring well MW-2 (including blind field duplicate samples), was nondetect or detected below ADEC CULs from 2019-2022 for all tested analytes with the following exceptions:

<u>2019</u>

Kobuk-MW2-919:

- Naphthalene by method 8270D SIM: 4.1 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 13 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 6.8 ug/L (ADEC CUL= 1.7 ug/L)

Kobuk-MW12-919 (blind duplicate of Kobuk-MW2-919) :

- Naphthalene by method 8270D SIM: 3.7 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 14 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 8 ug/L (ADEC CUL= 1.7 ug/L)

<u>2020</u>

Kobuk-MW2-0720:

- DRO: 1800 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 3.6 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 90 ug/L (ADEC CUL= 4.6 ug/L)
- Ethylbenzene: 22 ug/L (ADEC CUL= 15 ug/L)
- Naphthalene by method 8260D: 7.2 ug/L (ADEC CUL= 1.7 ug/L)

Kobuk-MW12-0720(blind duplicate of Kobuk-MW2-0720):

- DRO: 1900 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 3.3 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 88 ug/L (ADEC CUL= 4.6 ug/L)
- Ethylbenzene: 22 ug/L (ADEC CUL= 15 ug/L)
- Naphthalene by method 8260D: 7.1 ug/L (ADEC CUL= 1.7 ug/L)

<u>2021</u>

MW2-0921:

- Naphthalene by method 8270D SIM: 2.57 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 31.9 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 6.36 ug/L (ADEC CUL= 1.7 ug/L)

MW12-0921 (blind duplicate of MW2-0921):

- Naphthalene by method 8270D SIM: 2.4 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 31 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 5.84 ug/L (ADEC CUL= 1.7 ug/L)

<u>2022</u>

MW2-0822:

- DRO: 1870 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 3.49 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 26.2 ug/L (ADEC CUL= 4.6 ug/L)

MW12-0822 (blind duplicate of MW2-0822):

- Naphthalene by method 8270D SIM: 3.2 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 30.2 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 4.3 ug/L (ADEC CUL= 1.7 ug/L)

Monitoring well MW-2 is located down-gradient from the source area, the former location of the UST's. Historically, from 2008-2018, MW-2 was sampled for BTEX, GRO and DRO. From 2019-2022, MW-2 was sampled for VOCs, GRO, PAH and DRO. GRO exceeded ADEC CULs (with the exception of 2011 and 2013) from 2008-2014. From 2014-2022, GRO has been below ADEC CULs. GRO results were following a decreasing trend from 2008-2019, however in 2020 there was a large increase, but remained below ADEC CULs. DRO results have fluctuated greatly from 2008-2022, ranging from above ADEC CULs to below. DRO mostly followed a downward trend from 2008-2019, however in 2020 the results for DRO increased to above ADEC CULs as well as in 2022. Benzene has exceeded ADEC CULs from 2008-2022. In 2020, the results for Benzene greatly increased and since has started a downward trend. Naphthalene was first sampled in 2019 and was above ADEC CULs and has remained steady through 2022. Ethylbenzene sampled from 2008-2022 and was above ADEC CULs from 2008-2018 (with the exception of 2014 and 2017). In 2020, there was a large increase from the previous years and exceeded ADEC CULs, but from 2021-2022 the concentrations have been below ADEC CULs. Xylene (total) exceeded ADEC CULs the first time it was sampled in 2008. Since 2008, it has remained below ADEC CULs in this monitoring well.

Groundwater monitoring well MW-3, was non-detect or detected below ADEC CULs from 2019-2022 for all tested analytes with the following exceptions:

<u>2019</u>

Kobuk-MW3-919:

- DRO: 1900 ug/L (ADEC CUL= 1800 ug/L)
- 1-Methylnaphthalene: 16 ug/L (ADEC CUL: 11 ug/L)
- Naphthalene by method 8270D SIM: 14 ug/L (ADEC CUL= 1.7 ug/L)
- 1,3,4- Trimethylbenzene: 48 ug/L (15 ug/L)
- Naphthalene by method 8260C SIM: 35 ug/L (ADEC CUL= 1.7 ug/L)

<u>2022</u>

MW3-0822:

- DRO: 2570 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 2.08 ug/L (ADEC CUL= 1.7 ug/L)
- Naphthalene by method 8260C SIM: 4.2 ug/L (ADEC CUL= 1.7 ug/L)

Monitoring well MW-3 is downgradient from the source area and the former location of the removed USTs. Prior to 2019, this well was sampled for only BTEX, GRO, and DRO. There have been historical issues with this well drawing down. Due to the presence of free product in the well, analytical samples were not collected in 2020 or 2021. MW-3 has historically had the following analytes exceed ADEC CULs: GRO, DRO, benzene, 1-Methylnaphthalene, Naphthalene, 1,3,4-Trimethybenzene, ethylbenzene, and xylenes. The trend for GRO has been decreasing in concentration since 2015. DRO overall, has

been following a downward trajectory, however, there has been an increase in DRO concentration since 2019. 1-Methylnapthalene, Napthalene and 1,3,4-Trimethylnapthalene were only part of the required analyses since 2019 and all have exceeded ADEC CULs, however since 2019, the concentrations have all decreased. Benzene exceeded ADEC CULs significantly back in 2008. Since 2008, the concentrations of benzene have been decreasing and in 2022, this analyte was not detected in the associated sample. Ethylbenzene significantly exceeded ADEC CULs in 2008 (605 ug/L, ADEC CUL= 15 ug/L), since then there has been a significant decrease in concentration. Since 2018, ethylbenzene has been below ADEC CULs and in 2022 the result was 0.659 ug/L. Xylene (Total) greatly exceeded ADEC CULs from 2008 to 2016. Since 2017, the results have been below ADEC CULs and continue to follow a downward trend.

Summary tables of each years analytical results, and summary tables documenting all historical analytical results from each well are included in Appendix D. The complete laboratory reports and ADEC checklists are included in Appendix C.

4.0 CHEMICAL DATA QUALITY REVIEW

4.1 Introduction

The ADEC *Technical Memorandum Minimum Quality Assurance Requirements for Sample Handling, Reports, and Laboratory Data* (October 22, 2019) and United States Environmental Protection Agency (EPA) National Functional Guidelines for Organic Review (EPA 2017) were followed in this site investigation. The data was reviewed to determine the data quality and to evaluate potential impact on the usability of the data. The review was performed using Level II reports that were provided by Eurofins Seattle laboratory of Tacoma, WA and SGS North America Inc of Anchorage, AK. The analytical laboratory reports, chain-of-custody records, and ADEC Lab Quality Checklists are included in Appendix D.

The following quality control parameters were reviewed:

- Test Methods
- Holding times
- Sample handling and receiving
- Chain of custody and shipping documents
- Surrogate percent recovery
- Field duplicate sample comparability
- Equipment blanks
- Trip blanks
- Method blanks
- Matrix spike/matrix spike duplicate (MS/MSD) percent recoveries and relative percent difference (RPD)
- Laboratory control sample (LCS)/Laboratory control sample duplicate (LCSD) percent recoveries and RPD
- Method Sensitivity reporting limits and practical quantitation limits (PQL)

4.2 Analytical Laboratory and Test Methods

Analytical analysis for this project was performed by Eurofins Seattle laboratory of Tacoma, Washington and SGS North America Inc of Anchorage Alaska. Eurofins Seattle and SGS Anchorage are approved by ADEC and DOD for the test methods listed below. SGS North America Inc and Eurofins Seattle performed groundwater analysis for the following analytes and methods:

- GRO- AK101
- DRO- AK102
- VOCs- EPA 8260D
- PAH- EPA 8270D SIM

A total of four (4) analytical sampling events occurred during the project.

A total of four (4) lab reports were provided by the laboratory for this project with the following lab identification numbers:

- <u>580-89500-1 (2019)</u>
- <u>580-96236-1 (2020)</u>
- <u>1216322 (2021)</u>
- <u>1225201 (2022)</u>

4.3 Data Review Process

The ADEC *Technical Memorandum Minimum Quality Assurance Requirements for Sample Handling, Reports, and Laboratory Data* (October 22, 2019) and United States Environmental Protection Agency (EPA) National Functional Guidelines for Organic Review (EPA 2017) were used as guidance throughout the data quality review. An ADEC Laboratory Data Review Checklist was completed and laboratory discrepancies and QC errors were noted in the Chemical Data Quality Review section of the final report. The data was reviewed to determine the data quality and to evaluate potential impact on the usability of the data. Analytical results with data quality and or usability affected by QC errors have been qualified with data flags in the analytical summary tables included in Appendix C.

4.4 Data Validation

In order for data to be used for decision making purposes it is essential that it be of known and documented quality. Validation of data requires that appropriate QA/QC procedures be followed and that adequate documentation be included for all laboratory-generated analytical data. The QA/QC documentation provided by the laboratory in conjunction with sample results allows for the evaluation of the following indicators of data quality:

- Integrity and stability of samples;
- Instrument performance during sample analysis;
- Possibility of sample contamination;
- Identification and quantitation of analytes;

- Analytical precision; and
- Analytical accuracy

The laboratory has conducted QA/QC checks in accordance with ADEC, EPA, DOD, project, and lab specific requirements and provided documentation of these checks in the following sections of the provided Level IV report:

- Case Narrative
- Chain of Custody documentation
- Sample receipt documentation
- Summary of results
- Summary of QC results and
- Raw Data

These sections of the laboratory report were reviewed and an ADEC Laboratory Checklist was completed in order to identify potential data quality issues. The quality control parameters were found to be within accepted limits with the following exceptions listed in Sections 4.4-4.7 below.

All QA/QC errors identified during data validation were reviewed to determine the impact on data quality and data usability. These effects on data quality and usability of the data are discussed in in Sections 4.4-4.7 below.

4.5 Sample Handling and Chain of Custody

<u>580-89500-1:</u>

Five (5) analytical samples consisting of four (4) groundwater samples (including one duplicate sample) and one (1) trip blank were received by Eurofins Seattle on September 25, 2019. The samples arrived in good condition and were properly preserved. The coolers at the time of receipt in Seattle was 0.7 $^{\circ}$ C.

The COC information was completed properly, signed and dated. There were no discrepancies related to the COC or sample receipt without exception.

<u>580-96236-1:</u>

Four (4) samples consisting of three (3) groundwater samples (including one duplicate) and one (1) trip blank were received by Eurofins Seattle on July 23, 2020. The samples arrived in good condition and properly preserved. The cooler at the time of receipt in Seattle was $3.8 \degree$ C.

The COC information was completed properly, signed, and dated. There were no discrepancies related to the COC or sample receipt without exceptions.

<u>1216322:</u>

Four (4) samples consisting of three (3) groundwater samples (including one duplicate sample) were received by SGS on September 24, 2021. The samples arrived in good

condition and properly preserved. Sample received by laboratory at a temperature of 5.8° C at the SGS Fairbanks office and 1.9° C at the SGS Anchorage laboratory.

The COC information was completed properly, signed, and dated. There were no discrepancies related to the COC or sample receipt with the following exceptions:

• The laboratory stated that the COC included PAH analysis for sample MW1-0921, but a PAH container was not provided. The field technician mistakenly included PAH analysis for this sample, but it was not required for this sampling event.

<u>1225201:</u>

Five (5) sample consisting of four (4) groundwater samples (including one duplicate) and one (1) trip blank were received by SGS on August 20, 2022. The samples arrived in good condition and were property preserved. Cooler temperature upon receipt in Anchorage was 3.6° C.

The COC information was completed properly, signed, and dated. There were no discrepancies related to the COC or sample receipt with the following exceptions:

- The laboratory received 10 containers for sample 1 instead of 8 mentioned on COC. Received containers for DRO & PAH analysis for sample 4. Will be ran per client although not noted on COC. Received 3 containers for trip blank instead of 6 that were mentioned on COC.
- Sample MW12-0822 was lost due to lab error. Sample was not re-extracted due to insufficient remaining sample volume.

4.6 Holding Time Compliance

<u>580-89500-1:</u>

All samples were analyzed within the required holding times without exception.

<u>580-96236-1:</u>

All samples were analyzed withing the required holding times without exception.

<u>1216322:</u>

All samples were analyzed withing the required holding times without exception.

<u>1225201:</u>

All samples were analyzed withing the required holding times without exception.

4.7 Field Quality Assurance/ Quality Control

4.7.1 Equipment Blanks

Equipment blanks were not required for this project. All samples were collected with dedicated disposable sampling supplies.

4.7.2 Field Duplicate Samples

Field quality control (QC) procedures for this project included the collection and analysis of four (4) soil blind field duplicate samples. One blind field duplicate sample was collected for each matrix and analytical method, then analyzed for the same analytes as the original sample. The QC samples were analyzed to assess the quality of sample collection and handling, as well as the accuracy and precision of the laboratory's analytical procedures.

- Kobuk-MW12-919 is the blind field duplicate to sample Kobuk-MW2-919.
- Kobuk-MW12-0720 is the blind field duplicate to sample Kobuk-MW2-0720.
- MW12-0921 is the blind field duplicate to sample MW2-0921.
- MW12-0822 is a blind field duplicate of sample MW2-0822.

RPD calculations provide a comparison of two theoretically identical samples that are submitted blind to the laboratory in order to provide an un-biased measure of precision. Due to the nature of the RPD calculation, sample data for both samples must be reported in order for the RPD calculation to provide meaningful data. RPD calculations are computed for all compounds that had laboratory reported detections above the limit of detection (LOD) for both samples. RPD calculation estimations are given below for sample sets with only one analyte detected above the LOD. The LOD is used in the place of the sample result in this type of data set. The RPDs are shown in Table 3 below for all analytes with detected results in the sample and/or duplicate.

The ADEC recommended RPD limit for duplicate groundwater samples is 30%.

The RPD calculations fell within the recommended limit for all groundwater sample analytes with the following exceptions:

<u>580-89500-1:</u>

The following analytes had an RPD above recommended limits for samples Kobuk-MW2-919 and Kobuk-MW12-919:

- 8260C SIM: 1,2-Dichloroethane (150.5%)
- 8260C: 4-Isopropyltoluene (75.6%)
- AK101: GRO (52.6%)

Data quality for the analytes with RPDs exceeding control limits are affected. Associated results are considered estimated with an unknown bias and are qualified with the "QN" data flag. All associated results are less than ADEC CULs. Data is usable for the purpose of groundwater characterization.

<u>580-96236-1:</u>

The following analyte had an RPD above recommended limits for samples Kobuk-MW12-0720 Kobuk-MW2-0720:

• 8260C SIM: 1,2-Dichloroethane (106.5%)

Data quality for the analytes with RPDs exceeding control limits are affected. Associated results are considered estimated with an unknown bias and are qualified with the "QN" data flag. All associated results are less than ADEC CULs. Data is usable for the purpose of groundwater characterization.

<u>1216322:</u>

All calculated RPDs were within control limits for samples MW12-0921 and MW2-0921.

<u>1225201:</u>

The following analyte had an RPDs above recommended limits for samples MW2-0822 and MW12-0822:

• 8260D: Naphthalene (101.8%), Chloromethane (70.1%), n-Propylbenzene (35.3%), sec-Butylbenzene (34.1%)

Data quality for the analytes with RPDs exceeding control limits are affected. Associated results are considered estimated with an unknown bias and are qualified with the "QN" data flag. All associated results are less than ADEC CULs with the exception of Naphthalene. Naphthalene was detected in the duplicate and the original at 2X the ADEC CULs. Data remains usable.

4.7.3 Trip Blank Samples

Field quality control (QC) procedures for this project included the analysis of four (4) groundwater trip blank samples which accompanied the samples in the field and transport to the laboratory during each of the sampling events. The trip blank samples were analyzed to assess the quality of sample collection and handling.

In ideal conditions the analysis of a trip blank sample should not indicate the presence of any of the tested analytes in a quantity above the limit of quantitation (LOQ). A result above the LOQ can indicate that cross-contamination occurred between samples during sample transport, analysis, or indicate laboratory contamination.

<u>580-89500-1:</u>

A total of one (1) soil trip blank was analyzed for this sampling event. The trip blank was analyzed for VOC compounds by method 8260C and GRO by AK101. Naphthalene (0.12 ug/L) was detected in the Trip Blank at concentrations below the LOQs and ADEC CULs. All results in which the analyte was detected in both the sample and the trip blank are qualified with the B data flag. Data quality is affected. A method blank detection was recorded for Naphthalene at similar levels to the trip blank detection. Cross-contamination may have occurred during the sampling event or transport, but the detection more likely occurred from the method blank detection. All affected results were either significantly above or below ADEC CULs and remain usable.

<u>580-96236-1:</u>

A total of one (1) soil trip blank was analyzed for this sampling event. The trip blank was analyzed for VOC compounds by method 8260C and GRO by AK101. Acetone (18 ug/L) was detected in the Trip Blank at concentrations below the LOQ and the project limits. All results in which the analyte was detected in both the sample and the blank have been qualified with the B data flag. Data quality is affected. Associated non-detect results are not affected. Cross-contamination between samples for these analytes may have occurred for this sampling event and associated results may be biased high. All affected results are below ADEC CULs. Data is usable.

<u>1216322:</u>

A total of one (1) soil trip blank was analyzed for this sampling event. The trip blank was analyzed for VOC compounds by method 8260C and GRO by AK101. The trip blank was non-detect for all tested analytes without exceptions.

<u>1225201:</u>

A total of one (1) soil trip blank was analyzed for this sampling event. The trip blank was analyzed for VOC compounds by method 8260C and GRO by AK101. The trip blank was non-detect for all tested analytes without exceptions.

4.8 Laboratory Quality Assurance / Quality Control

4.8.1 Detection Limits

All reported LOQs for the project were less than the ADEC CUL with the following exceptions for each specific laboratory report listed below.

<u>580-89500-1:</u>

• **8260C:** 1,2,3-Trichloropropane has detection limits that exceed ADEC CUL's in one or more samples.

Data quality is affected. Analytes with elevated detection limits could be present at concentrations that exceed ADEC cleanup levels. The samples were collected as initial characterization samples to determine the contaminants of concern at the source of the spill. The data is usable for this purpose. Sample results with detection limits that exceed ADEC CUL's are highlighted in blue in the analytical summary table.

<u>580-96236-1:</u>

• **8260D:** 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,2,3-Trichloropropane, 1,2-Dibromoethane, 1,2-Dichloroethane, Bromodichloromethane, Chloroform, Hexachlorobutadiene, Naphthalene, Trichloroethene and Vinyl chloride have detection limits that exceed ADEC CUL's in one or more samples.

Data quality is affected. Analytes with elevated detection limits could be present at concentrations that exceed ADEC cleanup levels. Data is still usable. Sample results with detection limits that exceed ADEC CUL's are highlighted in blue in the analytical summary table.

<u>1216322:</u>

• **8260D** – 1,2,3-Trichloropropane has a detection limit that exceeds the ADEC CUL in one or more samples.

Data quality is affected. Analytes with elevated detection limits could be present at concentrations that exceed ADEC cleanup levels. Data is still usable. Sample results with detection limits that exceed ADEC CUL's are highlighted in blue in the analytical summary table.

<u>1225201:</u>

• 8260 – 1,2,3-Trichloropropane has a detection limit that exceeds ADEC CUL's in one or more samples.

Data quality is affected. Analytes with elevated detection limits could be present at concentrations that exceed ADEC cleanup levels. Data is still usable. Sample results with detection limits that exceed ADEC CUL's are highlighted in blue in the analytical summary table.

4.8.2 Method Blanks

<u>580-89500-1:</u>

A method blank was reported for each matrix, analysis, and 20 samples in this sampling event.

All method blank results were non-detect for all analytes with the following exceptions:

• 8260C SIM: Hexachlorobutadiene was detected in MB 580-313335/7 at concentrations (0.0529 ug/L) that were above the method detection limit, but

below the LOQ (0.50 ug/L). This analyte was not detected in associated samples. Data quality and usability are not affected.

• 8260C SIM: Napthalene was detected in MB 580-313335/7 at concentrations (0.133 ug/L) that were above the method detection limit, but below the LOQ (0.50 ug/L). This analyte was detected in associated samples significantly above and below ADEC CULs. Data quality is affected. Analytes detected in both the blank and the samples are qualified with the B data flag. Data usability is not affected.

<u>580-96236-1:</u>

A method blank was reported for each matrix, analysis, and 20 samples in this sampling event. All method blank results associated with this sampling event were non-detect without exception.

<u>1216322:</u>

A method blank was reported for each matrix, analysis, and 20 samples in this sampling event.

All method blank results associated with this sampling event were non-detect or less than the limit of quantitation.

• **8270D SIM** – 2-Methylnaphthalene (0.0174 ug/L) and Phenanthrene (0.018 ug/L) were detected in Method Blank 1639560 above the MDL but less than half the LOQ (0.0500 ug/L). Data quality is affected. Analytes detected in both the samples and the blank are considered high biased estimates and are qualified with the B data flag. These analytes were detected in associated samples significantly below ADEC CULs and remain usable. Data usability is not affected.

<u>1225201:</u>

A method blank was reported for each matrix, analysis, and 20 samples in this sampling event.

All method blank results associated with this sampling event were non-detect or less than the limit of quantitation.

• **8270**: 1-Methylnaphthalene and 2-Methylnaphthalene were detected in MB 1682978 at concentrations (0.0234 ug/L and 0.0315 ug/L) that were above the method detection limit but below the LOQ (0.0250 ug/L). Data quality is affected. Analytes detected in both the sample and the blank are considered high biased estimates and are qualified with the B data flag. 1-Methylnaphthalene and 2-Methylnaphthalene were detected in associated samples at concentrations below ADEC CULs. Data usability is not affected.

4.8.3 LCS/LCSD

<u>580-89500-1:</u>

The laboratory analyzed and reported at least one LCS/LCSD per matrix, analysis, and 20 samples. All LSC/LCSD %Rs and RPDs were within control limits without exceptions.

<u>580-96236-1:</u>

The laboratory analyzed and reported at least one LCS/LCSD per matrix, analysis, and 20 samples and all LSC/LCSD %Rs and RPDs were within control limits with the following exceptions:

• 8260D: LCS 580-334180/6 exceeded recovery criteria for Dichlorodifluoromethane and Chloromethane. The analyte was biased high in the LCS and was not detected in associated samples; therefore, the data has been reported, and does not require qualification. Data quality and usability are not affected.

<u>1216322:</u>

The laboratory analyzed and reported at least one LCS/LCSD per matrix, analysis, and 20 samples. All LSC/LCSD %Rs and RPDs were within control limits without exceptions.

<u>1225201:</u>

The laboratory analyzed and reported at least one LCS/LCSD per matrix, analysis, and 20 samples and all LSC/LCSD %Rs and RPDs were within control limits with the following exceptions:

• AK102: The LCSD for batch 1684238 recovered below acceptance criteria for DRO. Data quality is affected. Associated detected results for DRO in samples MW1-0822, MW2-0822 and MW3-0822 are considered low biased estimates and are qualified with the QL data flag. The associated low biased detected results are significantly above or below ADEC CLs and remain usable.

4.8.4 Surrogates

<u>580-89500-1:</u>

Surrogate recoveries were performed and reported for all analyses and the %R for all surrogates were within control limits without exceptions.

<u>580-96236-1:</u>

Surrogate recoveries were performed and reported for all analyses and the %R for all surrogates were within control limits without exceptions.

<u>1216322:</u>

Surrogate recoveries were performed and reported for all analyses and the %R for all surrogates were within control limits without exceptions.

<u>1225201:</u>

Surrogate recoveries were performed and reported for all analytes and the %R for all surrogates were within control limits with the following exceptions:

• AK101: Surrogate 4-Bromofluorobenzene exceeded acceptance criteria for sample MW2-0822 for Analysis Batch VFC16244. Data quality is affected. Detected results may be biased high and are qualified with QH data flags in the associated samples. Non-detect results are not affected. Associated detected results for GRO were significantly below ADEC cleanup levels and remain usable.

4.8.5 Other Laboratory QC Errors

Other laboratory QA/QC errors not reported elsewhere are listed below:

<u>580-89500-1:</u>

• No other laboratory QA/QC errors were reported by the laboratory.

<u>580-96236-1:</u>

- AK102: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern were later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: Kobuk-MW1-0720 (580-96236-1).
- AK102: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern were earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: Kobuk-MW2-0720 (580-96236-2) and Kobuk-MW12-0720 (580-96236-3).

<u>1216322</u>:

• No other laboratory QA/QC errors were reported by the laboratory.

<u>1216322:</u>

• No other laboratory QA/QC errors were reported by the laboratory.

Although the data quality was affected by the QC errors listed above, none of the data related to the contaminants of concern required rejection or determined to be unusable. The data was deemed usable for its intended purpose of groundwater characterization.

5.0 Conclusions and Recommendations

Analytical results from MW-1 groundwater samples were below ADEC cleanup levels for all tested analytes with the following exceptions:

<u>2020</u>

Kobuk-MW1-0720:

• Benzene: 6.7 ug/L (ADEC CUL= 4.6 ug/L)

<u>2021</u>

MW1-0921:

• Benzene: 10.6 ug/L (ADEC CUL= 4.6 ug/L)

2022

MW1-0822:

• Benzene: 15.3 ug/L (ADEC CUL= 4.6 ug/L)

Historically, MW-1 has been non-detect or below ADEC cleanup levels for all tested analytes until 2020. In 2020, there was a large increase in the concentrations of benzene that exceed ADEC CULs, and the concentration of benzne continued to increase through 2022. It should be noted that DRO was detected in the well in 2020 at a concentration below ADEC CULs (380 ug/L) and increased to 537 ug/L in 2021. The DRO result for MW-1 in 2022 was a low biased result of 349 ug/L. GRO (58.1 ug/L) was detected in MW-1 in 2021 and increased to a concentration of 84.6 ug/L in 2022. The source of the increase in these analytes is unknown, but it is likely from an offsite/upgradient source.

Analytical results from MW-2 groundwater samples were below ADEC cleanup levels for all tested analytes with the following exceptions:

<u>2019</u>

Kobuk-MW2-919:

- Naphthalene by method 8270D SIM: 4.1 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 13 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 6.8 ug/L (ADEC CUL= 1.7 ug/L)

Kobuk-MW12-919:

- Naphthalene by method 8270D SIM: 3.7 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 14 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 8 ug/L (ADEC CUL= 1.7 ug/L)

<u>2020</u>

Kobuk-MW2-0720:

- DRO: 1800 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 3.6 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 90 ug/L (ADEC CUL= 4.6 ug/L)
- Ethylbenzene: 22 ug/L (ADEC CUL= 15 ug/L)
- Naphthalene by method 8260D: 7.2 ug/L (ADEC CUL= 1.7 ug/L)

Kobuk-MW12-0720:

- DRO: 1900 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 3.3 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 88 ug/L (ADEC CUL= 4.6 ug/L)
- Ethylbenzene: 22 ug/L (ADEC CUL= 15 ug/L)
- Naphthalene by method 8260D: 7.1 ug/L (ADEC CUL= 1.7 ug/L)

<u>2021</u>

MW2-0921:

- Naphthalene by method 8270D SIM: 2.57 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 31.9 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 6.36 ug/L (ADEC CUL= 1.7 ug/L)

MW12-0921:

- Naphthalene by method 8270D SIM: 2.4 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 31 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 5.84 ug/L (ADEC CUL= 1.7 ug/L)

<u>2022</u>

MW2-0822:

- DRO: 1870 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 3.49 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 26.2 ug/L (ADEC CUL= 4.6 ug/L)

MW12-0822:

- Naphthalene by method 8270D SIM: 3.2 ug/L (ADEC CUL= 1.7 ug/L)
- Benzene: 30.2 ug/L (ADEC CUL= 4.6 ug/L)
- Naphthalene by method 8260D: 4.3 ug/L (ADEC CUL= 1.7 ug/L)

DRO results have fluctuated over the four year sampling period addressed in this report, but remained above ADEC cleanup levels in 2022. Napthalene and benzene concentrations were above ADEC cleanup levels during this period. Ethylbenzene concentrations were below in 2019 but increased to above ADEC cleanup levels in 2020. In 2021 and 2022, ethylbenzene was below ADEC cleanup levels.

Analytical results from MW-3 groundwater samples were below ADEC cleanup levels for all tested analytes with the following exceptions:

<u>2019</u>

Kobuk-MW3-919:

- DRO: 1900 ug/L (ADEC CUL= 1800 ug/L)
- 1-Methylnaphthalene: 16 ug/L (ADEC CUL: 11 ug/L)
- Naphthalene by method 8270D SIM: 14 ug/L (ADEC CUL= 1.7 ug/L)
- 1,3,4- Trimethylbenzene: 48 ug/L (15 ug/L)
- Naphthalene by method 8260C SIM: 35 ug/L (ADEC CUL= 1.7 ug/L)

<u>2022</u>

MW3-0822:

- DRO: 2570 ug/L (ADEC CUL= 1800 ug/L)
- Naphthalene by method 8270D SIM: 2.08 ug/L (ADEC CUL= 1.7 ug/L)
- Naphthalene by method 8260C SIM: 4.2 ug/L (ADEC CUL= 1.7 ug/L)

Due to the presence of free product in the well analytical samples were not collected from MW-3 in 2020 or 2021. Up until 2019, MW-3 was only analyzed for BTEX, GRO and DRO. From 2019-2022, this monitoring well was sampled for GRO, DRO, PAH and VOCs. DRO has exceeded ADEC cleanup levels in all historic sampling events that samples were collected from the well. GRO has been below ADEC cleanup levels since 2015. 1-Methylnapthalene was above ADEC cleanup levels in 2019, however in 2022, this analyte was significantly below ADEC cleanup levels. Naphthalene was above ADEC cleanup levels. Naphthalene was above ADEC cleanup levels. Naphthalene was above ADEC cleanup levels, however saw a significant decrease in concentration in 2022, but still exceeded ADEC cleanup levels. Benzene was above ADEC cleanup levels from 2008-2012, was below ADEC CULs from 2013-2022 and in 2022, the well was non-detect for the analyte. Ethylbenzene and xylenes been below ADEC CULs since 2018 and 2017 respectively.

Since MW-1 has seen an increase in benzene concentration above ADEC cleanup levels (and increases in DRO and GRO below ADEC CULs), has been historically non-detect for all analytes or detected below ADEC cleanup levels and this well is cross-gradient to the source area, it is likely that this contamination is migrating onsite from another upgradient source.

In general, all analytes sampled MW-2 have been decreasing in concentration with the exception of DRO and Benzene. These analytes saw an increase in concentration in 2020 and have fluctuated greatly historically.

In general, all analytes sampled in MW-3 have been decreasing in concentration with the exception of DRO. Prior to 20019, DRO was following a downward trend. From 2019 to 2022, there was an increase in concentration however, this well wasn't sampled in 2020 and 2021.

MW2 is located adjacent to the former site of two (2) 10,000-gallon gasoline UST's. MW3 is located adjacent to the former site of one (1) 10,000-gallon gasoline UST and one (1) 5,000-gallon diesel UST.

Field technicians have observed slow recovery in MW-3 on consecutive years. It is likely that the galvanized metal screen is rusting and slowing recovery. All the monitoring wells at the site are galvanized metal with a cut screen. This type of well is much more inexpensive to install as it can be jackhammered in place without the use of a drill rig, but this well type is not ideal for long-term monitoring due to screen deterioration over time. It is likely that MW-3 (and possibly MW2 and MW1) is approaching the end of its serviceable use. If additional wells are installed in the future, the value of replacing MW-3 should be evaluated.

ARES recommends the following:

- Schedule an additional annual groundwater sampling event during period of high seasonal groundwater conditions (August 2023). Groundwater collected from all wells should be analyzed for GRO by method AK101 and DRO by method AK 102. Due to new fuel related detections in the well, groundwater collected from MW1 should also be analyzed for VOCsby method EPA 8260D and PAH by method 8270DSIM. Groundwater collected from MW-2 and MW-3 should be analyzed for volatile organic compounds (VOCs) by method EPA 8260D, and polycyclic aromatic hydrocarbons (PAH) by method EPA 8270D SIM;
- Contaminants are likely migrating off-site. Additional down-gradient samples (soil/water) would need to be collected to determine the extent of the contaminant plume. ARES recommends additional soil borings and well points/groundwater monitoring wells be placed down-gradient to assess potential impacts. If additional wells are installed, ARES recommends replacement of MW-3. Monitoring wells installed on adjacent properties or right of ways would require permission from the property owners and be installed in accordance with an ADEC approved workplan.

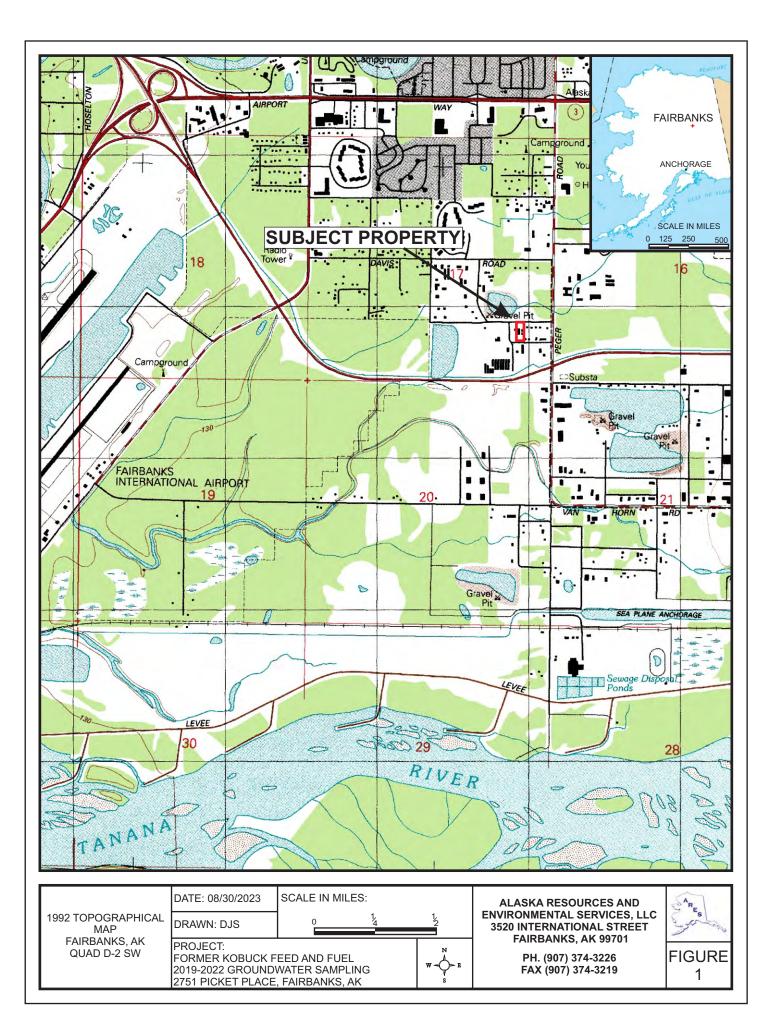
6.0 Limitations

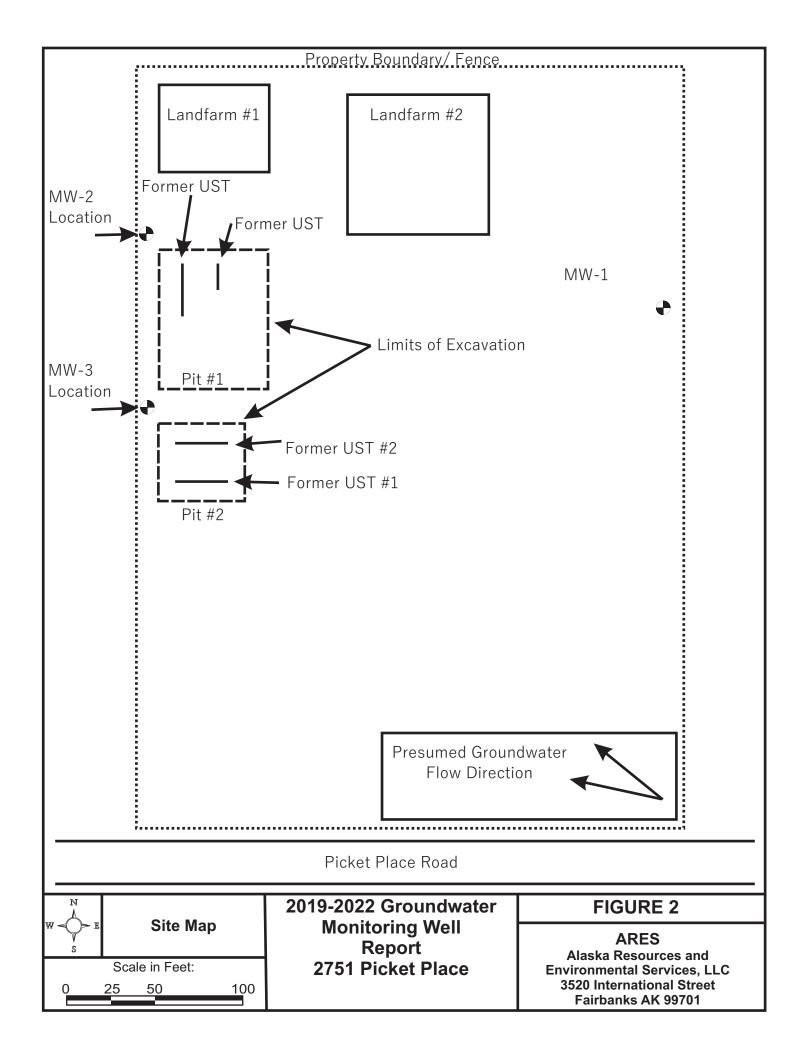
This report presents the analytical results from a limited number of groundwater samples and should not be construed as a comprehensive study of groundwater quality at the site. The samples were intended to evaluate the presence or absence of contaminants at the locations selected. Detectable levels of petroleum hydrocarbons may be present at other locations. It was also not the intent of our sampling and testing to detect the presence of groundwater affected by contaminants other than those for which laboratory analyses were performed. No conclusions can be drawn about the presence or absence of other contaminants. This is not a geotechnical study.

The data presented in this report should be considered representative of the time of our site observations and sample collection. Changes in site conditions can occur with time because of natural forces or human activity. ARES reserves the right to modify or alter conclusions and recommendations should additional data become available.

This report was prepared for the exclusive use of Castle Properties, Inc, Gary Lundgren, and their representatives. If it is made available to others, it should be for information on factual data only and not as a warranty of subsurface conditions.

Appendix A: Figures

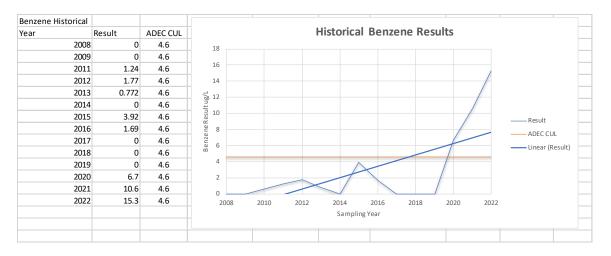




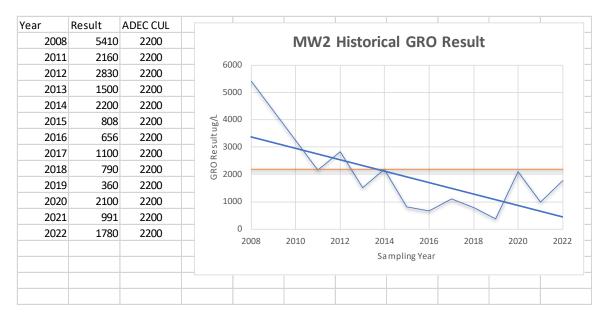
Appendix B:

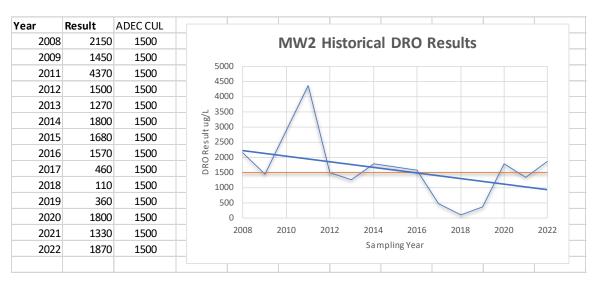
Graphical Trend Analysis of Analytical Results Over Time

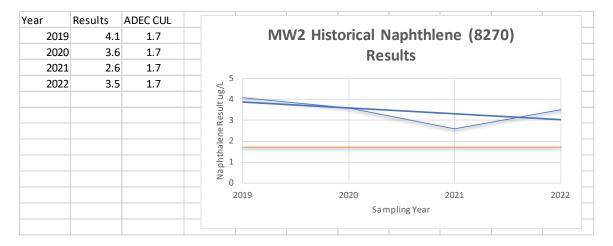


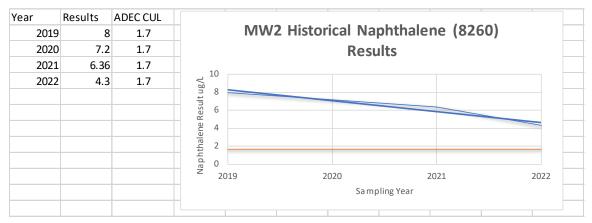


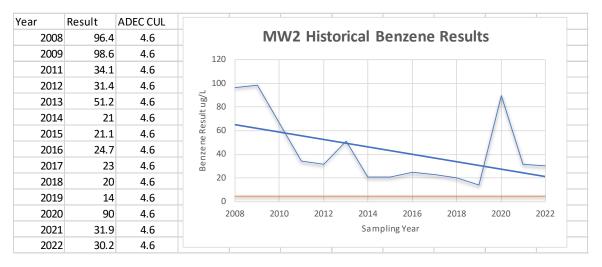


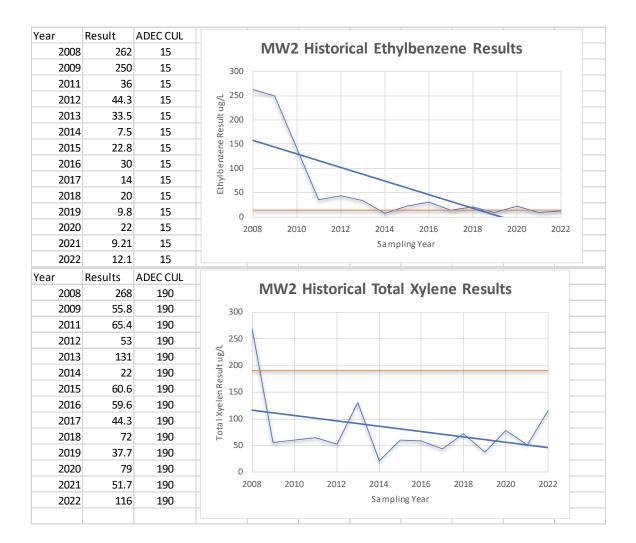




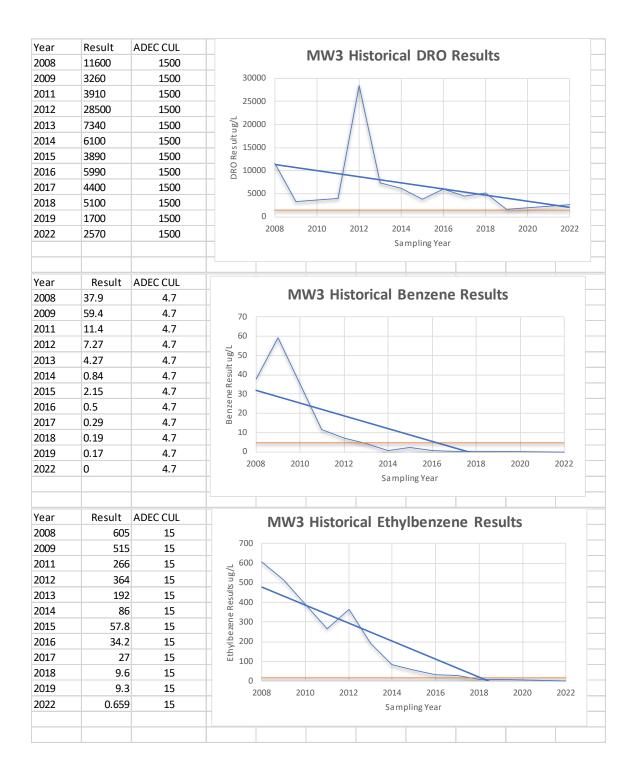


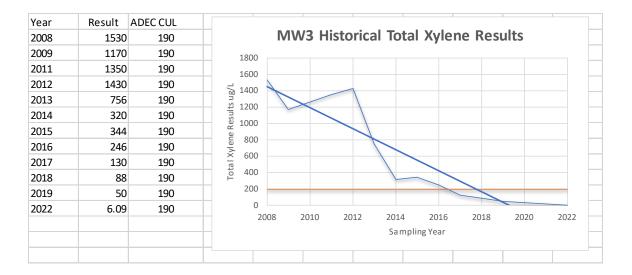






MW-3





Appendix C:

Laboratory Reports & ADEC Lab Quality Checklists

Appendix C-1:

2019 Laboratory Report 580-89500-1 & ADEC Lab Quality Checklist

🔅 eurofins

Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

Laboratory Job ID: 580-89500-1

Client Project/Site: Kobuk Feed & Fuel

For:

LINKS

Review your project results through

Total Access

Have a Question?

Ask-

The

www.testamericainc.com

Visit us at:

Expert

Alaska Resources & Environment PO BOX 83050 Fairbanks, Alaska 99708

Attn: Lyle Gresehover

M. Elaine Walker

Authorized for release by: 10/9/2019 3:16:05 PM Elaine Walker, Project Manager II (253)248-4972 elaine.walker@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Job ID: 580-89500-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-89500-1

Receipt

Five samples were received on 9/25/2019 12:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.7° C.

GC/MS VOA

Method(s) 8260C SIM: The method blank for analytical batch 580-312962 contained Naphthalene above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8260C SIM: The method blank for analytical batch 580-313335 contained Naphthalene and Hexachlorobutadiene above the method detection limit. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Qua	lifiers
-----	---------

Qualifiers		3
GC/MS VOA Qualifier	Qualifier Description	4
В	Compound was found in the blank and sample.	
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	5
GC/MS Semi	VOA	
Qualifier	Qualifier Description	
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	
GC VOA		
Qualifier	Qualifier Description	
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	8
Glossary		
Abbreviation	These commonly used abbreviations may or may not be present in this report.	
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	1
%R	Percent Recovery	
CFL	Contains Free Liquid	
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
PQL	Practical Quantitation Limit	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEO	Taniaity Family alarst Questionst (Diania)	

TEQ Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: Kobuk-MW1-919 Date Collected: 09/23/19 13:30 Date Received: 09/25/19 12:30

Lab Sample ID: 580-89500-1

Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0	0.53	ug/L			10/03/19 20:06	1
Toluene	ND		2.0	0.39	ug/L			10/03/19 20:06	1
Ethylbenzene	ND		3.0	0.50	ug/L			10/03/19 20:06	1
m-Xylene & p-Xylene	ND		3.0	0.75	ug/L			10/03/19 20:06	1
o-Xylene	ND		2.0	0.39	ug/L			10/03/19 20:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120					10/03/19 20:06	1
Trifluorotoluene (Surr)	94		80 - 120					10/03/19 20:06	1
4-Bromofluorobenzene (Surr)	96		80 - 120					10/03/19 20:06	1
Dibromofluoromethane (Surr)	97		80 - 120					10/03/19 20:06	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 126					10/03/19 20:06	1
Method: AK101 - Alaska - Ga Analyte	soline Range Result	e Organics Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Method: AK101 - Alaska - Ga Analyte Gasoline Range Organics (GRO)	soline Rang				Unit mg/L	<u>D</u>	Prepared	Analyzed 10/03/19 20:45	Dil Fac
Method: AK101 - Alaska - Ga Analyte Gasoline Range Organics (GRO) -C6-C10	soline Range Result	Qualifier	RL			<u>D</u>	Prepared	-	Dil Fac
Method: AK101 - Alaska - Ga Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr)	soline Rang Result ND	Qualifier	RL 0.25			<u>D</u>		10/03/19 20:45	1
Method: AK101 - Alaska - Ga Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr) Method: AK102 & 103 - Alask	soline Range Result ND %Recovery 83 (a - Diesel Ra	Qualifier Qualifier	RL 0.25 Limits 50 - 150	0.10 ual Ran	mg/L	<u>-</u>	Prepared	10/03/19 20:45	Dil Fa
Method: AK101 - Alaska - Ga Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr) Method: AK102 & 103 - Alask Analyte Diesel Range Organics (DRO)	soline Range Result ND %Recovery 83 (a - Diesel Ra	Qualifier Qualifier	RL 0.25 <u>Limits</u> 50 - 150	0.10 ual Ran	mg/L ge Organ Unit	 nics (0	Prepared	10/03/19 20:45 Analyzed 10/03/19 20:45 Analyzed	Dil Fae
Method: AK101 - Alaska - Ga Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr) Method: AK102 & 103 - Alask Analyte Diesel Range Organics (DRO) (C10-C25)	soline Range Result ND %Recovery 83 (a - Diesel Ra Result	Qualifier Qualifier ange Orga Qualifier	RL 0.25 <u>Limits</u> 50 - 150 nics & Resid RL	0.10 ual Ran MDL	mg/L ge Organ Unit	 nics (0	Prepared GC) Prepared	10/03/19 20:45 Analyzed 10/03/19 20:45 Analyzed	Dil Fac
Method: AK101 - Alaska - Ga Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate	soline Range Result ND %Recovery 83 (a - Diesel Ra Result ND	Qualifier Qualifier ange Orga Qualifier	RL 0.25 Limits 50 - 150 nics & Resid RL 0.27	0.10 ual Ran MDL	mg/L ge Organ Unit	 nics (0	Prepared 5C) Prepared 10/02/19 12:35	Analyzed 10/03/19 20:45 Analyzed 10/03/19 20:45 Analyzed 10/03/19 05:10	Dil Fac

RL

0.50

0.50

0.50

0.50

0.50

0.50

0.50

0.50

MDL Unit

0.0090 ug/L

0.049 ug/L

0.017 ug/L

0.014 ug/L

0.014 ug/L

0.024 ug/L

0.014 ug/L

0.098 ug/L

D

Prepared

Client Sample ID: Kobuk-MW2-919 Date Collected: 09/23/19 12:30 Date Received: 09/25/19 12:30

Analyte

1,1,1,2-Tetrachloroethane

1.1.2.2-Tetrachloroethane

1,1,2-Trichloroethane

1,1-Dichloroethene

1,2-Dibromoethane

1.2-Dichloroethane

2-Hexanone

Benzene

Bromoform Bromomethane Chloroform

1,4-Dichlorobenzene

Bromodichloromethane

cis-1,3-Dichloropropene Dibromochloromethane Dibromomethane Hexachlorobutadiene Naphthalene Tetrachloroethene trans-1,3-Dichloropropene

Trichloroethene Vinyl chloride

Toluene-d8 (Surr) Trifluorotoluene (Surr)

1,1,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloropropene 1,2,3-Trichlorobenzene 1,2,3-Trichloropropane 1,2,4-Trichlorobenzene 1,2,4-Trimethylbenzene

1,2-Dibromo-3-Chloropropane

1,3,5-Trimethylbenzene

1,2-Dichlorobenzene

1,2-Dichloropropane

1,3-Dichlorobenzene

1,3-Dichloropropane

2,2-Dichloropropane

2-Chlorotoluene

4-Chlorotoluene

Bromobenzene

4-Isopropyltoluene

1,2-Dichloroethane-d4 (Surr) 4-Bromofluorobenzene (Surr) Dibromofluoromethane (Surr)

Method: 8260C - Volatile Organic C

Surrogate

Analyte

Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Result Qualifier

ND

ND

ND

ND

ND

ND

ND

%Re

ND

ND

ND

ND

ND

ND

ND

ND

ND

2.7 J

0.12 J

Job	ID	580-	.895	500-

-89500-1

Dil Fac

1

1

1

1

1

1

1

Lab Sample ID: 580-89500-2 Matrix: Water

Analyzed

10/04/19 23:46

10/04/19 23:46

10/04/19 23:46

10/04/19 23:46

10/04/19 23:46

10/04/19 23:46

10/04/19 23:46

10/04/19 23:46

ND		0.50	0.090	uy/L			10/04/19 23.40	1	
13		0.50	0.0090	ug/L			10/04/19 23:46	1	3
ND		0.50	0.0060	ug/L			10/04/19 23:46	1	
ND		0.50	0.013	ug/L			10/04/19 23:46	1	
ND		0.50	0.012	ug/L			10/04/19 23:46	1	
ND		0.50	0.0090	ug/L			10/04/19 23:46	1	
ND		0.50	0.026	ug/L			10/04/19 23:46	1	
ND		0.50	0.016	ug/L			10/04/19 23:46	1	
ND		0.50	0.017	ug/L			10/04/19 23:46	1	
ND		0.50	0.026	ug/L			10/04/19 23:46	1	
6.8	В	0.50	0.013	ug/L			10/04/19 23:46	1	
0.15	J	0.50	0.017	ug/L			10/04/19 23:46	1	
ND		0.50	0.027	ug/L			10/04/19 23:46	1	
ND		0.50	0.0090	ug/L			10/04/19 23:46	1	
ND		0.50	0.013	ug/L			10/04/19 23:46	1	
ecovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	
99		48 - 150			-		10/04/19 23:46	1	
102		75 - 120					10/04/19 23:46	1	
102									
97		80 - 120					10/04/19 23:46	1	
		80 - 120 75 - 120					10/04/19 23:46 10/04/19 23:46	1 1	
97									
97 101 99	unds by G	75 - 120 80 - 120					10/04/19 23:46	1	
97 101 99 Compo	unds by G Qualifier	75 - 120 80 - 120	MDL	Unit	D	Prepared	10/04/19 23:46	1	
97 101 99 Compo		75 - 120 80 - 120 C/MS	MDL 0.39		<u>D</u>	Prepared	10/04/19 23:46 10/04/19 23:46	1 1	
97 101 99 Compo Result		75 - 120 80 - 120 C/MS RL	0.39		<u>D</u> .	Prepared	10/04/19 23:46 10/04/19 23:46 Analyzed	1 1 Dil Fac	
97 101 99 Compo Result ND		75 - 120 80 - 120 C/MS <u>RL</u> 3.0	0.39 0.22	ug/L	<u>D</u>	Prepared	10/04/19 23:46 10/04/19 23:46 Analyzed 10/03/19 20:31	1 1 Dil Fac	
97 101 99 Compo Result ND ND		75 - 120 80 - 120 C/MS <u>RL</u> 3.0 2.0	0.39 0.22 0.29	ug/L ug/L	<u> </u>	Prepared	10/04/19 23:46 10/04/19 23:46 Analyzed 10/03/19 20:31 10/03/19 20:31	1 1 Dil Fac 1 1	
97 101 99 Compo Result ND ND ND		75 - 120 80 - 120 C/MS <u>RL</u> 3.0 2.0 3.0	0.39 0.22 0.29 1.1	ug/L ug/L ug/L	<u>D</u> .	Prepared	10/04/19 23:46 10/04/19 23:46 Analyzed 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31	1 1 Dil Fac 1 1	
97 101 99 Compo Result ND ND ND ND		75 - 120 80 - 120 C/MS <u>RL</u> 3.0 2.0 3.0 5.0	0.39 0.22 0.29 1.1 0.41	ug/L ug/L ug/L ug/L	<u>D</u>	Prepared	10/04/19 23:46 10/04/19 23:46 Analyzed 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31	1 1 Dil Fac 1 1 1 1	
97 101 99 Compo Result ND ND ND ND		75 - 120 80 - 120 C/MS <u>RL</u> 3.0 2.0 3.0 5.0 2.0	0.39 0.22 0.29 1.1 0.41 0.33	ug/L ug/L ug/L ug/L ug/L	<u> </u>	Prepared	10/04/19 23:46 10/04/19 23:46 Analyzed 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31	1 1 Dil Fac 1 1 1 1 1	
97 101 99 Compo Result ND ND ND ND ND		75 - 120 80 - 120 C/MS RL 3.0 2.0 3.0 5.0 2.0 2.0 2.0	0.39 0.22 0.29 1.1 0.41 0.33 0.61	ug/L ug/L ug/L ug/L ug/L ug/L	<u>D</u>	Prepared	10/04/19 23:46 10/04/19 23:46 Analyzed 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31 10/03/19 20:31	1 1 Dil Fac 1 1 1 1 1 1	

10/03/19 20:31

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10/03/19 20:31

10/03/19 20:31

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2.0

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3.0

2.0

2.0

3.0

3.0

2.0

3.0

2.0

0.46 ug/L

0.18 ug/L

0.55 ug/L

0.18 ug/L

0.35 ug/L

0.32 ug/L

0.51 ug/L

0.51 ug/L

0.28 ug/L

0.43 ug/L

Client Sample ID: Kobuk-MW2-919 Date Collected: 09/23/19 12:30 Date Received: 09/25/19 12:30

Lab Sample ID: 580-89500-2

Matrix: Water

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Method: 8260C - Volatile O Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromochloromethane	ND		2.0	0.29	ug/L			10/03/19 20:31	1
Carbon tetrachloride	ND		3.0	0.30	ug/L			10/03/19 20:31	1
Chlorobenzene	ND		2.0	0.44	ug/L			10/03/19 20:31	1
Chloroethane	ND		5.0	1.1	ug/L			10/03/19 20:31	1
Chloromethane	ND		20	5.4	ug/L			10/03/19 20:31	1
Dichlorodifluoromethane	ND		10	2.3	ug/L			10/03/19 20:31	1
Ethylbenzene	9.8		3.0	0.50	ug/L			10/03/19 20:31	1
Isopropylbenzene	1.9	J	2.0	0.51	ug/L			10/03/19 20:31	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			10/03/19 20:31	1
Methylene Chloride	ND		5.0	1.4	ug/L			10/03/19 20:31	1
m-Xylene & p-Xylene	31		3.0	0.75	ug/L			10/03/19 20:31	1
n-Butylbenzene	ND		3.0	0.44	ug/L			10/03/19 20:31	1
N-Propylbenzene	2.0	J	3.0	0.50	ug/L			10/03/19 20:31	1
o-Xylene	6.7		2.0	0.39	ug/L			10/03/19 20:31	1
sec-Butylbenzene	ND		3.0	0.49	ug/L			10/03/19 20:31	1
Styrene	ND		5.0	1.0	ug/L			10/03/19 20:31	1
t-Butylbenzene	ND		3.0	0.58	ug/L			10/03/19 20:31	1
Toluene	1.5	J	2.0	0.39	ug/L			10/03/19 20:31	1
trans-1,2-Dichloroethene	ND		3.0	0.39	ug/L			10/03/19 20:31	1
Trichlorofluoromethane	ND		3.0	0.63	ug/L			10/03/19 20:31	1
cis-1,2-Dichloroethene	ND		3.0	0.69	ug/L			10/03/19 20:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		80 - 126			-		10/03/19 20:31	1
4-Bromofluorobenzene (Surr)	96		80 - 120					10/03/19 20:31	1
Dibromofluoromethane (Surr)	96		80 - 120					10/03/19 20:31	1
Toluene-d8 (Surr)	104		80 - 120					10/03/19 20:31	1
Trifluorotoluene (Surr)	96		80 - 120					10/03/19 20:31	1

Method: 8270D	SIM - Semivolatile Or	ganic Compounds	(GC/MS SIM)
		guine compounds	

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	4.1		0.090	0.053	ug/L		09/27/19 13:08	09/28/19 02:53	1
2-Methylnaphthalene	0.24		0.090	0.044	ug/L		09/27/19 13:08	09/28/19 02:53	1
1-Methylnaphthalene	0.62		0.090	0.023	ug/L		09/27/19 13:08	09/28/19 02:53	1
Acenaphthylene	ND		0.090	0.016	ug/L		09/27/19 13:08	09/28/19 02:53	1
Acenaphthene	0.022	J	0.090	0.022	ug/L		09/27/19 13:08	09/28/19 02:53	1
Fluorene	0.023	J	0.090	0.016	ug/L		09/27/19 13:08	09/28/19 02:53	1
Phenanthrene	ND		0.090	0.056	ug/L		09/27/19 13:08	09/28/19 02:53	1
Anthracene	ND		0.090	0.025	ug/L		09/27/19 13:08	09/28/19 02:53	1
Fluoranthene	ND		0.090	0.017	ug/L		09/27/19 13:08	09/28/19 02:53	1
Pyrene	ND		0.090	0.026	ug/L		09/27/19 13:08	09/28/19 02:53	1
Benzo[a]anthracene	ND		0.090	0.012	ug/L		09/27/19 13:08	09/28/19 02:53	1
Chrysene	ND		0.090	0.010	ug/L		09/27/19 13:08	09/28/19 02:53	1
Benzo[b]fluoranthene	ND		0.090	0.011	ug/L		09/27/19 13:08	09/28/19 02:53	1
Benzo[k]fluoranthene	ND		0.090	0.015	ug/L		09/27/19 13:08	09/28/19 02:53	1
Benzo[a]pyrene	ND		0.090	0.012	ug/L		09/27/19 13:08	09/28/19 02:53	1
Indeno[1,2,3-cd]pyrene	ND		0.090	0.022	ug/L		09/27/19 13:08	09/28/19 02:53	1
Dibenz(a,h)anthracene	ND		0.090	0.013	ug/L		09/27/19 13:08	09/28/19 02:53	1
Benzo[g,h,i]perylene	ND		0.090	0.021	ug/L		09/27/19 13:08	09/28/19 02:53	1

Job ID: 580-89500-1

4 5

Client Sample ID: Kobuk-	MW2-919					L	ab Sample	D: 580-89	500-2
Date Collected: 09/23/19 12:30 Date Received: 09/25/19 12:30									: Water
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	67		36 - 126				09/27/19 13:08	09/28/19 02:53	1
2-Fluorobiphenyl (Surr)	71		44 - 120				09/27/19 13:08	09/28/19 02:53	1
p-Terphenyl-d14	85		51 - 121				09/27/19 13:08	09/28/19 02:53	1
- Method: AK101 - Alaska - Gas	soline Range	e Organics	s (GC)						
Analyte	Result	Qualifier	RL	MDL U	Jnit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	0.36		0.25	0.10 n	ng/L			10/03/19 22:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150					10/03/19 22:21	1

Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	Ď	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.36		0.27	0.098	mg/L		10/02/19 12:35	10/03/19 05:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	80		50 - 150				10/02/19 12:35	10/03/19 05:31	1
n-Triacontane-d62	89		50 - 150				10/02/19 12:35	10/03/19 05:31	1

Client Sample ID: Kobuk-MW3-919 Date Collected: 09/23/19 10:30 Date Received: 09/25/19 12:30

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 1,1,1,2-Tetrachloroethane ND 0.50 0.0090 ug/L 10/05/19 00:12 1 1,1,2-Tetrachloroethane ND 0.50 0.049 ug/L 10/05/19 00:12 1 1,1,2-Trichloroethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 1,1-Dichloroethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,2-Dichloroethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,4-Dichlorobethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,4-Dichlorobethane ND 0.50 0.0098 ug/L 10/05/19 00:12 1 2-Hexanone ND 0.50 0.0090 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.013 ug/L 10/05/19 00:12 1 Bromoform	Method: 8260C SIM - Volatil	le Organic Cor	mpounds (C	C/MS)							
1,1,2,2-Tetrachloroethane ND 0.50 0.049 ug/L 10/05/19 00:12 1 1,1,2-Trichloroethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 1,1-Dichloroethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,2-Dichloroethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,2-Dichloroethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,4-Dichlorobenzene ND 0.50 0.014 ug/L 10/05/19 00:12 1 2-Hexanone ND 0.50 0.098 ug/L 10/05/19 00:12 1 Benzene 0.17 J 0.50 0.0090 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.0000 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 I obromothane ND 0.50 0	Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	5
1,1,2-Trichloroethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 1,1-Dichloroethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,2-Dichloroethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,2-Dichloroethane ND 0.50 0.024 ug/L 10/05/19 00:12 1 1,2-Dichloroethane ND 0.50 0.024 ug/L 10/05/19 00:12 1 1,4-Dichloroethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,4-Dichloroethane ND 0.50 0.098 ug/L 10/05/19 00:12 1 2-Hexanone ND 0.50 0.090 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.000 ug/L 10/05/19 00:12 1 Bromoform ND 0.50 0.013 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.012 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50	1,1,1,2-Tetrachloroethane	ND		0.50		-			10/05/19 00:12	1	
1,1-Dichloroethene ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,2-Dibromoethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,2-Dichloroethane ND 0.50 0.024 ug/L 10/05/19 00:12 1 1,4-Dichlorobenzene ND 0.50 0.014 ug/L 10/05/19 00:12 1 2-Hexanone ND 0.50 0.098 ug/L 10/05/19 00:12 1 Benzene 0.17 J 0.50 0.098 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.0060 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.013 ug/L 10/05/19 00:12 1 Bromodichloropethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.026	1,1,2,2-Tetrachloroethane	ND		0.50		-			10/05/19 00:12	1	
1,2-Dibromoethane ND 0.50 0.014 ug/L 10/05/19 00:12 1 1,2-Dichloroethane ND 0.50 0.024 ug/L 10/05/19 00:12 1 1,4-Dichlorobenzene ND 0.50 0.014 ug/L 10/05/19 00:12 1 2-Hexanone ND 0.50 0.098 ug/L 10/05/19 00:12 1 Benzene 0.17 J 0.50 0.090 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.0060 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.0060 ug/L 10/05/19 00:12 1 Bromoform ND 0.50 0.013 ug/L 10/05/19 00:12 1 Bromomethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.016 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 <td>1,1,2-Trichloroethane</td> <td>ND</td> <td></td> <td>0.50</td> <td>0.017</td> <td>ug/L</td> <td></td> <td></td> <td>10/05/19 00:12</td> <td>1</td> <td></td>	1,1,2-Trichloroethane	ND		0.50	0.017	ug/L			10/05/19 00:12	1	
1,2-Dichloroethane ND 0.50 0.024 ug/L 10/05/19 00:12 1 1,4-Dichlorobenzene ND 0.50 0.014 ug/L 10/05/19 00:12 1 2-Hexanone ND 0.50 0.098 ug/L 10/05/19 00:12 1 Benzene 0.17 J 0.50 0.0090 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.0060 ug/L 10/05/19 00:12 1 Bromoform ND 0.50 0.013 ug/L 10/05/19 00:12 1 Bromomethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.012 ug/L 10/05/19 00:12 1 Cisi-1,3-Dichloropropene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Naphthalene 35 B	1,1-Dichloroethene	ND		0.50	0.014	ug/L			10/05/19 00:12	1	
1,4-Dichlorobenzene ND 0.50 0.014 ug/L 10/05/19 00:12 1 2-Hexanone ND 0.50 0.098 ug/L 10/05/19 00:12 1 Benzene 0.17 J 0.50 0.0090 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.0060 ug/L 10/05/19 00:12 1 Bromoform ND 0.50 0.013 ug/L 10/05/19 00:12 1 Bromomethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Bromomethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Dibromomethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Naphthalene 35 B 0.50 <td>1,2-Dibromoethane</td> <td>ND</td> <td></td> <td>0.50</td> <td>0.014</td> <td>ug/L</td> <td></td> <td></td> <td>10/05/19 00:12</td> <td>1</td> <td></td>	1,2-Dibromoethane	ND		0.50	0.014	ug/L			10/05/19 00:12	1	
2-Hexanone ND 0.50 0.098 ug/L 10/05/19 00:12 1 Benzene 0.17 J 0.50 0.0090 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.0060 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.013 ug/L 10/05/19 00:12 1 Bromodethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Bromomethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.009 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Naphthalene 35 B 0.50 0.017 <	1,2-Dichloroethane	ND		0.50	0.024	ug/L			10/05/19 00:12	1	9
Benzene 0.17 J 0.50 0.0090 ug/L 10/05/19 00:12 1 Bromodichloromethane ND 0.50 0.0060 ug/L 10/05/19 00:12 1 Bromoform ND 0.50 0.013 ug/L 10/05/19 00:12 1 Bromomethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.026 ug/L 10/05/19 00:12 1 cis-1,3-Dichloropropene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 0.013 ug/L 10/05/19 00:12 1 Naphthalene 35 B 0.50 0.013 ug/L 10/05/19 00:12 1 Trans-1,3-Dichloropropene ND 0.50 0.017 ug/L	1,4-Dichlorobenzene	ND		0.50	0.014	ug/L			10/05/19 00:12	1	
Bromodichloromethane ND 0.50 0.0060 ug/L 10/05/19 00:12 1 Bromoform ND 0.50 0.013 ug/L 10/05/19 00:12 1 Bromomethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.0090 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.0090 ug/L 10/05/19 00:12 1 cis-1,3-Dichloropropene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Dibromomethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Naphthalene ND 0.50 0.013 ug/L 10/05/19 00:12 1 Tetrachloroethene ND 0.50 0.013 ug/L 10/05/19 00:12 1 Trans-1,3-Dichloropropene ND 0.50 0.017 ug/L	2-Hexanone	ND		0.50	0.098	ug/L			10/05/19 00:12	1	e
Bromoform ND 0.50 0.013 ug/L 10/05/19 00:12 1 Bromomethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.0090 ug/L 10/05/19 00:12 1 cis-1,3-Dichloropropene ND 0.50 0.0026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Naphthalene 35 B 0.50 0.013 ug/L 10/05/19 00:12 1 Tetrachloroethene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Trans-1,3-Dichloropropene ND 0.50 0.017<	Benzene	0.17	J	0.50	0.0090	ug/L			10/05/19 00:12	1	
Bromomethane ND 0.50 0.012 ug/L 10/05/19 00:12 1 Chloroform ND 0.50 0.0090 ug/L 10/05/19 1 1 cis-1,3-Dichloropropene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 12 1 Dibromomethane ND 0.50 0.017 ug/L 10/05/19 12 1 Dibromomethane ND 0.50 0.017 ug/L 10/05/19 12 1 Hexachlorobutadiene ND 0.50 0.017 ug/L 10/05/19 12 1 Naphthalene 35 B 0.50 0.013 ug/L 10/05/19 12 1 Tetrachloroethene ND 0.50 0.017 ug/L 10/05/19 1 1 Trans-1,3-Dichloropropene ND 0.50 0.027 ug/L 10/05/19 1<	Bromodichloromethane	ND		0.50	0.0060	ug/L			10/05/19 00:12	1	
Chloroform ND 0.50 0.0090 ug/L 10/05/19 00:12 1 cis-1,3-Dichloropropene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Dibromomethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Naphthalene 35 B 0.50 0.013 ug/L 10/05/19 00:12 1 Tetrachloroethene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Trans-1,3-Dichloropropene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.027 ug/L 10/05/19 00:12 1	Bromoform	ND		0.50	0.013	ug/L			10/05/19 00:12	1	
cis-1,3-Dichloropropene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Dibromochloromethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Dibromomethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Naphthalene 35 B 0.50 0.013 ug/L 10/05/19 00:12 1 Tetrachloroethene ND 0.50 0.017 ug/L 10/05/19 00:12 1 trans-1,3-Dichloropropene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.027 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.090 ug/L 10/05/19 00:12 1	Bromomethane	ND		0.50	0.012	ug/L			10/05/19 00:12	1	
Dibromochloromethane ND 0.50 0.016 ug/L 10/05/19 00:12 1 Dibromomethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Naphthalene 35 B 0.50 0.013 ug/L 10/05/19 00:12 1 Tetrachloroethene ND 0.50 0.017 ug/L 10/05/19 00:12 1 trans-1,3-Dichloropropene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.027 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.0090 ug/L 10/05/19 00:12 1	Chloroform	ND		0.50	0.0090	ug/L			10/05/19 00:12	1	
Dibromomethane ND 0.50 0.017 ug/L 10/05/19 00:12 1 Hexachlorobutadiene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Naphthalene 35 B 0.50 0.017 ug/L 10/05/19 00:12 1 Tetrachloroethene ND 0.50 0.017 ug/L 10/05/19 00:12 1 trans-1,3-Dichloropropene ND 0.50 0.017 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.027 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.0090 ug/L 10/05/19 00:12 1	cis-1,3-Dichloropropene	ND		0.50	0.026	ug/L			10/05/19 00:12	1	
Hexachlorobutadiene ND 0.50 0.026 ug/L 10/05/19 00:12 1 Naphthalene 35 B 0.50 0.013 ug/L 10/05/19 00:12 1 Tetrachloroethene ND 0.50 0.017 ug/L 10/05/19 00:12 1 trans-1,3-Dichloropropene ND 0.50 0.027 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.027 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.090 ug/L 10/05/19 00:12 1	Dibromochloromethane	ND		0.50	0.016	ug/L			10/05/19 00:12	1	
Naphthalene 35 B 0.50 0.013 ug/L 10/05/19 00:12 1 Tetrachloroethene ND 0.50 0.017 ug/L 10/05/19 00:12 1 trans-1,3-Dichloropropene ND 0.50 0.027 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.009 ug/L 10/05/19 00:12 1	Dibromomethane	ND		0.50	0.017	ug/L			10/05/19 00:12	1	
Tetrachloroethene ND 0.50 0.017 ug/L 10/05/19 00:12 1 trans-1,3-Dichloropropene ND 0.50 0.027 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.0090 ug/L 10/05/19 00:12 1	Hexachlorobutadiene	ND		0.50	0.026	ug/L			10/05/19 00:12	1	
trans-1,3-Dichloropropene ND 0.50 0.027 ug/L 10/05/19 00:12 1 Trichloroethene ND 0.50 0.0090 ug/L 10/05/19 00:12 1	Naphthalene	35	в	0.50	0.013	ug/L			10/05/19 00:12	1	
Trichloroethene ND 0.50 0.0090 ug/L 10/05/19 00:12 1	Tetrachloroethene	ND		0.50	0.017	ug/L			10/05/19 00:12	1	
	trans-1,3-Dichloropropene	ND		0.50	0.027	ug/L			10/05/19 00:12	1	
	Trichloroethene	ND		0.50	0.0090	ug/L			10/05/19 00:12	1	
	Vinyl chloride	ND		0.50					10/05/19 00:12	1	

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		48 - 150		10/05/19 00:12	1
4-Bromofluorobenzene (Surr)	105		75 - 120		10/05/19 00:12	1
Dibromofluoromethane (Surr)	96		80 - 120		10/05/19 00:12	1
Toluene-d8 (Surr)	102		75 - 120		10/05/19 00:12	1
Trifluorotoluene (Surr)	98		80 - 120		10/05/19 00:12	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	3.0	0.39	ug/L			10/03/19 20:56	1
1,1-Dichloroethane	ND	2.0	0.22	ug/L			10/03/19 20:56	1
1,1-Dichloropropene	ND	3.0	0.29	ug/L			10/03/19 20:56	1
1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/L			10/03/19 20:56	1
1,2,3-Trichloropropane	ND	2.0	0.41	ug/L			10/03/19 20:56	1
1,2,4-Trichlorobenzene	ND	2.0	0.33	ug/L			10/03/19 20:56	1
1,2,4-Trimethylbenzene	48	3.0	0.61	ug/L			10/03/19 20:56	1
1,2-Dibromo-3-Chloropropane	ND	10	1.8	ug/L			10/03/19 20:56	1
1,2-Dichlorobenzene	ND	2.0	0.46	ug/L			10/03/19 20:56	1
1,2-Dichloropropane	ND	1.0	0.18	ug/L			10/03/19 20:56	1
1,3,5-Trimethylbenzene	23	3.0	0.55	ug/L			10/03/19 20:56	1
1,3-Dichlorobenzene	ND	2.0	0.18	ug/L			10/03/19 20:56	1
1,3-Dichloropropane	ND	2.0	0.35	ug/L			10/03/19 20:56	1
2,2-Dichloropropane	ND	3.0	0.32	ug/L			10/03/19 20:56	1
2-Chlorotoluene	ND	3.0	0.51	ug/L			10/03/19 20:56	1
4-Chlorotoluene	ND	2.0	0.51	ug/L			10/03/19 20:56	1
4-Isopropyltoluene	3.0	3.0	0.28	ug/L			10/03/19 20:56	1
Bromobenzene	ND	2.0	0.43	ug/L			10/03/19 20:56	1

Lab Sample ID: 580-89500-3

Matrix: Water

Client Sample ID: Kobuk-MW3-919 Date Collected: 09/23/19 10:30 Date Received: 09/25/19 12:30

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Lab Sample ID: 580-89500-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromochloromethane	ND		2.0	0.29	ug/L			10/03/19 20:56	1
Carbon tetrachloride	ND		3.0	0.30	ug/L			10/03/19 20:56	1
Chlorobenzene	ND		2.0	0.44	ug/L			10/03/19 20:56	1
Chloroethane	ND		5.0	1.1	ug/L			10/03/19 20:56	1
Chloromethane	ND		20	5.4	ug/L			10/03/19 20:56	1
Dichlorodifluoromethane	ND		10	2.3	ug/L			10/03/19 20:56	1
Ethylbenzene	9.3		3.0	0.50	ug/L			10/03/19 20:56	1
lsopropylbenzene	6.6		2.0	0.51	ug/L			10/03/19 20:56	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			10/03/19 20:56	1
Methylene Chloride	ND		5.0	1.4	ug/L			10/03/19 20:56	1
m-Xylene & p-Xylene	38		3.0	0.75	ug/L			10/03/19 20:56	1
n-Butylbenzene	ND		3.0	0.44	ug/L			10/03/19 20:56	1
N-Propylbenzene	9.7		3.0	0.50	ug/L			10/03/19 20:56	1
o-Xylene	12		2.0	0.39	ug/L			10/03/19 20:56	1
sec-Butylbenzene	2.2	J	3.0	0.49	ug/L			10/03/19 20:56	1
Styrene	ND		5.0	1.0	ug/L			10/03/19 20:56	1
t-Butylbenzene	ND		3.0	0.58	ug/L			10/03/19 20:56	1
Toluene	0.79	J	2.0	0.39	ug/L			10/03/19 20:56	1
trans-1,2-Dichloroethene	ND		3.0	0.39	ug/L			10/03/19 20:56	1
Trichlorofluoromethane	ND		3.0	0.63	ug/L			10/03/19 20:56	1
cis-1,2-Dichloroethene	ND		3.0	0.69	ug/L			10/03/19 20:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		80 - 126			-		10/03/19 20:56	1
4-Bromofluorobenzene (Surr)	99		80 - 120					10/03/19 20:56	1
Dibromofluoromethane (Surr)	99		80 - 120					10/03/19 20:56	1
Toluene-d8 (Surr)	101		80 - 120					10/03/19 20:56	1
Trifluorotoluene (Surr)	98		80 - 120					10/03/19 20:56	1

Method: 8270D	SIM - Semivolatile (Organic Comp	ounds (GC/MS SIM)
		organic comp	

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	14	0.11	0.068	ug/L		09/27/19 13:08	09/28/19 03:16	1
2-Methylnaphthalene	14	0.11	0.056	ug/L		09/27/19 13:08	09/28/19 03:16	1
1-Methylnaphthalene	16	0.11	0.029	ug/L		09/27/19 13:08	09/28/19 03:16	1
Acenaphthylene	0.089 J	0.11	0.020	ug/L		09/27/19 13:08	09/28/19 03:16	1
Acenaphthene	0.41	0.11	0.028	ug/L		09/27/19 13:08	09/28/19 03:16	1
Fluorene	1.1	0.11	0.020	ug/L		09/27/19 13:08	09/28/19 03:16	1
Phenanthrene	0.35	0.11	0.071	ug/L		09/27/19 13:08	09/28/19 03:16	1
Anthracene	0.046 J	0.11	0.032	ug/L		09/27/19 13:08	09/28/19 03:16	1
Fluoranthene	ND	0.11	0.022	ug/L		09/27/19 13:08	09/28/19 03:16	1
Pyrene	ND	0.11	0.033	ug/L		09/27/19 13:08	09/28/19 03:16	1
Benzo[a]anthracene	ND	0.11	0.015	ug/L		09/27/19 13:08	09/28/19 03:16	1
Chrysene	ND	0.11	0.013	ug/L		09/27/19 13:08	09/28/19 03:16	1
Benzo[b]fluoranthene	ND	0.11	0.014	ug/L		09/27/19 13:08	09/28/19 03:16	1
Benzo[k]fluoranthene	ND	0.11	0.019	ug/L		09/27/19 13:08	09/28/19 03:16	1
Benzo[a]pyrene	ND	0.11	0.015	ug/L		09/27/19 13:08	09/28/19 03:16	1
Indeno[1,2,3-cd]pyrene	ND	0.11	0.028	ug/L		09/27/19 13:08	09/28/19 03:16	1
Dibenz(a,h)anthracene	ND	0.11	0.017	ug/L		09/27/19 13:08	09/28/19 03:16	1
Benzo[g,h,i]perylene	ND	0.11	0.027	ug/L		09/27/19 13:08	09/28/19 03:16	1

Job ID: 580-89500-1

Client Sample ID: Kobuk-I Date Collected: 09/23/19 10:30 Date Received: 09/25/19 12:30	MW3-919				L	ab Sample.	D: 580-89 ID: 580-89 Matrix	500-3 : Water
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	61		36 - 126			09/27/19 13:08	09/28/19 03:16	1
2-Fluorobiphenyl (Surr)	76		44 - 120			09/27/19 13:08	09/28/19 03:16	1
p-Terphenyl-d14	92		51 - 121			09/27/19 13:08	09/28/19 03:16	1
- Method: AK101 - Alaska - Gas Analyte		e Organics Qualifier	s (GC) RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	0.18	J	0.25	0.10 mg/L			10/03/19 22:45	1

-C6-C10					
Surrogate 4-Bromofluorobenzene (Surr)	%Recovery Qualifier	Limits	Prepared	Analyzed 10/03/19 22:45	Dil Fac

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	1.7		0.28	0.10	mg/L		10/02/19 12:35	10/03/19 05:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150				10/02/19 12:35	10/03/19 05:52	1
n-Triacontane-d62	96		50 - 150				10/02/19 12:35	10/03/19 05:52	1

Eurofins TestAmerica, Seattle

Client Sample ID: Kobuk-MW12-919 Date Collected: 09/23/19 12:45 Date Received: 09/25/19 12:30

Job ID	· 580-8	19500

Lab Sample ID: 580-89500-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.0090	ug/L			10/05/19 00:38	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.049	ug/L			10/05/19 00:38	1
1,1,2-Trichloroethane	ND		0.50	0.017	ug/L			10/05/19 00:38	1
1,1-Dichloroethene	0.11	J	0.50	0.014	ug/L			10/05/19 00:38	1
1,2-Dibromoethane	ND		0.50	0.014	ug/L			10/05/19 00:38	1
1,2-Dichloroethane	0.17	J	0.50	0.024	ug/L			10/05/19 00:38	1
1,4-Dichlorobenzene	ND		0.50	0.014	ug/L			10/05/19 00:38	1
2-Hexanone	ND		0.50	0.098	ug/L			10/05/19 00:38	1
Benzene	14		0.50	0.0090	ug/L			10/05/19 00:38	1
Bromodichloromethane	ND		0.50	0.0060	ug/L			10/05/19 00:38	1
Bromoform	ND		0.50	0.013	ug/L			10/05/19 00:38	1
Bromomethane	ND		0.50	0.012	ug/L			10/05/19 00:38	1
Chloroform	ND		0.50	0.0090	ug/L			10/05/19 00:38	1
cis-1,3-Dichloropropene	ND		0.50	0.026	ug/L			10/05/19 00:38	1
Dibromochloromethane	ND		0.50	0.016	ug/L			10/05/19 00:38	1
Dibromomethane	ND		0.50	0.017	ug/L			10/05/19 00:38	1
Hexachlorobutadiene	ND		0.50	0.026	ug/L			10/05/19 00:38	1
Naphthalene	8.0	В	0.50	0.013	ug/L			10/05/19 00:38	1
Fetrachloroethene	0.15	J	0.50	0.017	ug/L			10/05/19 00:38	1
rans-1,3-Dichloropropene	ND		0.50	0.027	ug/L			10/05/19 00:38	1
Frichloroethene	ND		0.50	0.0090	ug/L			10/05/19 00:38	1
Vinyl chloride	ND		0.50	0.013	ug/L			10/05/19 00:38	1

Surrogate	%Recovery Qualit	fier Limits	Prepared Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101	48 - 150	10/05/19 00:38	1
4-Bromofluorobenzene (Surr)	107	75 - 120	10/05/19 00:38	1
Dibromofluoromethane (Surr)	100	80 - 120	10/05/19 00:38	1
Toluene-d8 (Surr)	99	75 - 120	10/05/19 00:38	1
Trifluorotoluene (Surr)	99	80 - 120	10/05/19 00:38	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	3.0	0.39	ug/L			10/03/19 18:25	1
1,1-Dichloroethane	ND	2.0	0.22	ug/L			10/03/19 18:25	1
1,1-Dichloropropene	ND	3.0	0.29	ug/L			10/03/19 18:25	1
1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/L			10/03/19 18:25	1
1,2,3-Trichloropropane	ND	2.0	0.41	ug/L			10/03/19 18:25	1
1,2,4-Trichlorobenzene	ND	2.0	0.33	ug/L			10/03/19 18:25	1
1,2,4-Trimethylbenzene	7.1	3.0	0.61	ug/L			10/03/19 18:25	1
1,2-Dibromo-3-Chloropropane	ND	10	1.8	ug/L			10/03/19 18:25	1
1,2-Dichlorobenzene	ND	2.0	0.46	ug/L			10/03/19 18:25	1
1,2-Dichloropropane	ND	1.0	0.18	ug/L			10/03/19 18:25	1
1,3,5-Trimethylbenzene	2.8 J	3.0	0.55	ug/L			10/03/19 18:25	1
1,3-Dichlorobenzene	ND	2.0	0.18	ug/L			10/03/19 18:25	1
1,3-Dichloropropane	ND	2.0	0.35	ug/L			10/03/19 18:25	1
2,2-Dichloropropane	ND	3.0	0.32	ug/L			10/03/19 18:25	1
2-Chlorotoluene	ND	3.0	0.51	ug/L			10/03/19 18:25	1
4-Chlorotoluene	ND	2.0	0.51	ug/L			10/03/19 18:25	1
4-Isopropyltoluene	0.62 J	3.0	0.28	ug/L			10/03/19 18:25	1
Bromobenzene	ND	2.0	0.43	ug/L			10/03/19 18:25	1

Eurofins TestAmerica, Seattle

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Client Sample ID: Kobuk-MW12-919 Date Collected: 09/23/19 12:45 Date Received: 09/25/19 12:30

Job ID: 580-89500-1

Lab Sample ID: 580-89500-4

Matrix: Water

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Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromochloromethane	ND		2.0	0.29	ug/L			10/03/19 18:25	1
Carbon tetrachloride	ND		3.0	0.30	ug/L			10/03/19 18:25	1
Chlorobenzene	ND		2.0	0.44	ug/L			10/03/19 18:25	1
Chloroethane	ND		5.0	1.1	ug/L			10/03/19 18:25	1
Chloromethane	ND		20	5.4	ug/L			10/03/19 18:25	1
Dichlorodifluoromethane	ND		10	2.3	ug/L			10/03/19 18:25	
Ethylbenzene	9.2		3.0	0.50	ug/L			10/03/19 18:25	
Isopropylbenzene	2.1		2.0	0.51	ug/L			10/03/19 18:25	
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			10/03/19 18:25	
Methylene Chloride	ND		5.0	1.4	ug/L			10/03/19 18:25	
m-Xylene & p-Xylene	31		3.0	0.75	ug/L			10/03/19 18:25	
n-Butylbenzene	0.48	J	3.0	0.44	ug/L			10/03/19 18:25	
N-Propylbenzene	2.1	J	3.0	0.50	ug/L			10/03/19 18:25	
o-Xylene	6.5		2.0	0.39	ug/L			10/03/19 18:25	
sec-Butylbenzene	ND		3.0	0.49	ug/L			10/03/19 18:25	
Styrene	ND		5.0	1.0	ug/L			10/03/19 18:25	
t-Butylbenzene	ND		3.0	0.58	ug/L			10/03/19 18:25	
Toluene	1.8	J	2.0	0.39	ug/L			10/03/19 18:25	
trans-1,2-Dichloroethene	ND		3.0	0.39	ug/L			10/03/19 18:25	
Trichlorofluoromethane	ND		3.0	0.63	ug/L			10/03/19 18:25	
cis-1,2-Dichloroethene	ND		3.0	0.69	ug/L			10/03/19 18:25	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
1,2-Dichloroethane-d4 (Surr)			80 - 126			-		10/03/19 18:25	
4-Bromofluorobenzene (Surr)	102		80 - 120					10/03/19 18:25	
Dibromofluoromethane (Surr)	95		80 - 120					10/03/19 18:25	
Toluene-d8 (Surr)	102		80 - 120					10/03/19 18:25	
Trifluorotoluene (Surr)	99		80 - 120					10/03/19 18:25	

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	3.7		0.090	0.053	ug/L		09/27/19 13:08	09/28/19 03:39	1
2-Methylnaphthalene	0.19		0.090	0.044	ug/L		09/27/19 13:08	09/28/19 03:39	1
1-Methylnaphthalene	0.56		0.090	0.023	ug/L		09/27/19 13:08	09/28/19 03:39	1
Acenaphthylene	ND		0.090	0.016	ug/L		09/27/19 13:08	09/28/19 03:39	1
Acenaphthene	ND		0.090	0.022	ug/L		09/27/19 13:08	09/28/19 03:39	1
Fluorene	0.022	J	0.090	0.016	ug/L		09/27/19 13:08	09/28/19 03:39	1
Phenanthrene	ND		0.090	0.056	ug/L		09/27/19 13:08	09/28/19 03:39	1
Anthracene	ND		0.090	0.025	ug/L		09/27/19 13:08	09/28/19 03:39	1
Fluoranthene	ND		0.090	0.017	ug/L		09/27/19 13:08	09/28/19 03:39	1
Pyrene	ND		0.090	0.026	ug/L		09/27/19 13:08	09/28/19 03:39	1
Benzo[a]anthracene	ND		0.090	0.012	ug/L		09/27/19 13:08	09/28/19 03:39	1
Chrysene	ND		0.090	0.010	ug/L		09/27/19 13:08	09/28/19 03:39	1
Benzo[b]fluoranthene	ND		0.090	0.011	ug/L		09/27/19 13:08	09/28/19 03:39	1
Benzo[k]fluoranthene	ND		0.090	0.015	ug/L		09/27/19 13:08	09/28/19 03:39	1
Benzo[a]pyrene	ND		0.090	0.012	ug/L		09/27/19 13:08	09/28/19 03:39	1
Indeno[1,2,3-cd]pyrene	ND		0.090	0.022	ug/L		09/27/19 13:08	09/28/19 03:39	1
Dibenz(a,h)anthracene	ND		0.090	0.013	ug/L		09/27/19 13:08	09/28/19 03:39	1
Benzo[g,h,i]perylene	ND		0.090	0.021	ug/L		09/27/19 13:08	09/28/19 03:39	1

Client Sample ID: Kobuk-MW12-919

Job ID: 580-89500-1

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Lab Sample ID: 580-89500-4 Matrix: Water

Date Collected: 09/23/19 12:45 Date Received: 09/25/19 12:30

Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Nitrobenzene-d5	64		36 - 126				09/27/19 13:08	09/28/19 03:39	1
2-Fluorobiphenyl (Surr)	68		44 - 120				09/27/19 13:08	09/28/19 03:39	1
p-Terphenyl-d14	90		51 - 121				09/27/19 13:08	09/28/19 03:39	1
Method: AK101 - Alaska - Gas	soline Rang	e Organics	s (GC)						
Analyte	•	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO)	0.21	J	0.25	0.10	mg/L			10/03/19 23:10	1
-C6-C10									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150					10/03/19 23:10	1
Mathadi AK402 8 402 Alaak			nice ⁹ Decid	uel Den	~~ 0~~~	-i (C			
Method: AK102 & 103 - Alask Analyte		Qualifier	RL		ge Orgai Unit	nics (C D	Prepared	Analyzed	Dil Fac

· ···· ·						
Diesel Range Organics (DRO) (C10-C25)	0.38	0.28	0.10 mg/L	10/02/19 12:35	10/03/19 06:13	1
Surrogate	%Recoverv Qualifier	Limits		Prepared	Analyzed	Dil Fac
Carregues	,,					
o-Terphenyl	83	50 - 150		10/02/19 12:35	10/03/19 06:13	1

Client Sample Results

Client Sample ID: Trip Blank Date Collected: 09/23/19 00:01 Date Received: 09/25/19 12:30

Job	ID:	580-	895	-00

Lab Sample ID: 580-89500-5

Matrix: Water

Analyte	e Organic Compounds (G Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND	0.50	0.0090	ug/L			10/02/19 03:01	1
1,1,2,2-Tetrachloroethane	ND	0.50	0.049	ug/L			10/02/19 03:01	1
1,1,2-Trichloroethane	ND	0.50	0.017	ug/L			10/02/19 03:01	1
1,1-Dichloroethene	ND	0.50	0.014	ug/L			10/02/19 03:01	1
1,2-Dibromoethane	ND	0.50	0.014	ug/L			10/02/19 03:01	1
1,2-Dichloroethane	ND	0.50	0.024	ug/L			10/02/19 03:01	1
1,4-Dichlorobenzene	ND	0.50	0.014	ug/L			10/02/19 03:01	1
2-Hexanone	ND	0.50	0.098	ug/L			10/02/19 03:01	1
Benzene	ND	0.50	0.0090	ug/L			10/02/19 03:01	1
Bromodichloromethane	ND	0.50	0.0060	ug/L			10/02/19 03:01	1
Bromoform	ND	0.50	0.013	ug/L			10/02/19 03:01	1
Bromomethane	ND	0.50	0.012	ug/L			10/02/19 03:01	1
Chloroform	ND	0.50	0.0090	ug/L			10/02/19 03:01	1
cis-1,3-Dichloropropene	ND	0.50	0.026	ug/L			10/02/19 03:01	1
Dibromochloromethane	ND	0.50	0.016	ug/L			10/02/19 03:01	1
Dibromomethane	ND	0.50	0.017	ug/L			10/02/19 03:01	1
Hexachlorobutadiene	ND	0.50	0.026	ug/L			10/02/19 03:01	1
Naphthalene	0.12 JB	0.50	0.013	ug/L			10/02/19 03:01	1
Tetrachloroethene	ND	0.50	0.017	ug/L			10/02/19 03:01	1
trans-1,3-Dichloropropene	ND	0.50	0.027	ug/L			10/02/19 03:01	1
Trichloroethene	ND	0.50	0.0090	ug/L			10/02/19 03:01	1
Vinyl chloride	ND	0.50	0.013	ug/L			10/02/19 03:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		48 - 150		10/02/19 03:01	1
4-Bromofluorobenzene (Surr)	96		75 - 120		10/02/19 03:01	1
Dibromofluoromethane (Surr)	98		80 - 120		10/02/19 03:01	1
Toluene-d8 (Surr)	102		75 - 120		10/02/19 03:01	1
Trifluorotoluene (Surr)	99		80 - 120		10/02/19 03:01	1

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND	3.0	0.39	ug/L			10/03/19 15:07	1
1,1-Dichloroethane	ND	2.0	0.22	ug/L			10/03/19 15:07	1
1,1-Dichloropropene	ND	3.0	0.29	ug/L			10/03/19 15:07	1
1,2,3-Trichlorobenzene	ND	5.0	1.1	ug/L			10/03/19 15:07	1
1,2,3-Trichloropropane	ND	2.0	0.41	ug/L			10/03/19 15:07	1
1,2,4-Trichlorobenzene	ND	2.0	0.33	ug/L			10/03/19 15:07	1
1,2,4-Trimethylbenzene	ND	3.0	0.61	ug/L			10/03/19 15:07	1
1,2-Dibromo-3-Chloropropane	ND	10	1.8	ug/L			10/03/19 15:07	1
1,2-Dichlorobenzene	ND	2.0	0.46	ug/L			10/03/19 15:07	1
1,2-Dichloropropane	ND	1.0	0.18	ug/L			10/03/19 15:07	1
1,3,5-Trimethylbenzene	ND	3.0	0.55	ug/L			10/03/19 15:07	1
1,3-Dichlorobenzene	ND	2.0	0.18	ug/L			10/03/19 15:07	1
1,3-Dichloropropane	ND	2.0	0.35	ug/L			10/03/19 15:07	1
2,2-Dichloropropane	ND	3.0	0.32	ug/L			10/03/19 15:07	1
2-Chlorotoluene	ND	3.0	0.51	ug/L			10/03/19 15:07	1
4-Chlorotoluene	ND	2.0	0.51	ug/L			10/03/19 15:07	1
4-Isopropyltoluene	ND	3.0	0.28	ug/L			10/03/19 15:07	1
Bromobenzene	ND	2.0	0.43	ug/L			10/03/19 15:07	1

Eurofins TestAmerica, Seattle

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Client Sample ID: Trip Blank

Date Collected: 09/23/19 00:01

Date Received: 09/25/19 12:30

Job ID: 580-89500-1

Lab Sample ID: 580-89500-5

Matrix: Water

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Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromochloromethane	ND		2.0	0.29	ug/L			10/03/19 15:07	1
Carbon tetrachloride	ND		3.0	0.30	ug/L			10/03/19 15:07	1
Chlorobenzene	ND		2.0	0.44	ug/L			10/03/19 15:07	1
Chloroethane	ND		5.0	1.1	ug/L			10/03/19 15:07	1
Chloromethane	ND		20	5.4	ug/L			10/03/19 15:07	1
Dichlorodifluoromethane	ND		10	2.3	ug/L			10/03/19 15:07	1
Ethylbenzene	ND		3.0	0.50	ug/L			10/03/19 15:07	1
Isopropylbenzene	ND		2.0	0.51	ug/L			10/03/19 15:07	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			10/03/19 15:07	1
Methylene Chloride	ND		5.0	1.4	ug/L			10/03/19 15:07	1
m-Xylene & p-Xylene	ND		3.0	0.75	ug/L			10/03/19 15:07	1
n-Butylbenzene	ND		3.0	0.44	ug/L			10/03/19 15:07	1
N-Propylbenzene	ND		3.0	0.50	ug/L			10/03/19 15:07	1
o-Xylene	ND		2.0	0.39	ug/L			10/03/19 15:07	1
sec-Butylbenzene	ND		3.0	0.49	ug/L			10/03/19 15:07	1
Styrene	ND		5.0	1.0	ug/L			10/03/19 15:07	1
t-Butylbenzene	ND		3.0	0.58	ug/L			10/03/19 15:07	1
Toluene	ND		2.0	0.39	ug/L			10/03/19 15:07	1
trans-1,2-Dichloroethene	ND		3.0	0.39	ug/L			10/03/19 15:07	1
Trichlorofluoromethane	ND		3.0	0.63	ug/L			10/03/19 15:07	1
cis-1,2-Dichloroethene	ND		3.0	0.69	ug/L			10/03/19 15:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 126					10/03/19 15:07	1
4-Bromofluorobenzene (Surr)	99		80 - 120					10/03/19 15:07	1
Dibromofluoromethane (Surr)	94		80 - 120					10/03/19 15:07	1
Toluene-d8 (Surr)	104		80 - 120					10/03/19 15:07	1
Trifluorotoluene (Surr)	101		80 - 120					10/03/19 15:07	1
Method: AK101 - Alaska - Ga	asoline Rang	e Organics	s (GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25	0.10	mg/L			09/30/19 15:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		50 - 150					09/30/19 15:17	1

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Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-313170/6 **Matrix: Water** Analy

Toluene-d8 (Surr)

Trifluorotoluene (Surr)

Client Sample ID: Method Blank Prep Type: Total/NA

Analysis Batch: 313170									
Awalista	MB		Ы	MDI	11		Duomonod	Amelyneed	
Analyte	Result	Qualifier	RL 3.0	MDL	ug/L	D	Prepared	Analyzed 10/03/19 14:42	Dil Fac
1,1,1-Trichloroethane 1,1-Dichloroethane	ND		3.0 2.0		ug/L ug/L			10/03/19 14:42	1
	ND		2.0 3.0		ug/L			10/03/19 14:42	1
1,1-Dichloropropene					-				
1,2,3-Trichlorobenzene	ND ND		5.0 2.0		ug/L			10/03/19 14:42 10/03/19 14:42	1
1,2,3-Trichloropropane					ug/L				1
1,2,4-Trichlorobenzene	ND		2.0		ug/L			10/03/19 14:42	1
1,2,4-Trimethylbenzene	ND		3.0		ug/L			10/03/19 14:42	1
1,2-Dibromo-3-Chloropropane	ND		10		ug/L			10/03/19 14:42	1
1,2-Dichlorobenzene	ND		2.0		ug/L			10/03/19 14:42	1
1,2-Dichloropropane	ND		1.0		ug/L			10/03/19 14:42	1
1,3,5-Trimethylbenzene	ND		3.0		ug/L			10/03/19 14:42	1
1,3-Dichlorobenzene	ND		2.0		ug/L			10/03/19 14:42	1
1,3-Dichloropropane	ND		2.0		ug/L			10/03/19 14:42	1
2,2-Dichloropropane	ND		3.0		ug/L			10/03/19 14:42	1
2-Chlorotoluene	ND		3.0		ug/L			10/03/19 14:42	1
4-Chlorotoluene	ND		2.0		ug/L			10/03/19 14:42	1
4-Isopropyltoluene	ND		3.0		ug/L			10/03/19 14:42	1
Bromobenzene	ND		2.0		ug/L			10/03/19 14:42	1
Bromochloromethane	ND		2.0		ug/L			10/03/19 14:42	1
Carbon tetrachloride	ND		3.0	0.30	-			10/03/19 14:42	1
Chlorobenzene	ND		2.0	0.44	-			10/03/19 14:42	1
Chloroethane	ND		5.0		ug/L			10/03/19 14:42	1
Chloromethane	ND		20		ug/L			10/03/19 14:42	1
Dichlorodifluoromethane	ND		10		ug/L			10/03/19 14:42	1
Ethylbenzene	ND		3.0		ug/L			10/03/19 14:42	1
Isopropylbenzene	ND		2.0	0.51	-			10/03/19 14:42	1
Methyl tert-butyl ether	ND		2.0		ug/L			10/03/19 14:42	1
Methylene Chloride	ND		5.0		ug/L			10/03/19 14:42	1
m-Xylene & p-Xylene	ND		3.0		ug/L			10/03/19 14:42	1
n-Butylbenzene	ND		3.0		ug/L			10/03/19 14:42	1
N-Propylbenzene	ND		3.0		ug/L			10/03/19 14:42	1
o-Xylene	ND		2.0		ug/L			10/03/19 14:42	1
sec-Butylbenzene	ND		3.0		ug/L			10/03/19 14:42	1
Styrene	ND		5.0		ug/L			10/03/19 14:42	1
t-Butylbenzene	ND		3.0	0.58	ug/L			10/03/19 14:42	1
Toluene	ND		2.0		ug/L			10/03/19 14:42	1
trans-1,2-Dichloroethene	ND		3.0	0.39	ug/L			10/03/19 14:42	1
Trichlorofluoromethane	ND		3.0	0.63	ug/L			10/03/19 14:42	1
cis-1,2-Dichloroethene	ND		3.0	0.69	ug/L			10/03/19 14:42	1
		MB					- -	.	.
Surrogate	%Recovery	Qualifier	Limits			-	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		80 - 126					10/03/19 14:42	1
4-Bromofluorobenzene (Surr)	100		80 - 120					10/03/19 14:42	1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-313170/3 Matrix: Water

Trifluorotoluene (Surr)

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Analysis Batch: 313170									Prep Type. Total
Analyte			Spike Added		LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane			10.0	10.9	Quaimer	ug/L		109	74 - 130
1,1-Dichloroethane			10.0	10.0		ug/L		100	70 - 129
1,1-Dichloropropene			10.0	11.0		ug/L		110	80 - 120
I,2,3-Trichlorobenzene			10.0	10.6		ug/L		106	23 - 150
I,2,3-Trichloropropane			10.0	9.49		ug/L		95	76 - 124
1,2,4-Trichlorobenzene			10.0	10.0		ug/L		100	57 - 140
I,2,4-Trimethylbenzene			10.0	10.0		ug/L		100	80 - 120
1,2-Dibromo-3-Chloropropane			10.0	10.1		ug/L		101	65 - 125
I,2-Dichlorobenzene			10.0	9.56		ug/L		96	80 - 120
I,2-Dichloropropane			10.0	9.62		ug/L		96	72 - 126
,3,5-Trimethylbenzene			10.0	10.1		ug/L		101	80 - 120
1,3-Dichlorobenzene			10.0	9.28		ug/L		93	80 - 120
1,3-Dichloropropane			10.0	9.62		ug/L		96	79 - 120
2,2-Dichloropropane			10.0	9.02 11.2		ug/L ug/L		112	62 - 140
2-Chlorotoluene			10.0	9.87		ug/L ug/L		99	80 - 120
I-Chlorotoluene			10.0	9.87 10.1		ug/L		101	80 - 120
I-Isopropyltoluene			10.0	9.95		ug/L ug/L		100	77 - 120
Bromobenzene			10.0	9.95 9.86		ug/L ug/L		99	80 - 120
Bromochloromethane			10.0	9.80 9.17				99 92	78 - 120
Carbon tetrachloride			10.0	9.17		ug/L ug/L		92 124	78 - 120 72 - 129
				9.59		-		96	80 - 120
Chlorobenzene			10.0	9.59 8.06		ug/L			
Chloroethane			10.0			ug/L		81 05	65 - 132
Chloromethane			10.0	8.48		ug/L		85	52 - 135
Dichlorodifluoromethane			10.0	8.15	J	ug/L		81	20 - 150
Ethylbenzene			10.0	9.85		ug/L		98	80 - 120
sopropylbenzene			10.0	10.0		ug/L		100	75 - 120
Methyl tert-butyl ether			10.0	9.83		ug/L		98	72 - 130
Methylene Chloride			10.0	8.86		ug/L		89	77 - 125
n-Xylene & p-Xylene			10.0	10.1		ug/L		101	80 - 120
n-Butylbenzene			10.0	10.5		ug/L		105	78 - 120
N-Propylbenzene			10.0	10.5		ug/L		105	80 - 120
o-Xylene			10.0	10.1		ug/L		101	80 - 120
sec-Butylbenzene			10.0	10.5		ug/L		105	78 - 120
Styrene			10.0	10.1		ug/L		101	76 - 121
-Butylbenzene			10.0	10.2		ug/L		102	80 - 121
Foluene			10.0	9.98		ug/L		100	80 - 120
rans-1,2-Dichloroethene			10.0	10.2		ug/L		102	77 - 124
Trichlorofluoromethane			10.0	8.96		ug/L		90	64 - 136
cis-1,2-Dichloroethene			10.0	9.54		ug/L		95	76 - 129
Surrogato	LCS %Recovery	LCS Qualifier	Limits						
Surrogate		Quaiiiiei	80 - 126						
1,2-Dichloroethane-d4 (Surr)			80 - 126 80 - 120						
4-Bromofluorobenzene (Surr)	100								
Dibromofluoromethane (Surr)	100		80 - 120						
Toluene-d8 (Surr)	101		80 - 120						

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Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-313170/4 Matrix: Water Analysis Batch: 313170

Trifluorotoluene (Surr)

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Analysis Batch: 313170			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1-Trichloroethane			10.0	10.9		ug/L		109	74 - 130	0	18
1,1-Dichloroethane			10.0	10.1		ug/L		101	70 - 129	1	26
1,1-Dichloropropene			10.0	10.6		ug/L		106	80 - 120	5	14
1,2,3-Trichlorobenzene			10.0	10.5		ug/L		105	23 - 150	1	35
1,2,3-Trichloropropane			10.0	9.57		ug/L		96	76 - 124	1	30
1,2,4-Trichlorobenzene			10.0	10.4		ug/L		104	57 - 140	4	27
1,2,4-Trimethylbenzene			10.0	10.1		ug/L		101	80 - 120	0	16
1,2-Dibromo-3-Chloropropane			10.0	10.0		ug/L		100	65 - 125	1	27
1,2-Dichlorobenzene			10.0	9.81		ug/L		98	80 - 120	3	15
1,2-Dichloropropane			10.0	9.57		ug/L		96	72 - 126	0	26
1,3,5-Trimethylbenzene			10.0	10.2		ug/L		102	80 - 120	0	14
1,3-Dichlorobenzene			10.0	9.62		ug/L		96	80 - 120	4	14
1,3-Dichloropropane			10.0	9.82		ug/L		98	79 - 120	2	26
2,2-Dichloropropane			10.0	11.4		ug/L		114	62 - 140	2	23
2-Chlorotoluene			10.0	10.2		ug/L		102	80 - 120	3	15
4-Chlorotoluene			10.0	10.2		ug/L		102	80 - 120	1	14
4-Isopropyltoluene			10.0	10.1		ug/L		101	77 - 120	1	13
Bromobenzene			10.0	9.74		ug/L		97	80 - 120	1	13
Bromochloromethane			10.0	9.30		ug/L		93	78 - 120	1	20
Carbon tetrachloride			10.0	12.5		ug/L		125	72 - 129	1	19
Chlorobenzene			10.0	9.81		ug/L		98	80 - 120	2	15
Chloroethane			10.0	8.39		ug/L		84	65 - 132	4	35
Chloromethane			10.0	8.44	J	ug/L		84	52 - 135	1	23
Dichlorodifluoromethane			10.0	7.43	J	ug/L		74	20 - 150	9	35
Ethylbenzene			10.0	10.1		ug/L		101	80 - 120	2	14
Isopropylbenzene			10.0	10.4		ug/L		104	75 - 120	3	20
Methyl tert-butyl ether			10.0	10.0		ug/L		100	72 - 130	2	18
Methylene Chloride			10.0	8.73		ug/L		87	77 - 125	1	18
m-Xylene & p-Xylene			10.0	10.2		ug/L		102	80 - 120	1	14
n-Butylbenzene			10.0	10.6		ug/L		106	78 - 120	1	14
N-Propylbenzene			10.0	10.5		ug/L		105	80 - 120	0	13
o-Xylene			10.0	10.4		ug/L		104	80 - 120	3	16
sec-Butylbenzene			10.0	10.5		ug/L		105	78 - 120	0	15
Styrene			10.0	10.5		ug/L		105	76_121	5	16
t-Butylbenzene			10.0	10.3		ug/L		103	80 - 121	2	14
Toluene			10.0	9.92		ug/L		99	80 - 120	1	19
trans-1,2-Dichloroethene			10.0	9.85		ug/L		99	77 - 124	3	21
Trichlorofluoromethane			10.0	9.31		ug/L		93	64 - 136	4	27
cis-1,2-Dichloroethene			10.0	9.61		ug/L		96	76 - 129	1	15
	LCSD	LCSD									
Surrogate	%Recovery		Limits								
1,2-Dichloroethane-d4 (Surr)			80 - 126								
4-Bromofluorobenzene (Surr)	103		80 - 120								
Dibromofluoromethane (Surr)	98		80 - 120								
Toluene-d8 (Surr)	102		80 - 120								
	102		00-120								

99 80 - 120

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-313176/7

Client Sample ID: Method Blank Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Type: Total/NA

Matrix: Water Analysis Batch: 313176

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0	0.53	ug/L			10/03/19 11:35	1
Ethylbenzene	ND		3.0	0.50	ug/L			10/03/19 11:35	1
m-Xylene & p-Xylene	ND		3.0	0.75	ug/L			10/03/19 11:35	1
o-Xylene	ND		2.0	0.39	ug/L			10/03/19 11:35	1
Toluene	ND		2.0	0.39	ug/L			10/03/19 11:35	1

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		80 - 126		10/03/19 11:35	1
4-Bromofluorobenzene (Surr)	95		80 - 120		10/03/19 11:35	1
Dibromofluoromethane (Surr)	98		80 - 120		10/03/19 11:35	1
Toluene-d8 (Surr)	104		80 - 120		10/03/19 11:35	1
Trifluorotoluene (Surr)	97		80 - 120		10/03/19 11:35	1

Lab Sample ID: LCS 580-313176/4 Matrix: Water Analysis Batch: 313176

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	10.0	9.76		ug/L		98	75 - 121	
Ethylbenzene	10.0	10.6		ug/L		106	80 - 120	
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	80 - 120	
o-Xylene	10.0	10.5		ug/L		105	80 - 120	
Toluene	10.0	10.2		ug/L		102	80 - 120	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		80 - 126
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	101		80 - 120
Trifluorotoluene (Surr)	96		80 - 120

Lab Sample ID: LCSD 580-313176/5 **Matrix: Water** Analysis Batch: 313176

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	10.0	10.2		ug/L		102	75 - 121	5	14
Ethylbenzene	10.0	11.0		ug/L		110	80 - 120	4	14
m-Xylene & p-Xylene	10.0	10.4		ug/L		104	80 - 120	3	14
o-Xylene	10.0	10.7		ug/L		107	80 - 120	2	16
Toluene	10.0	10.8		ug/L		108	80 - 120	6	19

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		80 - 126
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	97		80 - 120
Toluene-d8 (Surr)	102		80 - 120

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Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-313176/5 **Client Sample ID: Lab Control Sample Dup** Matrix: Water Prep Type: Total/NA Analysis Batch: 313176 LCSD LCSD Limits Surrogate %Recovery Qualifier Trifluorotoluene (Surr) 80 - 120 99 Method: 8260C SIM - Volatile Organic Compounds (GC/MS) Lab Sample ID: MB 580-312962/7 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA Analysis Batch: 312962 MB MB Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac 1,1,1,2-Tetrachloroethane ND 0.50 0.0090 ug/L 10/02/19 02:09 1 1,1,2,2-Tetrachloroethane ND 0.50 0.049 ug/L 10/02/19 02:09 1 1.1.2-Trichloroethane ND 0.50 0.017 ug/L 10/02/19 02:09 1 0.014 ug/L 1,1-Dichloroethene ND 0.50 10/02/19 02:09 1 1,2-Dibromoethane ND 0.014 ug/L 10/02/19 02:09 0.50 1 1.2-Dichloroethane ND 0.50 0.024 ug/L 10/02/19 02:09 1 1.4-Dichlorobenzene ND 0.50 0.014 ug/L 10/02/19 02:09 1 2-Hexanone ND 0.098 ug/L 0.50 10/02/19 02:09 1 Benzene ND 0.0090 ug/L 0.50 10/02/19 02:09 1 Bromodichloromethane ND 0.0060 ug/L 0.50 10/02/19 02:09 1 Bromoform 0.013 ug/L 10/02/19 02:09 ND 0.50 1 0.012 ug/L ND Bromomethane 0.50 10/02/19 02:09 1 Chloroform ND 0.50 0.0090 ug/L 10/02/19 02:09 1 cis-1,3-Dichloropropene ND 0.50 0.026 ug/L 10/02/19 02:09 1 Dibromochloromethane ND 0.50 0.016 ug/L 10/02/19 02:09 1 Dibromomethane ND 0.50 0.017 ug/L 10/02/19 02:09 1 Hexachlorobutadiene ND 0.50 0.026 ug/L 10/02/19 02:09 1 Naphthalene 0.341 0.50 0.013 ug/L 10/02/19 02:09 1 Tetrachloroethene ND 0.50 0.017 ug/L 10/02/19 02:09 1 trans-1.3-Dichloropropene ND 0.50 0.027 ug/L 10/02/19 02:09 1 Trichloroethene ND 0.50 0.0090 ug/L 10/02/19 02:09 1 Vinyl chloride ND 0.50 0.013 ug/L 10/02/19 02:09 1 MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	100		48 - 150		10/02/19 02:09	1	
4-Bromofluorobenzene (Surr)	98		75 - 120		10/02/19 02:09	1	
Dibromofluoromethane (Surr)	98		80 - 120		10/02/19 02:09	1	
Toluene-d8 (Surr)	100		75 - 120		10/02/19 02:09	1	
Trifluorotoluene (Surr)	100		80 - 120		10/02/19 02:09	1	

Lab Sample ID: LCS 580-312962/4 Matrix: Water Analysis Batch: 312962

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1,1,2-Tetrachloroethane	5.00	4.64		ug/L		93	64 - 124	
1,1,2,2-Tetrachloroethane	5.00	4.86		ug/L		97	65 - 144	
1,1,2-Trichloroethane	5.00	4.45		ug/L		89	69 - 135	
1,1-Dichloroethene	5.00	4.40		ug/L		88	64 - 139	

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Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

5

6

Client Sample ID: Lab Control Sample

Method: 8260C SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-312962/4 **Matrix: Water**

Analysis Batch: 312962

· ····· , ··· · ·····	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,2-Dibromoethane	5.00	4.50		ug/L		90	75 - 120
1,2-Dichloroethane	5.00	5.12		ug/L		102	58 - 155
1,4-Dichlorobenzene	5.00	4.96		ug/L		99	75 - 130
2-Hexanone	25.0	24.8		ug/L		99	55 - 150
Benzene	5.00	4.99		ug/L		100	71 - 137
Bromodichloromethane	5.00	5.01		ug/L		100	61 - 150
Bromoform	5.00	4.48		ug/L		90	55 - 130
Bromomethane	5.00	4.98		ug/L		100	69 - 137
Chloroform	5.00	4.98		ug/L		100	65 - 150
cis-1,3-Dichloropropene	5.00	4.88		ug/L		98	61 - 140
Dibromochloromethane	5.00	4.54		ug/L		91	71 - 120
Dibromomethane	5.00	4.69		ug/L		94	67 - 126
Hexachlorobutadiene	5.00	4.64		ug/L		93	73 - 139
Naphthalene	5.00	4.87		ug/L		97	69 - 134
Tetrachloroethene	5.00	4.08		ug/L		82	63 - 134
trans-1,3-Dichloropropene	5.00	4.77		ug/L		95	62 - 133
Trichloroethene	5.00	4.74		ug/L		95	70 - 140
Vinyl chloride	5.00	4.14		ug/L		83	56 - 150

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		48 - 150
4-Bromofluorobenzene (Surr)	93		75 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	93		75 - 120
Trifluorotoluene (Surr)	96		80 - 120

Lab Sample ID: LCSD 580-312962/5 Matrix: Water Analysis Batch: 312962

Allalysis Datch. 312902									
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1,2-Tetrachloroethane	5.00	4.43		ug/L		89	64 - 124	5	10
1,1,2,2-Tetrachloroethane	5.00	4.75		ug/L		95	65 - 144	2	18
1,1,2-Trichloroethane	5.00	4.25		ug/L		85	69 - 135	5	15
1,1-Dichloroethene	5.00	4.18		ug/L		84	64 - 139	5	11
1,2-Dibromoethane	5.00	4.32		ug/L		86	75 - 120	4	17
1,2-Dichloroethane	5.00	4.97		ug/L		99	58 - 155	3	11
1,4-Dichlorobenzene	5.00	5.11		ug/L		102	75 - 130	3	35
2-Hexanone	25.0	23.5		ug/L		94	55 - 150	6	23
Benzene	5.00	4.81		ug/L		96	71_137	4	10
Bromodichloromethane	5.00	4.81		ug/L		96	61 - 150	4	10
Bromoform	5.00	4.43		ug/L		89	55 - 130	1	14
Bromomethane	5.00	4.76		ug/L		95	69 - 137	5	16
Chloroform	5.00	4.82		ug/L		96	65 - 150	3	10
cis-1,3-Dichloropropene	5.00	4.54		ug/L		91	61 - 140	7	30
Dibromochloromethane	5.00	4.38		ug/L		88	71 - 120	3	21
Dibromomethane	5.00	4.57		ug/L		91	67 - 126	3	15
Hexachlorobutadiene	5.00	4.50		ug/L		90	73 - 139	3	19

Prep Type: Total/NA

Client Sample ID: Lab Control Sample Dup

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Method: 8260C SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-312962/5 Matrix: Water

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Analysis Batch: 312962

Analysis Baton. 012002	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Naphthalene	5.00	4.29		ug/L		86	69 - 134	13	13	
Tetrachloroethene	5.00	3.87		ug/L		77	63 - 134	5	20	
trans-1,3-Dichloropropene	5.00	4.49		ug/L		90	62 - 133	6	30	
Trichloroethene	5.00	4.68		ug/L		94	70 - 140	1	10	
Vinyl chloride	5.00	3.98		ug/L		80	56 - 150	4	16	

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		48 - 150
4-Bromofluorobenzene (Surr)	94		75 - 120
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	91		75 - 120
Trifluorotoluene (Surr)	97		80 - 120

Lab Sample ID: MB 580-313335/7 Matrix: Water Analysis Batch: 313335

Client Sample ID: Method Blank Prep Type: Total/NA

Analysis Batch. 515555									
		MB							
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.0090	ug/L			10/04/19 19:52	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.049	ug/L			10/04/19 19:52	1
1,1,2-Trichloroethane	ND		0.50	0.017	ug/L			10/04/19 19:52	1
1,1-Dichloroethene	ND		0.50	0.014	ug/L			10/04/19 19:52	1
1,2-Dibromoethane	ND		0.50	0.014	ug/L			10/04/19 19:52	1
1,2-Dichloroethane	ND		0.50	0.024	ug/L			10/04/19 19:52	1
1,4-Dichlorobenzene	ND		0.50	0.014	ug/L			10/04/19 19:52	1
2-Hexanone	ND		0.50	0.098	ug/L			10/04/19 19:52	1
Benzene	ND		0.50	0.0090	ug/L			10/04/19 19:52	1
Bromodichloromethane	ND		0.50	0.0060	ug/L			10/04/19 19:52	1
Bromoform	ND		0.50	0.013	ug/L			10/04/19 19:52	1
Bromomethane	ND		0.50	0.012	ug/L			10/04/19 19:52	1
Chloroform	ND		0.50	0.0090	ug/L			10/04/19 19:52	1
cis-1,3-Dichloropropene	ND		0.50	0.026	ug/L			10/04/19 19:52	1
Dibromochloromethane	ND		0.50	0.016	ug/L			10/04/19 19:52	1
Dibromomethane	ND		0.50	0.017	ug/L			10/04/19 19:52	1
Hexachlorobutadiene	0.0529	J	0.50	0.026	ug/L			10/04/19 19:52	1
Naphthalene	0.133	J	0.50	0.013	ug/L			10/04/19 19:52	1
Tetrachloroethene	ND		0.50	0.017	ug/L			10/04/19 19:52	1
trans-1,3-Dichloropropene	ND		0.50	0.027	ug/L			10/04/19 19:52	1
Trichloroethene	ND		0.50	0.0090	ug/L			10/04/19 19:52	1
Vinyl chloride	ND		0.50	0.013	ug/L			10/04/19 19:52	1
	MB								
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		48 - 150			-		10/04/19 19:52	1
4-Bromofluorobenzene (Surr)	105		75 - 120					10/04/19 19:52	1

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1,2-Dichloroethane-d4 (Surr)	101	48 - 150	 10/04/19 19:52	1
4-Bromofluorobenzene (Surr)	105	75 - 120	10/04/19 19:52	1
Dibromofluoromethane (Surr)	99	80 - 120	10/04/19 19:52	1
Toluene-d8 (Surr)	99	75 - 120	10/04/19 19:52	1
Trifluorotoluene (Surr)	101	80 - 120	10/04/19 19:52	1

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Prep Type: Total/NA

Method: 8260C SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-313335/4 Matrix: Water

Analysis Batch: 313335

Analysis Batch. 910000	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
1,1,1,2-Tetrachloroethane	5.00	4.96		ug/L		99	64 - 124
1,1,2,2-Tetrachloroethane	5.00	4.63		ug/L		93	65 - 144
1,1,2-Trichloroethane	5.00	4.48		ug/L		90	69 - 135
1,1-Dichloroethene	5.00	4.18		ug/L		84	64 - 139
1,2-Dibromoethane	5.00	4.52		ug/L		90	75 - 120
1,2-Dichloroethane	5.00	4.95		ug/L		99	58 - 155
1,4-Dichlorobenzene	5.00	5.26		ug/L		105	75 - 130
2-Hexanone	25.0	26.3		ug/L		105	55 - 150
Benzene	5.00	4.86		ug/L		97	71 - 137
Bromodichloromethane	5.00	4.90		ug/L		98	61 - 150
Bromoform	5.00	5.09		ug/L		102	55 - 130
Bromomethane	5.00	4.41		ug/L		88	69 - 137
Chloroform	5.00	4.88		ug/L		98	65 - 150
cis-1,3-Dichloropropene	5.00	4.93		ug/L		99	61 - 140
Dibromochloromethane	5.00	4.80		ug/L		96	71 - 120
Dibromomethane	5.00	4.81		ug/L		96	67 - 126
Hexachlorobutadiene	5.00	4.90		ug/L		98	73 - 139
Naphthalene	5.00	4.69		ug/L		94	69 - 134
Tetrachloroethene	5.00	4.42		ug/L		88	63 - 134
trans-1,3-Dichloropropene	5.00	4.91		ug/L		98	62 - 133
Trichloroethene	5.00	5.04		ug/L		101	70 - 140
Vinyl chloride	5.00	3.99		ug/L		80	56 - 150

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		48 - 150
4-Bromofluorobenzene (Surr)	101		75 - 120
Dibromofluoromethane (Surr)	99		80 - 120
Toluene-d8 (Surr)	95		75 - 120
Trifluorotoluene (Surr)	101		80 - 120

Lab Sample ID: LCSD 580-313335/5 Matrix: Water Analysis Batch: 313335

Analysis Datch. 010000									
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1,2-Tetrachloroethane	5.00	4.70		ug/L		94	64 - 124	5	10
1,1,2,2-Tetrachloroethane	5.00	4.75		ug/L		95	65 - 144	2	18
1,1,2-Trichloroethane	5.00	4.38		ug/L		88	69 - 135	2	15
1,1-Dichloroethene	5.00	4.40		ug/L		88	64 - 139	5	11
1,2-Dibromoethane	5.00	4.50		ug/L		90	75 - 120	1	17
1,2-Dichloroethane	5.00	5.04		ug/L		101	58 - 155	2	11
1,4-Dichlorobenzene	5.00	5.01		ug/L		100	75 - 130	5	35
2-Hexanone	25.0	25.4		ug/L		102	55 - 150	3	23
Benzene	5.00	4.95		ug/L		99	71 - 137	2	10
Bromodichloromethane	5.00	5.02		ug/L		100	61 - 150	2	10
Bromoform	5.00	4.89		ug/L		98	55 - 130	4	14
Bromomethane	5.00	4.41		ug/L		88	69 - 137	0	16
Chloroform	5.00	4.92		ug/L		98	65 - 150	1	10

Eurofins TestAmerica, Seattle

10/9/2019

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

LCSD LCSD

4.81

4.71

5.05

5.09

4.82

4.30

4.80

4.91

4.50

Result Qualifier

Unit

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

D %Rec

Spike

Added

5.00

5.00

5.00

5.00

5.00

5.00

5.00

5.00

5.00

RPD

3

2

5

Δ

3

3

2

3

12

Method: 8260C SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 580-313335/5 Matrix: Water

Analysis Batch: 313335

cis-1.3-Dichloropropene

Dibromochloromethane

Hexachlorobutadiene

trans-1,3-Dichloropropene

Dibromomethane

Tetrachloroethene

Trichloroethene

Vinyl chloride

Naphthalene

Analyte

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

96

94

101

102

96

86

96

98

90

%Rec.

Limits

61 - 140

71 - 120

67 - 126

73 - 139

69 - 134

63 - 134

62 - 133

70 - 140

56 - 150

Client Sample ID: Method Blank

Prep Type: Total/NA

6

	3
	9

13	
20	O
30	
10	9
16	

RPD

Limit

30

21

15

19

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		48 - 150
4-Bromofluorobenzene (Surr)	98		75 - 120
Dibromofluoromethane (Surr)	101		80 - 120
Toluene-d8 (Surr)	90		75 - 120
Trifluorotoluene (Surr)	101		80 - 120

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 590-24393/1-A Matrix: Water Analysis Batch: 24399

Prep Batch: 24393 MB MB Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Naphthalene ND 0.090 0.053 ug/L 09/27/19 13:08 09/27/19 20:17 1 2-Methylnaphthalene ND 0.090 0.044 ug/L 09/27/19 13:08 09/27/19 20:17 1 1-Methylnaphthalene ND 0.090 0.023 ug/L 09/27/19 13:08 09/27/19 20:17 1 ND Acenaphthylene 0.016 ug/L 09/27/19 13:08 09/27/19 20:17 0.090 1 Acenaphthene ND 0.090 0.022 ug/L 09/27/19 13:08 09/27/19 20:17 1 Fluorene ND 0.016 ug/L 09/27/19 13:08 09/27/19 20:17 0.090 1 Phenanthrene ND 0.090 0.056 ug/L 09/27/19 13:08 09/27/19 20:17 1 ND Anthracene 0.090 0.025 ug/L 09/27/19 13:08 09/27/19 20:17 1 Fluoranthene ND 0.090 0.017 ug/L 09/27/19 13:08 09/27/19 20:17 1 ND 0.026 ug/L 09/27/19 13:08 09/27/19 20:17 Pyrene 0.090 1 Benzo[a]anthracene ND 0.090 0.012 ug/L 09/27/19 13:08 09/27/19 20:17 1 09/27/19 13:08 09/27/19 20:17 Chrysene ND 0.090 0.010 ug/L 1 Benzo[b]fluoranthene ND 0.090 0.011 ug/L 09/27/19 13:08 09/27/19 20:17 Benzo[k]fluoranthene ND 0.090 0.015 ug/L 09/27/19 13:08 09/27/19 20:17 1 Benzo[a]pyrene ND 0.090 0.012 ug/L 09/27/19 13:08 09/27/19 20:17 1 Indeno[1,2,3-cd]pyrene ND 0.090 0.022 ug/L 09/27/19 13:08 09/27/19 20:17 1 Dibenz(a,h)anthracene ND 0.090 0.013 ug/L 09/27/19 13:08 09/27/19 20:17 1 Benzo[g,h,i]perylene ND 0.090 0.021 ug/L 09/27/19 13:08 09/27/19 20:17 1 MB MB Qualifier Dil Fac %Recovery Limits Surrogate Prepared Analyzed Nitrobenzene-d5 81 36 - 126 09/27/19 13:08 09/27/19 20:17 1 2-Fluorobiphenyl (Surr) 78 44 - 120 09/27/19 13:08 09/27/19 20:17 1 86 09/27/19 13:08 09/27/19 20:17 p-Terphenyl-d14 51 - 121 1

Client Sample ID: Lab Control Sample

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS	590-24393/2-A
Matrix: Water	

Matrix: Water Analysis Batch: 24399						· .	Prep Type: Total/NA Prep Batch: 24393
Analysis Datch. 24000	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Naphthalene	1.60	1.26		ug/L		79	52 - 120
2-Methylnaphthalene	1.60	1.24		ug/L		77	44 - 120
1-Methylnaphthalene	1.60	1.24		ug/L		77	49 - 120
Acenaphthylene	1.60	1.27		ug/L		80	57 - 120
Acenaphthene	1.60	1.31		ug/L		82	54 - 120
Fluorene	1.60	1.32		ug/L		82	59 - 120
Phenanthrene	1.60	1.38		ug/L		87	57 - 120
Anthracene	1.60	1.38		ug/L		86	66 - 120
Fluoranthene	1.60	1.34		ug/L		84	64 - 120
Pyrene	1.60	1.43		ug/L		90	52 - 120
Benzo[a]anthracene	1.60	1.38		ug/L		86	68 - 120
Chrysene	1.60	1.41		ug/L		88	69 - 120
Benzo[b]fluoranthene	1.60	1.43		ug/L		89	63 - 120
Benzo[k]fluoranthene	1.60	1.32		ug/L		83	67 - 120
Benzo[a]pyrene	1.60	1.33		ug/L		83	70 - 120
Indeno[1,2,3-cd]pyrene	1.60	1.37		ug/L		86	58 - 120
Dibenz(a,h)anthracene	1.60	1.38		ug/L		87	58 - 120
Benzo[g,h,i]perylene	1.60	1.39		ug/L		87	56 - 120

Nitrobenzene-d5	LCS LCS	
Surrogate	%Recovery Qualifie	er Limits
Nitrobenzene-d5	83	36 - 126
2-Fluorobiphenyl (Surr)	83	44 - 120
p-Terphenyl-d14	86	51 - 121

Lab Sample ID: LCSD 590-24393/3-A **Matrix: Water** Analysis Batch: 24399

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Analysis Batch: 24399							Prep E	Batch: 2	
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Naphthalene	1.60	1.21		ug/L		75	52 - 120	4	30
2-Methylnaphthalene	1.60	1.20		ug/L		75	44 - 120	4	35
1-Methylnaphthalene	1.60	1.20		ug/L		75	49 - 120	3	35
Acenaphthylene	1.60	1.24		ug/L		78	57 - 120	2	30
Acenaphthene	1.60	1.27		ug/L		80	54 - 120	3	30
Fluorene	1.60	1.30		ug/L		81	59 - 120	1	30
Phenanthrene	1.60	1.40		ug/L		88	57 - 120	1	30
Anthracene	1.60	1.39		ug/L		87	66 - 120	1	30
Fluoranthene	1.60	1.36		ug/L		85	64 - 120	2	30
Pyrene	1.60	1.45		ug/L		91	52 - 120	1	30
Benzo[a]anthracene	1.60	1.41		ug/L		88	68 - 120	2	30
Chrysene	1.60	1.44		ug/L		90	69 - 120	2	24
Benzo[b]fluoranthene	1.60	1.46		ug/L		91	63 - 120	2	30
Benzo[k]fluoranthene	1.60	1.36		ug/L		85	67 - 120	3	30
Benzo[a]pyrene	1.60	1.36		ug/L		85	70 - 120	2	30
Indeno[1,2,3-cd]pyrene	1.60	1.40		ug/L		88	58 - 120	2	30
Dibenz(a,h)anthracene	1.60	1.42		ug/L		89	58 - 120	3	30
Benzo[g,h,i]perylene	1.60	1.44		ug/L		90	56 - 120	4	35

Eurofins TestAmerica, Seattle

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Project/Site: Kobuk Feed & Fuel

QC Sample Results

Job ID: 580-89500-1

Lab Sample ID: LCSD 590-	2/303/3-0					C	liont Sa	mnle	ID: Lab	Control Sam	
Matrix: Water	24000/0-A					Ŭ		inpie		Prep Type: 1	
Analysis Batch: 24399										Prep Batch	
-	LCSD	ICSD									
Surrogate	%Recovery		Limits								
Nitrobenzene-d5	81		36 - 126								
2-Fluorobiphenyl (Surr)	80		44 - 120								
p-Terphenyl-d14	86		51 - 121								
lethod: AK101 - Alask	a - Gasoliı	ne Range	Organics	(GC)							
Lab Sample ID: MB 580-31 Matrix: Water	2781/7							Cli	ent Sam	ple ID: Metho	
Analysis Batch: 312781										Prep Type: 1	otal/N/
Analysis Batch. 512701		MB MB									
Analyte		ult Qualifier	RL	N		Unit		DF	Prepared	Analyzed	Dil Fa
Gasoline Range Organics (GRO) -C6-C10		ND	0.25		0.10 r					09/30/19 14:04	
-00-010		MB MB									
Surrogate		ery Qualifier	Limits						Prepared	Analyzed	Dil Fa
4-Bromofluorobenzene (Surr)	///////	87 Quanner							repareu		
		0,	001,00								
Lab Sample ID: LCS 580-3 Matrix: Water Analysis Batch: 312781							Chio			Lab Control Prep Type: 1	
			Spike	LCS						%Rec.	
Analyte			Added	Result	Quali	fier	Unit	D		Limits	
Gasoline Range Organics (GRO) -C6-C10			1.00	0.916			mg/L		92	77 - 123	
	LCS	LCS									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	95		50 - 150								
Lab Sample ID: LCSD 580-	312781/18					С	lient Sa	mple	D: Lab	Control Sam	ple Du
Matrix: Water										Prep Type: 1	
Analysis Batch: 312781											
			Spike	LCSD	LCSD)				%Rec.	RP
Analyte			Added	Result	Quali	fier	Unit	D		Limits RP	
Gasoline Range Organics (GRO) -C6-C10			1.00	0.892			mg/L		89	77 - 123	3 2
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	91		50 - 150								
Lab Sample ID: MB 580-31	3188/7							Cli	ent Sam	ple ID: Metho	d Blan
Matrix: Water										Prep Type: 1	
Analysis Batch: 313188											
Analysis Batch: 313188	I	MB MB									
Analysis Batch: 313188 Analyte	Res	MB MB sult Qualifier			IDL ().10 r		1	D F	Prepared	Analyzed	Dil Fa

Eurofins TestAmerica, Seattle

Job ID: 580-89500-1

Dil Fac

1

RPD

Limit

Dil Fac

Dil Fac

1

1

20

3

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QC Sample Results Method: AK101 - Alaska - Gasoline Range Organics (GC) (Continued) Lab Sample ID: MB 580-313188/7 **Client Sample ID: Method Blank Matrix: Water** Prep Type: Total/NA Analysis Batch: 313188 MB MB Limits Surrogate %Recovery Qualifier Prepared Analyzed 4-Bromofluorobenzene (Surr) 89 50 - 150 10/03/19 13:04 Lab Sample ID: LCS 580-313188/8 **Client Sample ID: Lab Control Sample** Matrix: Water Prep Type: Total/NA Analysis Batch: 313188 LCS LCS Spike %Rec. Added Result Qualifier Unit %Rec Limits Analyte D 1 00 0.876 88 77 - 123 mg/L Gasoline Range Organics (GRO) -C6-C10 LCS LCS Surrogate %Recovery Qualifier Limits 50 - 150 4-Bromofluorobenzene (Surr) 90 Lab Sample ID: LCSD 580-313188/9 **Client Sample ID: Lab Control Sample Dup Matrix: Water** Prep Type: Total/NA Analysis Batch: 313188 Spike LCSD LCSD %Rec. Added Result Qualifier Unit Limits RPD Analyte D %Rec 1.00 90 0.899 mg/L 77 - 123 Gasoline Range Organics (GRO) -C6-C10 LCSD LCSD Limits Surrogate %Recovery Qualifier 50 - 150 4-Bromofluorobenzene (Surr) 89 Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC) Lab Sample ID: MB 590-24481/1-A **Client Sample ID: Method Blank Matrix: Water Prep Type: Total/NA** Analysis Batch: 24473 Prep Batch: 24481 MB MB Analyte **Result Qualifier** RL MDL Unit Prepared Analyzed D 0.25 10/02/19 12:35 10/02/19 21:49 Diesel Range Organics (DRO) ND 0.090 mg/L (C10-C25) MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed o-Terphenyl 50 - 150 10/02/19 12:35 10/02/19 21:49 72 n-Triacontane-d62 77 50 - 150 10/02/19 12:35 10/02/19 21:49 Lab Sample ID: LCS 590-24481/2-A **Client Sample ID: Lab Control Sample** Matrix: Water Prep Type: Total/NA Analysis Batch: 24473 Prep Batch: 24481 Spike LCS LCS %Rec. Analyte Added **Result Qualifier** Unit D %Rec Limits 1.60 1.30 mg/L 81 75 - 125 Diesel Range Organics (DRO) (C10-C25) LCS LCS Surrogate %Recovery Qualifier Limits 50 - 150 o-Terphenyl 88

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Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC) (Continued)

Project/Site: Kobuk Feed & I									JOD ID:	00-09	500-1	
Method: AK102 & 103 (Continued)	- Alaska -	Diesel R	ange Orga	anics &	Residu	ual Rar	nge C)rgani	cs (GC)			
Lab Sample ID: LCS 590-	Client Sample ID: Lab Control Sample											
Matrix: Water Analysis Batch: 24473									Prep Ty Prep E	pe: Tot Batch: 2		5
		LCS										6
Surrogate	%Recovery	Qualifier	Limits									
n-Triacontane-d62	94		50 - 150									
Lab Sample ID: LCSD 590	0-24481/3-A				C	Client S	ample	ID: Lal	b Control	Sample	e Dup	
Matrix: Water							ampio		Prep Ty			8
Analysis Batch: 24473										Batch:		
			Spike	LCSD	LCSD				%Rec.		RPD	9
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Diesel Range Organics (DRO) (C10-C25)			1.60	1.32		mg/L		83	75 - 125	1	20	
	LCSD	LCSD										
Surrogate	%Recovery	Qualifier	Limits									
o-Terphenyl	88		50 - 150									
n-Triacontane-d62	95		50 - 150									

Client Sample ID: Kobuk-MW1-919 Date Collected: 09/23/19 13:30 Date Received: 09/25/19 12:30

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	313176	10/03/19 20:06	CJ	TAL SEA
Total/NA	Analysis	AK101		1	313188	10/03/19 20:45	W1T	TAL SEA
Total/NA	Prep	3510C			24481	10/02/19 12:35	AMB	TAL SPK
Total/NA	Analysis	AK102 & 103		1	24473	10/03/19 05:10	NMI	TAL SPK

Client Sample ID: Kobuk-MW2-919 Date Collected: 09/23/19 12:30 Date Received: 09/25/19 12:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	313176	10/03/19 20:31	CJ	TAL SEA
Total/NA	Analysis	8260C SIM		1	313335	10/04/19 23:46	TL1	TAL SEA
Total/NA	Prep	3510C			24393	09/27/19 13:08	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1	24399	09/28/19 02:53	NMI	TAL SPK
Total/NA	Analysis	AK101		1	313188	10/03/19 22:21	W1T	TAL SEA
Total/NA	Prep	3510C			24481	10/02/19 12:35	AMB	TAL SPK
Total/NA	Analysis	AK102 & 103		1	24473	10/03/19 05:31	NMI	TAL SPK

Client Sample ID: Kobuk-MW3-919 Date Collected: 09/23/19 10:30 Date Received: 09/25/19 12:30

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1 _	313176	10/03/19 20:56	CJ	TAL SEA
Total/NA	Analysis	8260C SIM		1	313335	10/05/19 00:12	TL1	TAL SEA
Total/NA	Prep	3510C			24393	09/27/19 13:08	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1	24399	09/28/19 03:16	NMI	TAL SPK
Total/NA	Analysis	AK101		1	313188	10/03/19 22:45	W1T	TAL SEA
Total/NA	Prep	3510C			24481	10/02/19 12:35	AMB	TAL SPK
Total/NA	Analysis	AK102 & 103		1	24473	10/03/19 05:52	NMI	TAL SPK

Client Sample ID: Kobuk-MW12-919 Date Collected: 09/23/19 12:45 Date Received: 09/25/19 12:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	313170	10/03/19 18:25	CJ	TAL SEA
Total/NA	Analysis	8260C SIM		1	313335	10/05/19 00:38	TL1	TAL SEA
Total/NA	Prep	3510C			24393	09/27/19 13:08	NMI	TAL SPK
Total/NA	Analysis	8270D SIM		1	24399	09/28/19 03:39	NMI	TAL SPK
Total/NA	Analysis	AK101		1	313188	10/03/19 23:10	W1T	TAL SEA
Total/NA	Prep	3510C			24481	10/02/19 12:35	AMB	TAL SPK
Total/NA	Analysis	AK102 & 103		1	24473	10/03/19 06:13	NMI	TAL SPK

Lab Sample ID: 580-89500-4 Matrix: Water

Eurofins TestAmerica, Seattle

Job ID: 580-89500-1

Matrix: Water

Matrix: Water

Lab Sample ID: 580-89500-1

Lab Sample ID: 580-89500-2

Lab Sample ID: 580-89500-3 Matrix: Water

Matrix: Water

Lab Sample ID: 580-89500-5

Client Sample ID: Trip Blank Date Collected: 09/23/19 00:01 Date Received: 09/25/19 12:30

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	313170	10/03/19 15:07	CJ	TAL SEA
Total/NA	Analysis	8260C SIM		1	312962	10/02/19 03:01	TL1	TAL SEA
Total/NA	Analysis	AK101		1	312781	09/30/19 15:17	DCV	TAL SEA

Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310 TAL SPK = Eurofins TestAmerica, Spokane, 11922 East 1st Ave, Spokane, WA 99206, TEL (509)924-9200

Accreditation/Certification Summary

Client: Alaska Resources & Environment Project/Site: Kobuk Feed & Fuel Job ID: 580-89500-1

Laboratory: Eurofins TestAmerica, Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date	
Alaska (UST)	State	17-024	01-19-22	
ANAB	Dept. of Defense ELAP	L2236	01-19-22	5
ANAB	ISO/IEC 17025	L2236	01-19-22	
California	State	2901	11-05-19	
Montana (UST)	State	NA	04-13-21	
Oregon	NELAP	WA100007	11-05-19	
US Fish & Wildlife	US Federal Programs	058448	07-31-20	
USDA	US Federal Programs	P330-17-00039	02-10-20	8
Washington	State	C553	02-17-20	0

Laboratory: Eurofins TestAmerica, Spokane

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-025	12-07-19
Oregon	NELAP	4137	12-07-19
Washington	State	C569	01-06-20

Sample Summary

Client: Alaska Resources & Environment Project/Site: Kobuk Feed & Fuel

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asse
580-89500-1	Kobuk-MW1-919	Water	09/23/19 13:30	09/25/19 12:30	
580-89500-2	Kobuk-MW2-919	Water	09/23/19 12:30	09/25/19 12:30	
580-89500-3	Kobuk-MW3-919	Water	09/23/19 10:30	09/25/19 12:30	
580-89500-4	Kobuk-MW12-919	Water	09/23/19 12:45	09/25/19 12:30	
580-89500-5	Trip Blank	Water	09/23/19 00:01	09/25/19 12:30	

Client: Alaska Resources and Env Report To: Lyle Gr Address: ARES P.O. Bo	VIRCES A IRONMEI SERVICE Vironmental Ser eschover x 83050 -res.com	NTAL S	374-321	9			n of C 83050 5, Alaska	of Custody Custody Ra	eport Laboratory Nar Address:	573	st America 755 8th St. coma, WA	East	Or	In E	Fail Pho Fax round R Business D t Inorganic). Box 83(rbanks, A one: 907.3 : 907.374 eque: deque: days : Analy:	slaska 99708 374.3226 4.2319 St
Project Name: Kobuk	Feed & Fue		T			P.U. Number		Preservative									
Project Number:			HCL	HCL	HCI.	HCL	N/A			1		1			lydrocarbo		-
Sampled By: Josh K	lynstra						Rea	uested Analyse	l			l	5 Specify O		3 2	1	
		•					<u></u>	TT		1					Tier II re	porting	3
Sample Identification	Samplin Date/ Ti		AK 101 GRO	AK 8260C BTEX	8260C VOC	AK 102 DRO	EPA 8270D SIM PAH						Matrix (W,S,O)	# of Cont.	Location Commen		Lab ID
Kobuk-MW1-919	09/23/2019	1330	X	X		X	<u> </u>	1					w	8			
, Kobuk-MW2-919	09/23/2019	1230	Х		X	X	X	+		+			W	+			
, Kobuk-MW3-919	09/23/2019	1030	X	1	X	X	X						W	10			
Kobuk-MW12-919	09/23/2019	1245	X		X	X	X							10			
, Trip Blank	09/23/2019	0800	X		X		1	+					W	10			
6													W	6			
											-			ļļ			
·										· · · · · · · · · · · · · · · · · · ·							
15		·															
Released By: Print Name: Josh Klynstra	<u> </u>	Firm:	ARE)ate: 09 'ime: 13	/24/201 00	9		By: B . 2 e: K . Gr		<u> </u>	irm Cr	-n TA		Date: 9 Time: 1		
Released By:					ate:			Received I							Date:	-30	
Print Name: Additional Remarks		Firm:		T	ime:			Print Name			Fi	irm:			Time:		
COC REV 02 2000														Temp:		Page 1 of	f 1

 Therm. ID:
 A cor:
 0.7 • Unc:
 0.8 •

 Cooler Dsc:
 In
 BL
 FedEx:
 Packing:

 Packing:
 Bub
 FedEx:
 UPS:

 Cust. Seal: Ves
 Vonc:
 Lab Cour:
 Other:

 Blue Re, Wet, Dry, None
 Other:
 S.>

Page 34 of 37

Eurofins TestAmerica, Seattle

Chain of Custody Record



a eurofins

Environment Testing TestAmerica

Tacoma, WA 98424 Phone: 253-922-2310 Fax: 253-922-5047

5755 8th Street East

Client Information (Sub Contract Lab)	Sampler:				PM: Iker, Elaine M					Ca	Carrier Tracking No(s):				COC No: 580-70475.1			
Client Contact	Phone:			E-Mai								te of Orig	n:			Page: Page 1 of 1		
Shipping/Receiving Company:				elain	Ine.walker@testamericainc.com Alaska							Job #						
TestAmerica Laboratories, Inc															_	580-89500-1		
Address: 11922 East 1st Ave.	Due Date Requeste 10/7/2019	ed:		Analysis Requested								Preservation Codes:						
City.		TAT Requested (days):					TT	T	T			TT	11	1		A - HCL M - Hexane B - NaOH N - None		
Spokane																C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S		
State, Zip: WA, 99206																E - NaHSO4 Q - Na2SO3		
Phone:	PO #:	-					natio									F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4		
509-924-9200(Tel) 509-924-9290(Fax)	W0 #:				9	DR	Arot									H - Ascorbic Acid T - TSP Dodecahydrat I - Ice U - Acetone		
Email:	WO #.				No)	NOD	/clic					11				J - DI Water V - MCAA		
Project Name:	Project #:				(Yes	4d (I	olycj									K - EDTA W - pH 4-5 L - EDA Z - other (specify)		
Kobuk Feed & Fuel	58011466 ssow#:			-	Yes	N.	VI P								cont	Other:		
					Sample (Yes ISD (Yes or I	0C L	00								o			
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Type (w	atrix water. esolid. caste/cil.	Field Filtered Perform MS/M		8270D_SIM/3510C_LVI Polycyclic Aromatic Hydrocarbons								Total Number	Special Instructions/Note:		
Sample identification - Chefit ib (Lab ib)		>	Preservation		XX										X			
Kobuk-MW1-919 (580-89500-1)	9/23/19	13:30 Alaskan	w I	later	T	x									2			
(obuk-MW2-919 (580-89500-2)	9/23/19	12:30 Alaskan	w I	/ater		X	X								4			
Kobuk-MW3-919 (580-89500-3)	9/23/19	10:30 Alaskan	N N	/ater		x	×								4			
Kobuk-MW12-919 (580-89500-4)	9/23/19	12:45 Alaskan	N	/ater		x	x								4			
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		-			+	-		-		-	-							
					-	-					-	++						
Note: Since laboratory accreditations are subject to change. TestAmerica urrently maintain accreditation in the State of Origin listed above for ana aboratories, Inc. attention immediately. If all requested accreditations a	lysis/tests/matrix being analyze	ed, the sample	es must be shipped b	ack to the	TestAn	nenca	aborato	ry or oth	ier instru	ctions v	s. This s vill be pr	ample sh ovided. A	pment is for ny changes	rwarded u to accred	inder o	chain-of-custody. If the laboratory does not n status should be brought to TestAmerica		
Possible Hazard Identification					Sa	mple	Disp	osal ()	A fee n	nay b	e asse	ssed if	samples	are ret	ained	d longer than 1 month)		
Inconfirmed					1	-		To Clie	_	L		osal By	Lab	A	Archiv	ve For Months		
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Delivera	able Rank: 2	2		Sp	ecial	Instru	ctions/	QC Re	quiren	nents:							
Empty Kit Relinquished by		Date:			Time:			_				Method	of Shipmen	nt:				
telinquished by Ala	Date Time	15	the second se	any 180	~	-	lived by		Ma	0	200	56e	DateTin	1000	119	11:28 Company		
telingyished by:	DaterTime		Comp	any		Rece	lived by	-					Date/Tir	me:		Company		
elinquished by:	Date/Time:		Comp	any		Rece	ived by						Date/Tin	me:		Company		
Custody Seals Intact: Custody Seal No.:							er Temp	erature(s) *C and	d Other	Remark	S:			5	100		
A Yes A No			Pag	e 35 (of 37	7						_)	Ver: 01/16/2019		

10

Login Sample Receipt Checklist

Client: Alaska Resources & Environment

Login Number: 89500 List Number: 1 Creator: Presley, Kim A

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-89500-1

List Source: Eurofins TestAmerica, Seattle

Login Sample Receipt Checklist

Client: Alaska Resources & Environment

Job Number: 580-89500-1

11

Login Number: 89500 List Source: Eurofins TestAmerica, Spokane 5 6 7 8 9 10 List Number: 2 List Creation: 09/26/19 11:34 AM Creator: O'Toole, Maria C

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td>Lab does not accept radioactive samples.</td>	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	497224
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	5.1
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

Laboratory Data Review Checklist

Completed By:

Richard Ranft

Title:

Environmental Geologist

Date:

03/09/2023

Consultant Firm:

Alaska Resources and Environmental Services

Laboratory Name:

Eurofins Seattle

Laboratory Report Number:

580-89500-1

Laboratory Report Date:

10/19/2019

CS Site Name:

Kobuk Feed & Fuel

ADEC File Number:

100.26.137

Hazard Identification Number:

Laboratory Report Date:

10/19/2019

CS Site Name:

Kobuk Feed & Fuel

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

- 1. <u>Laboratory</u>
 - a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes \boxtimes No \square N/A \square Comments:

Eurofins Seattle is an ADEC CS approved laboratory.

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 \boxtimes No \square N/A \square Comments:

DRO and PAH samples were subcontracted and transferred to Eurofins Spokane. I	Eurofins Spokane is
an ADEC CS approved laboratory.	

- 2. <u>Chain of Custody (CoC)</u>
 - a. CoC information completed, signed, and dated (including released/received by)?

Yes \boxtimes No \square N/A \square	Comments:
b. Correct analyses requested?	
Yes⊠ No□ N/A□	Comments:

- 3. <u>Laboratory Sample Receipt Documentation</u>
 - a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

Yes \boxtimes No \square N/A \square Comments:

The coolers at the time of receipt in Seattle was 0.7 $^\circ$ C.

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

YesNoN/AComments:

Five (5) analytical samples consisting of four (4) groundwater samples (including one duplicate sample) and one (1) trip blank were received by Eurofins Seattle on September 25, 2019. The samples arrived in good condition and were properly preserved.

Laboratory Report Date:

10/19/2019

CS Site Name:

Kobuk Feed & Fuel

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

Yes \boxtimes No \square N/A \square Comments:

Samples arrived in good condition and were properly preserved.

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 \square No \square N/A \boxtimes Comments:

There weren't any discrepancies.

e. Data quality or usability affected?

Comments:

Data quality or usability are unaffected.

- 4. Case Narrative
 - a. Present and understandable?

Yes \boxtimes No \square N/A \square Comments:

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

Yes \boxtimes No \square N/A \square Comments:

The laboratory did not report any discrepancies, errors, or QC failures with the exception of method blank detections that will be addressed in the appropriate sections below.

c. Were all corrective actions documented?

Yes \square No \square N/A \boxtimes Comments:

Corrective actions were not required.

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

Comments:

Data quality and usability will be discussed in the appropriate sections below.

Laboratory Report Date:

10/19/2019

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Kobuk Feed & Fuel

5. Samples Results

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

Yes \boxtimes No \square N/A \square Comments:

b. All applicable holding times met?

Yes \boxtimes No \square N/A \square Comments:

c. All soils reported on a dry weight basis?

YesNo $N/A \boxtimes$ Comments:

Analytical samples consisted of groundwater samples.

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

Yes \square No \boxtimes N/A \square Comments:

8260C: 1,2,3-Trichloropropane have detection limits that exceed ADEC CUL's in one or more samples.

e. Data quality or usability affected?

Data quality is affected. Analytes with elevated detection limits could be present at concentrations that exceed ADEC cleanup levels. Data is still usable. Sample results with detection limits that exceed ADEC CUL's are highlighted in blue in the analytical summary table.

6. <u>QC Samples</u>

- a. Method Blank
 - i. One method blank reported per matrix, analysis and 20 samples?

Yes \boxtimes No \square N/A \square Comments:

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10/19/2019

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Kobuk Feed & Fuel

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

Yes \boxtimes No \square N/A \square Comments:

8260C SIM: Hexachlorobutadiene was detected in MB 580-313335/7 at concentrations (0.0529 ug/L) that were above the method detection limit, but below the LOQ (0.50 ug/L). This analyte was not detected in associated samples. Data quality and usability are not affected.

8260C SIM: Napthalene was detected in MB 580-313335/7 at concentrations (0.133 ug/L) that were above the method detection limit, but below the LOQ (0.50 ug/L). This analyte was detected in associated samples significantly above and below ADEC CULs. Data quality is affected. Analytes detected in both the blank and the samples are qualified with the B data flag. Data usability is not affected.

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

All detections were below the LOQ.

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

Yes \square No \square N/A \boxtimes Comments:

Affected results are qualified with B data flags.

v. Data quality or usability affected?

Comments:

See Section 6.a.ii. above.

- b. Laboratory Control Sample/Duplicate (LCS/LCSD)
 - i. Organics One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes \boxtimes No \square N/A \square Comments:

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

Yes \square No \square N/A \boxtimes Comments:

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10/19/2019

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Kobuk Feed & Fuel

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 \boxtimes No \square N/A \square Comments:

All percent recoveries were reported and within method or laboratory limits.

 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 \boxtimes No \square N/A \square Comments:

All RPDs were within acceptable range.

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 \square No \square N/A \boxtimes Comments:

Qualification is not required.

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

Comments:

Data quality and usability are not affected.

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 \square No \square N/A \boxtimes Comments:

MS/MSD was not requested or required for this sampling event.

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CS Site Name:

Kobuk Feed & Fuel

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

Yes \square No \square N/A \boxtimes Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes \square No \square N/A \boxtimes 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.

	Yes□	No	$N/A \boxtimes$	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 \square No \square N/A \boxtimes Comments:

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 \boxtimes No \square N/A \square Comments:

Laboratory Report Date:

10/19/2019

CS Site Name:

Kobuk Feed & Fuel

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 for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes \boxtimes No \square N/A \square Comments:

All percent recoveries were within acceptable limits.

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

Yes \square No \square N/A \boxtimes Comments:

Qualification is not required.

iv. Data quality or usability affected?

Comments:

See Section 6.d.ii above

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

Yes \boxtimes No \square N/A \square 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 \square No \square N/A \boxtimes Comments:

All samples were shipped within a single cooler.

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

Yes \boxtimes No \square N/A \square Comments:

8260C SIM: Naphthalene (0.12 ug/L) was detected in the Trip Blank at concentrations below the LOQs and ADEC CULs. All results in which the analyte was detected in both the sample and the trip blank are qualified with the B data flag. Data quality is affected. A method blank was recorded for Naphthalene at similar levels to the trip blank detection. Cross-contamination may have occurred during the sampling event or transport, but the detection more likely occurred from the method blank detection. All affected results were either significantly above or below ADEC CULs and remain usable.

Laboratory Report Date:

10/19/2019

CS Site Name:

Kobuk Feed & Fuel

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

v. Data quality or usability affected?

Comments:

See Section 6.e.ii above.

- f. Field Duplicate
 - i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes \boxtimes No \square N/A \square Comments:

Kobuk-MW12-919 is the blind field duplicate to sample Kobuk-MW2-919.

ii. Submitted blind to lab?

Yes \boxtimes No \square N/A \square Comments:

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

RPD (%) = Absolute value of: $(R_1-R_2)/((R_1+R_2)/2)$ x 100

Where $R_1 =$ Sample Concentration $R_2 =$ Field Duplicate Concentration

Yes \square No \boxtimes N/A \square Comments:

The following analytes had an RPD above recommended limits for samples Kobuk-MW2-919 and Kobuk-MW12-919:

8260C SIM: 1,2-Dichloroethane (150.5%)

8260C: 4-Isopropyltoluene (75.6%)

AK101: GRO (52.6%)

Laboratory Report Date:

10/19/2019

CS Site Name:

Kobuk Feed & Fuel

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

Data quality for the analytes with RPDs exceeding control limits are affected. Associated results are considered estimated with an unknown bias and are qualified with the "QN" data flag. All associated results are less than ADEC CULs. Data is usable for the purpose of groundwater characterization.

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

Yes \square No \square N/A \boxtimes Comments:

Dedicated disposable sampling equipment was used to collect the samples.

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

Yes \square No \square N/A \boxtimes Comments:

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

iii. Data quality or usability affected?

Comments:

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

a. Defined and appropriate?

Yes \boxtimes No \square N/A \square Comments:

Appendix C-2:

2020 Laboratory Report 580-96236-1 & ADEC Lab Quality Checklist

🛟 eurofins

Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Seattle 5755 8th Street East Tacoma, WA 98424 Tel: (253)922-2310

Laboratory Job ID: 580-96236-1

Client Project/Site: Kobuk Feed & Fuel

For:

Alaska Resources & Environment PO BOX 83050 Fairbanks, Alaska 99708

Attn: Lyle Gresehover

M. Elaine Walker

Authorized for release by: 8/3/2020 3:01:40 PM Elaine Walker, Project Manager II (253)248-4972 elaine.walker@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

LINKS Review your project results through TOTOLACCESS Have a Question? Ask The Expert Visit us at: www.eurofinsus.com/Env

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Job ID: 580-96236-1

Laboratory: Eurofins TestAmerica, Seattle

Narrative

Job Narrative 580-96236-1

Receipt

Four samples were received on 7/23/2020 9:20 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8° C.

GC/MS VOA

Method 8260D: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-334180 recovered outside control limits for the following analytes: Chloromethane and Dichlorodifluoromethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 580-334450 recovered outside control limits for the following analytes: Dichlorodifluoromethane. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

Method AK102 & 103: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern were later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: Kobuk-MW1-0720 (580-96236-1).

Method AK102 & 103: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern were earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: Kobuk-MW2-0720 (580-96236-2) and Kobuk-MW12-0720 (580-96236-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client: Alaska Resources & Environment Project/Site: Kobuk Feed & Fuel

Qualifiers

Qualifiers		3
GC/MS VOA		
Qualifier	Qualifier Description	4
*	LCS or LCSD is outside acceptance limits.	
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	5
GC/MS Semi	VOA	
Qualifier	Qualifier Description	
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.	
Glossary		— 7
Abbreviation	These commonly used abbreviations may or may not be present in this report.	8
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis	
%R	Percent Recovery	Q
CFL	Contains Free Liquid	9
CFU	Colony Forming Unit	
CNF	Contains No Free Liquid	
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	
DL	Detection Limit (DoD/DOE)	
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample	
DLC	Decision Level Concentration (Radiochemistry)	
EDL	Estimated Detection Limit (Dioxin)	
LOD	Limit of Detection (DoD/DOE)	
LOQ	Limit of Quantitation (DoD/DOE)	
MCL	EPA recommended "Maximum Contaminant Level"	
MDA	Minimum Detectable Activity (Radiochemistry)	
MDC	Minimum Detectable Concentration (Radiochemistry)	
MDL	Method Detection Limit	
ML	Minimum Level (Dioxin)	
MPN	Most Probable Number	
MQL	Method Quantitation Limit	
NC	Not Calculated	
ND	Not Detected at the reporting limit (or MDL or EDL if shown)	
NEG	Negative / Absent	
POS	Positive / Present	
PQL	Practical Quantitation Limit	
PRES	Presumptive	
QC	Quality Control	
RER	Relative Error Ratio (Radiochemistry)	
RL	Reporting Limit or Requested Limit (Radiochemistry)	
RPD	Relative Percent Difference, a measure of the relative difference between two points	
TEF	Toxicity Equivalent Factor (Dioxin)	
TEQ	Toxicity Equivalent Quotient (Dioxin)	
TNTC	Too Numerous To Count	

o-Terphenyl

n-Triacontane-d62

Client Sample ID: Kobuk-MW1-0720 Date Collected: 07/22/20 12:30 Date Received: 07/23/20 09:20

Method: 8260D - Volatile Organic Compounds by GC/MS

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lah	יחו	500 06006 1
JOD	ID:	580-96236-1

Lab Sample ID: 580-96236-1

Matrix: Water

1

1

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	6.7		3.0	0.24	ug/L			07/25/20 03:29	1
Toluene	ND		2.0	0.39	ug/L			07/25/20 03:29	1
Ethylbenzene	ND		3.0	0.50	ug/L			07/25/20 03:29	1
m-Xylene & p-Xylene	ND		3.0	0.75	ug/L			07/25/20 03:29	1
o-Xylene	ND		2.0	0.39	ug/L			07/25/20 03:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120					07/25/20 03:29	1
4-Bromofluorobenzene (Surr)	100		80 - 120					07/25/20 03:29	1
Dibromofluoromethane (Surr)	101		80 - 120					07/25/20 03:29	1
1,2-Dichloroethane-d4 (Surr)	106		80 - 126					07/25/20 03:29	1
Method: AK101 - Alaska - Ga	soline Range	e Organice	3 (GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25	0.10	mg/L			07/27/20 19:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	82		50 - 150					07/27/20 19:33	1
Method: AK102 & 103 - Alasi	ka - Diesel Ra	ange Orga	nics & Resid	ual Ran	ge Orgai	nics (C	;C)		
Analyte		Qualifier	RL	MDL		D	Prepared	Analyzed	Dil Fac
DRO (nC10- <nc25)< td=""><td>0.38</td><td></td><td>0.12</td><td>0.084</td><td>mg/L</td><td></td><td>07/28/20 13:55</td><td>07/29/20 02:52</td><td>1</td></nc25)<>	0.38		0.12	0.084	mg/L		07/28/20 13:55	07/29/20 02:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

50 - 150

50 - 150

07/28/20 13:55 07/29/20 02:52

07/28/20 13:55 07/29/20 02:52

RL

MDL Unit

D

Prepared

Analyte

Client Sample ID: Kobuk-MW2-0720 Date Collected: 07/22/20 13:45 Date Received: 07/23/20 09:20

Method: 8260D - Volatile Organic Compounds by GC/MS

Result Qualifier

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND	*	20	0.28	ug/L			07/28/20 21:12	1
Vinyl chloride	ND		1.0		ug/L			07/28/20 21:12	1
Bromomethane	ND		6.0	0.21	ug/L			07/28/20 21:12	1
Chloroethane	ND		5.0	0.35	ug/L			07/28/20 21:12	1
Trichlorofluoromethane	ND		3.0	0.63	ug/L			07/28/20 21:12	1
1,1-Dichloroethene	ND		4.0	0.28	ug/L			07/28/20 21:12	1
Carbon disulfide	ND		3.0	0.53	ug/L			07/28/20 21:12	1
Acetone	ND		50	3.2	ug/L			07/28/20 21:12	1
Methylene Chloride	ND		5.0	1.4	ug/L			07/28/20 21:12	1
trans-1,2-Dichloroethene	ND		3.0	0.39	ug/L			07/28/20 21:12	1
1,1-Dichloroethane	ND		2.0	0.22	ug/L			07/28/20 21:12	1
2,2-Dichloropropane	ND		3.0	0.32	ug/L			07/28/20 21:12	1
2-Butanone	ND		20	4.7	ug/L			07/28/20 21:12	1
cis-1,2-Dichloroethene	ND		3.0	0.69	ug/L			07/28/20 21:12	1
Bromochloromethane	ND		2.0	0.29	ug/L			07/28/20 21:12	1
Chloroform	ND		5.0	0.26	ug/L			07/28/20 21:12	1
1,1,1-Trichloroethane	ND		3.0	0.39	ug/L			07/28/20 21:12	1
Carbon tetrachloride	ND		3.0	0.30	ug/L			07/28/20 21:12	1
1,1-Dichloropropene	ND		3.0	0.29	ug/L			07/28/20 21:12	1
Benzene	90		3.0	0.24	ug/L			07/28/20 21:12	1
1,2-Dichloroethane	ND		2.0	0.42	ug/L			07/28/20 21:12	1
Trichloroethene	ND		3.0	0.26	ug/L			07/28/20 21:12	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			07/28/20 21:12	1
Dibromomethane	ND		2.0	0.34	ug/L			07/28/20 21:12	1
Bromodichloromethane	ND		2.0	0.29	ug/L			07/28/20 21:12	1
cis-1,3-Dichloropropene	ND		1.0	0.20	ug/L			07/28/20 21:12	1
4-Methyl-2-pentanone	ND		15	2.5	ug/L			07/28/20 21:12	1
Toluene	4.0		2.0	0.39	ug/L			07/28/20 21:12	1
trans-1,3-Dichloropropene	ND		1.0	0.16	ug/L			07/28/20 21:12	1
1,1,2-Trichloroethane	ND		1.0	0.24	ug/L			07/28/20 21:12	1
Tetrachloroethene	ND		3.0	0.41	ug/L			07/28/20 21:12	1
1,3-Dichloropropane	ND		2.0	0.35	ug/L			07/28/20 21:12	1
2-Hexanone	ND		20	4.0	ug/L			07/28/20 21:12	1
Dibromochloromethane	ND		2.0	0.43	ug/L			07/28/20 21:12	1
1,2-Dibromoethane	ND		2.0	0.40	ug/L			07/28/20 21:12	1
Chlorobenzene	ND		2.0	0.44	ug/L			07/28/20 21:12	1
Ethylbenzene	22		3.0	0.50	ug/L			07/28/20 21:12	1
1,1,1,2-Tetrachloroethane	ND		2.0	0.18	ug/L			07/28/20 21:12	1
m-Xylene & p-Xylene	59		3.0	0.75	ug/L			07/28/20 21:12	1
o-Xylene	18		2.0	0.39	ug/L			07/28/20 21:12	1
Styrene	ND		5.0	1.0	ug/L			07/28/20 21:12	1
Bromoform	ND		3.0	0.56	ug/L			07/28/20 21:12	1
Isopropylbenzene	4.5		2.0	0.44	ug/L			07/28/20 21:12	1
Bromobenzene	ND		2.0	0.43	ug/L			07/28/20 21:12	1
N-Propylbenzene	4.0		3.0	0.50	ug/L			07/28/20 21:12	1
1,1,2,2-Tetrachloroethane	ND		3.0	0.52	ug/L			07/28/20 21:12	1
4-Chlorotoluene	ND		2.0	0.38	ug/L			07/28/20 21:12	1
t-Butylbenzene	ND		3.0	0.58	ug/L			07/28/20 21:12	1
1,2,4-Trimethylbenzene	15		3.0	0.61	ug/L			07/28/20 21:12	1
1									

Job ID: 580-96236-1

Lab Sample ID: 580-96236-2

Analyzed

Matrix: Water

Dil Fac

5

Eurofins TestAmerica, Seattle

Client Sample ID: Kobuk-MW2-0720 Date Collected: 07/22/20 13:45 Date Received: 07/23/20 09:20

Lab Sample ID: 580-96236-2

Matrix: Water

5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.70	J	3.0	0.49	ug/L			07/28/20 21:12	1
1,3-Dichlorobenzene	ND		2.0	0.18	ug/L			07/28/20 21:12	1
4-Isopropyltoluene	ND		3.0	0.28	ug/L			07/28/20 21:12	1
1,4-Dichlorobenzene	ND		4.0	0.46	ug/L			07/28/20 21:12	1
n-Butylbenzene	ND		3.0	0.44	ug/L			07/28/20 21:12	1
1,2-Dichlorobenzene	ND		2.0	0.46	ug/L			07/28/20 21:12	1
1,2-Dibromo-3-Chloropropane	ND		10	0.57	ug/L			07/28/20 21:12	1
1,2,4-Trichlorobenzene	ND		2.0	0.33	ug/L			07/28/20 21:12	1
1,2,3-Trichlorobenzene	ND		5.0	0.43	ug/L			07/28/20 21:12	1
Hexachlorobutadiene	ND		6.0	0.79	ug/L			07/28/20 21:12	1
Naphthalene	7.2		4.0	0.93	ug/L			07/28/20 21:12	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/28/20 21:12	1
1,2,3-Trichloropropane	ND		2.0	0.41	ug/L			07/28/20 21:12	1
1,3,5-Trimethylbenzene	5.5		3.0	0.55	ug/L			07/28/20 21:12	1
2-Chlorotoluene	ND		3.0	0.51	ug/L			07/28/20 21:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluono de (Surr)	101		00 100			-		07/28/20 21.12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
Toluene-d8 (Surr)	104		80 - 120		07/28/20 21:12	1	
4-Bromofluorobenzene (Surr)	102		80 - 120		07/28/20 21:12	1	
Dibromofluoromethane (Surr)	100		80 - 120		07/28/20 21:12	1	
1,2-Dichloroethane-d4 (Surr)	105		80 - 126		07/28/20 21:12	1	

Method: 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*	10	0.53	ug/L			07/31/20 15:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120					07/31/20 15:54	1
4-Bromofluorobenzene (Surr)	100		80 - 120					07/31/20 15:54	1
Dibromofluoromethane (Surr)	101		80 - 120					07/31/20 15:54	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 126					07/31/20 15:54	1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	3.6		0.11	0.035	ug/L		07/24/20 10:03	07/25/20 01:20	1
2-Methylnaphthalene	0.29		0.22	0.043	ug/L		07/24/20 10:03	07/25/20 01:20	1
1-Methylnaphthalene	0.52		0.11	0.021	ug/L		07/24/20 10:03	07/25/20 01:20	1
Acenaphthylene	ND		0.056	0.010	ug/L		07/24/20 10:03	07/25/20 01:20	1
Acenaphthene	ND		0.11	0.016	ug/L		07/24/20 10:03	07/25/20 01:20	1
Fluorene	ND		0.11	0.019	ug/L		07/24/20 10:03	07/25/20 01:20	1
Phenanthrene	ND		0.11	0.035	ug/L		07/24/20 10:03	07/25/20 01:20	1
Anthracene	ND		0.11	0.024	ug/L		07/24/20 10:03	07/25/20 01:20	1
Fluoranthene	ND		0.22	0.056	ug/L		07/24/20 10:03	07/25/20 01:20	1
Pyrene	ND		0.11	0.037	ug/L		07/24/20 10:03	07/25/20 01:20	1
Benzo[a]anthracene	ND		0.056	0.016	ug/L		07/24/20 10:03	07/25/20 01:20	1
Chrysene	ND		0.11	0.018	ug/L		07/24/20 10:03	07/25/20 01:20	1
Benzo[b]fluoranthene	ND		0.056	0.012	ug/L		07/24/20 10:03	07/25/20 01:20	1
Benzo[k]fluoranthene	ND		0.056	0.013	ug/L		07/24/20 10:03	07/25/20 01:20	1
Benzo[a]pyrene	ND		0.11	0.012	ug/L		07/24/20 10:03	07/25/20 01:20	1
Indeno[1,2,3-cd]pyrene	ND		0.056	0.016	ug/L		07/24/20 10:03	07/25/20 01:20	1

Client Sample ID: Kobuk-MW2-0720 Date Collected: 07/22/20 13:45 Date Received: 07/23/20 09:20

Job ID: 580-96236-1

Lab Sample ID: 580-96236-2 Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		0.11	0.017	ug/L		07/24/20 10:03	07/25/20 01:20	1
Benzo[g,h,i]perylene	ND		0.056	0.013	ug/L		07/24/20 10:03	07/25/20 01:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	86		29 - 150				07/24/20 10:03	07/25/20 01:20	1
Method: AK101 - Alaska - Gas	soline Range	e Organics	s (GC)						
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	2.1		0.25	0.10	mg/L			07/27/20 19:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		50 - 150					07/27/20 19:57	1
Method: AK102 & 103 - Alask	a - Diesel Ra	ange Orga	nics & Resid	ual Ran	qe Orqai	nics (C	SC)		
Analyte		Qualifier	RL	MDL		Ď	Prepared	Analyzed	Dil Fac
DRO (nC10- <nc25)< td=""><td>1.8</td><td></td><td>0.12</td><td>0.080</td><td>mg/L</td><td></td><td>07/28/20 13:55</td><td>07/29/20 02:32</td><td>1</td></nc25)<>	1.8		0.12	0.080	mg/L		07/28/20 13:55	07/29/20 02:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
							07/00/00 10 55	07/00/00 00 00	
o-Terphenyl	88		50 - 150				07/28/20 13:55	07/29/20 02:32	1

Client Sample ID: Kobuk-MW12-0720 Date Collected: 07/22/20 14:00 Date Received: 07/23/20 09:20

Job	ID:	580-96236-1
000	·D.	000 00200 1

Lab Sample ID: 580-96236-3

Matrix: Water

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND	*	20		ug/L			07/28/20 21:37	1
/inyl chloride	ND		1.0		ug/L			07/28/20 21:37	1
Bromomethane	ND		6.0		ug/L			07/28/20 21:37	1
Chloroethane	ND		5.0		ug/L			07/28/20 21:37	1
richlorofluoromethane	ND		3.0		ug/L			07/28/20 21:37	1
,1-Dichloroethene	ND		4.0		ug/L			07/28/20 21:37	1
Carbon disulfide	ND		3.0	0.53	ug/L			07/28/20 21:37	1
Acetone	52		50	3.2	ug/L			07/28/20 21:37	1
lethylene Chloride	ND		5.0	1.4	ug/L			07/28/20 21:37	1
ans-1,2-Dichloroethene	ND		3.0	0.39	ug/L			07/28/20 21:37	1
,1-Dichloroethane	ND		2.0	0.22	ug/L			07/28/20 21:37	1
,2-Dichloropropane	ND		3.0	0.32	ug/L			07/28/20 21:37	1
-Butanone	ND		20	4.7	ug/L			07/28/20 21:37	1
is-1,2-Dichloroethene	ND		3.0		ug/L			07/28/20 21:37	1
Bromochloromethane	ND		2.0		ug/L			07/28/20 21:37	1
Chloroform	ND		5.0		ug/L			07/28/20 21:37	1
,1,1-Trichloroethane	ND		3.0		ug/L			07/28/20 21:37	1
arbon tetrachloride	ND		3.0		ug/L			07/28/20 21:37	1
,1-Dichloropropene	ND		3.0		ug/L			07/28/20 21:37	1
enzene	88		3.0		ug/L			07/28/20 21:37	1
,2-Dichloroethane	0.61		2.0		ug/L			07/28/20 21:37	1
richloroethene	ND	••••••	3.0		ug/L			07/28/20 21:37	1
2-Dichloropropane	ND		1.0		ug/L			07/28/20 21:37	1
ibromomethane	ND		2.0		ug/L			07/28/20 21:37	1
romodichloromethane	ND		2.0		ug/L			07/28/20 21:37	י 1
					-				
is-1,3-Dichloropropene	ND		1.0		ug/L			07/28/20 21:37	1
-Methyl-2-pentanone	ND		15		ug/L			07/28/20 21:37	1
oluene	4.0		2.0		ug/L			07/28/20 21:37	1
ans-1,3-Dichloropropene	ND		1.0		ug/L			07/28/20 21:37	1
,1,2-Trichloroethane	ND		1.0		ug/L			07/28/20 21:37	1
etrachloroethene	ND		3.0		ug/L			07/28/20 21:37	1
,3-Dichloropropane	ND		2.0		ug/L			07/28/20 21:37	1
-Hexanone	ND		20		ug/L			07/28/20 21:37	1
Dibromochloromethane	ND		2.0		ug/L			07/28/20 21:37	1
,2-Dibromoethane	ND		2.0	0.40	ug/L			07/28/20 21:37	1
Chlorobenzene	ND		2.0		ug/L			07/28/20 21:37	1
thylbenzene	22		3.0	0.50	ug/L			07/28/20 21:37	1
,1,1,2-Tetrachloroethane	ND		2.0	0.18	ug/L			07/28/20 21:37	1
1-Xylene & p-Xylene	60		3.0	0.75	ug/L			07/28/20 21:37	1
-Xylene	19		2.0	0.39	ug/L			07/28/20 21:37	1
tyrene	ND		5.0	1.0	ug/L			07/28/20 21:37	1
romoform	ND		3.0	0.56	ug/L			07/28/20 21:37	1
sopropylbenzene	4.5		2.0	0.44	ug/L			07/28/20 21:37	1
romobenzene	ND		2.0		ug/L			07/28/20 21:37	1
I-Propylbenzene	4.5		3.0		ug/L			07/28/20 21:37	1
,1,2,2-Tetrachloroethane	ND		3.0		ug/L			07/28/20 21:37	1
-Chlorotoluene	ND		2.0		ug/L			07/28/20 21:37	1
Butylbenzene	ND		3.0		ug/L			07/28/20 21:37	1
,2,4-Trimethylbenzene	15		3.0 3.0		ug/L			07/28/20 21:37	' 1

Client Sample ID: Kobuk-MW12-0720 Date Collected: 07/22/20 14:00 Date Received: 07/23/20 09:20

Lab Sample ID: 580-96236-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
sec-Butylbenzene	0.76	J	3.0	0.49	ug/L			07/28/20 21:37	1
1,3-Dichlorobenzene	ND		2.0	0.18	ug/L			07/28/20 21:37	1
4-Isopropyltoluene	ND		3.0	0.28	ug/L			07/28/20 21:37	1
1,4-Dichlorobenzene	ND		4.0	0.46	ug/L			07/28/20 21:37	1
n-Butylbenzene	ND		3.0	0.44	ug/L			07/28/20 21:37	1
1,2-Dichlorobenzene	ND		2.0	0.46	ug/L			07/28/20 21:37	1
1,2-Dibromo-3-Chloropropane	ND		10	0.57	ug/L			07/28/20 21:37	1
1,2,4-Trichlorobenzene	ND		2.0	0.33	ug/L			07/28/20 21:37	1
1,2,3-Trichlorobenzene	ND		5.0	0.43	ug/L			07/28/20 21:37	1
Hexachlorobutadiene	ND		6.0	0.79	ug/L			07/28/20 21:37	1
Naphthalene	7.1		4.0	0.93	ug/L			07/28/20 21:37	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/28/20 21:37	1
1,2,3-Trichloropropane	ND		2.0	0.41	ug/L			07/28/20 21:37	1
1,3,5-Trimethylbenzene	6.0		3.0	0.55	ug/L			07/28/20 21:37	1
2-Chlorotoluene	ND		3.0	0.51	ug/L			07/28/20 21:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzea	Dii Fac
Toluene-d8 (Surr)	104		80 - 120	-		07/28/20 21:37	1
4-Bromofluorobenzene (Surr)	99		80 - 120			07/28/20 21:37	1
Dibromofluoromethane (Surr)	99		80 - 120			07/28/20 21:37	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 126			07/28/20 21:37	1

Method: 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte		Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	*	10	0.53	ug/L			07/31/20 16:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		80 - 120					07/31/20 16:18	1
4-Bromofluorobenzene (Surr)	101		80 - 120					07/31/20 16:18	1
Dibromofluoromethane (Surr)	100		80 - 120					07/31/20 16:18	1
1,2-Dichloroethane-d4 (Surr)	104		80 - 126					07/31/20 16:18	1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	3.3		0.12	0.036	ug/L		07/24/20 10:03	07/25/20 01:44	1
2-Methylnaphthalene	0.22	J	0.23	0.045	ug/L		07/24/20 10:03	07/25/20 01:44	1
1-Methylnaphthalene	0.48		0.12	0.022	ug/L		07/24/20 10:03	07/25/20 01:44	1
Acenaphthylene	ND		0.058	0.010	ug/L		07/24/20 10:03	07/25/20 01:44	1
Acenaphthene	ND		0.12	0.016	ug/L		07/24/20 10:03	07/25/20 01:44	1
Fluorene	ND		0.12	0.020	ug/L		07/24/20 10:03	07/25/20 01:44	1
Phenanthrene	ND		0.12	0.036	ug/L		07/24/20 10:03	07/25/20 01:44	1
Anthracene	ND		0.12	0.025	ug/L		07/24/20 10:03	07/25/20 01:44	1
Fluoranthene	ND		0.23	0.058	ug/L		07/24/20 10:03	07/25/20 01:44	1
Pyrene	ND		0.12	0.038	ug/L		07/24/20 10:03	07/25/20 01:44	1
Benzo[a]anthracene	ND		0.058	0.016	ug/L		07/24/20 10:03	07/25/20 01:44	1
Chrysene	ND		0.12	0.018	ug/L		07/24/20 10:03	07/25/20 01:44	1
Benzo[b]fluoranthene	ND		0.058	0.013	ug/L		07/24/20 10:03	07/25/20 01:44	1
Benzo[k]fluoranthene	ND		0.058	0.014	ug/L		07/24/20 10:03	07/25/20 01:44	1
Benzo[a]pyrene	ND		0.12	0.013	ug/L		07/24/20 10:03	07/25/20 01:44	1
Indeno[1,2,3-cd]pyrene	ND		0.058	0.016	ug/L		07/24/20 10:03	07/25/20 01:44	1

Eurofins TestAmerica, Seattle

Client Sample ID: Kobuk-MW12-0720 Date Collected: 07/22/20 14:00 Date Received: 07/23/20 09:20

Lab Sample ID: 580-96236-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		0.12	0.017	ug/L		07/24/20 10:03	07/25/20 01:44	1
Benzo[g,h,i]perylene	ND		0.058	0.014	ug/L		07/24/20 10:03	07/25/20 01:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Terphenyl-d14	87		29 - 150				07/24/20 10:03	07/25/20 01:44	1
Method: AK101 - Alaska - Gas	oline Range	e Organics	s (GC)						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	2.1		0.25	0.10	mg/L			07/27/20 20:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150					07/27/20 20:21	1
Method: AK102 & 103 - Alaska	a - Diesel Ra	ange Orga	nics & Resid	ual Ran	ge Orgai	nics (C	SC)		
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (nC10- <nc25)< td=""><td>1.9</td><td></td><td>0.12</td><td>0.082</td><td>mg/L</td><td></td><td>07/28/20 13:55</td><td>07/29/20 02:12</td><td>1</td></nc25)<>	1.9		0.12	0.082	mg/L		07/28/20 13:55	07/29/20 02:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fa
o-Terphenyl	91		50 - 150				07/28/20 13:55	07/29/20 02:12	

Client Sample Results

Lab Sample ID: 580-96236-4

Matrix: Water

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Client Sample ID: Trip Blank Date Collected: 07/22/20 12:00 Date Received: 07/23/20 09:20

Analyte	Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND *	10	0.53	ug/L			07/28/20 20:22	1
Vinyl chloride	ND	1.0	0.22	ug/L			07/28/20 20:22	1
Bromomethane	ND	6.0	0.21	ug/L			07/28/20 20:22	1
Chloroethane	ND	5.0	0.35	ug/L			07/28/20 20:22	1
Trichlorofluoromethane	ND	3.0	0.63	-			07/28/20 20:22	1
1,1-Dichloroethene	ND	4.0	0.28	ug/L			07/28/20 20:22	1
Carbon disulfide	ND	3.0	0.53	0			07/28/20 20:22	1
Acetone	18 J	50		ug/L			07/28/20 20:22	
Methylene Chloride	ND	5.0		ug/L			07/28/20 20:22	
rans-1,2-Dichloroethene	ND	3.0	0.39	-			07/28/20 20:22	
1,1-Dichloroethane	ND	2.0	0.22	-			07/28/20 20:22	
2,2-Dichloropropane	ND	3.0	0.32	0			07/28/20 20:22	
2-Butanone	ND	20		ug/L			07/28/20 20:22	· · · · · · .
cis-1,2-Dichloroethene	ND	3.0	0.69	-			07/28/20 20:22	
Bromochloromethane	ND	2.0	0.29	-			07/28/20 20:22	
Chloroform	ND	5.0	0.26	-			07/28/20 20:22	
1,1,1-Trichloroethane	ND	3.0	0.20	-			07/28/20 20:22	
Carbon tetrachloride	ND	3.0		-			07/28/20 20:22	
			0.30	-				
1,1-Dichloropropene	ND	3.0	0.29	-			07/28/20 20:22	
Benzene	ND	3.0	0.24	-			07/28/20 20:22	
1,2-Dichloroethane	ND	2.0	0.42	•			07/28/20 20:22	
Trichloroethene	ND	3.0	0.26	-			07/28/20 20:22	
1,2-Dichloropropane	ND	1.0	0.18	-			07/28/20 20:22	
Dibromomethane	ND	2.0	0.34				07/28/20 20:22	
Bromodichloromethane	ND	2.0	0.29	•			07/28/20 20:22	
cis-1,3-Dichloropropene	ND	1.0	0.20	-			07/28/20 20:22	
4-Methyl-2-pentanone	ND	15		ug/L			07/28/20 20:22	
Toluene	ND	2.0	0.39	0			07/28/20 20:22	
rans-1,3-Dichloropropene	ND	1.0	0.16	-			07/28/20 20:22	
1,1,2-Trichloroethane	ND	1.0	0.24	-			07/28/20 20:22	
Tetrachloroethene	ND	3.0	0.41	-			07/28/20 20:22	
1,3-Dichloropropane	ND	2.0	0.35	ug/L			07/28/20 20:22	
2-Hexanone	ND	20	4.0	ug/L			07/28/20 20:22	
Dibromochloromethane	ND	2.0	0.43	ug/L			07/28/20 20:22	
1,2-Dibromoethane	ND	2.0	0.40	ug/L			07/28/20 20:22	
Chlorobenzene	ND	2.0	0.44	ug/L			07/28/20 20:22	
Ethylbenzene	ND	3.0	0.50	ug/L			07/28/20 20:22	
1,1,1,2-Tetrachloroethane	ND	2.0	0.18	ug/L			07/28/20 20:22	
n-Xylene & p-Xylene	ND	3.0	0.75	ug/L			07/28/20 20:22	
o-Xylene	ND	2.0	0.39	ug/L			07/28/20 20:22	
Styrene	ND	5.0		ug/L			07/28/20 20:22	
Bromoform	ND	3.0	0.56	-			07/28/20 20:22	
sopropylbenzene	ND	2.0	0.44				07/28/20 20:22	
Bromobenzene	ND	2.0	0.43	-			07/28/20 20:22	
N-Propylbenzene	ND	3.0		ug/L			07/28/20 20:22	
1,1,2,2-Tetrachloroethane	ND	3.0	0.52	-			07/28/20 20:22	
4-Chlorotoluene	ND	2.0	0.38	-			07/28/20 20:22	
-Butylbenzene	ND	3.0	0.58	-			07/28/20 20:22	
-Butybenzene 1,2,4-Trimethylbenzene	ND	3.0 3.0	0.56 0.61	-			07/28/20 20:22	

Eurofins TestAmerica, Seattle

Lab Sample ID: 580-96236-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
sec-Butylbenzene	ND		3.0	0.49	ug/L			07/28/20 20:22	1	7
1,3-Dichlorobenzene	ND		2.0	0.18	ug/L			07/28/20 20:22	1	
4-Isopropyltoluene	ND		3.0	0.28	ug/L			07/28/20 20:22	1	
1,4-Dichlorobenzene	ND		4.0	0.46	ug/L			07/28/20 20:22	1	
n-Butylbenzene	ND		3.0	0.44	ug/L			07/28/20 20:22	1	
1,2-Dichlorobenzene	ND		2.0	0.46	ug/L			07/28/20 20:22	1	
1,2-Dibromo-3-Chloropropane	ND		10	0.57	ug/L			07/28/20 20:22	1	
1,2,4-Trichlorobenzene	ND		2.0	0.33	ug/L			07/28/20 20:22	1	
1,2,3-Trichlorobenzene	ND		5.0	0.43	ug/L			07/28/20 20:22	1	
Hexachlorobutadiene	ND		6.0	0.79	ug/L			07/28/20 20:22	1	
Naphthalene	ND		4.0	0.93	ug/L			07/28/20 20:22	1	
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/28/20 20:22	1	
1,2,3-Trichloropropane	ND		2.0	0.41	ug/L			07/28/20 20:22	1	
1,3,5-Trimethylbenzene	ND		3.0	0.55	ug/L			07/28/20 20:22	1	
2-Chlorotoluene	ND		3.0	0.51	ug/L			07/28/20 20:22	1	
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac	

Surroyale	%Recovery	Quaimer	Linnts		Frepareu	Analyzeu	DIIFac	
Toluene-d8 (Surr)	102		80 - 120	-		07/28/20 20:22	1	
4-Bromofluorobenzene (Surr)	98		80 - 120			07/28/20 20:22	1	
Dibromofluoromethane (Surr)	100		80 - 120			07/28/20 20:22	1	
1,2-Dichloroethane-d4 (Surr)	103		80 - 126			07/28/20 20:22	1	

Method: 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
Chloromethane	ND		20	0.28 ug/L			07/31/20 15:04	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120				07/31/20 15:04	1
4-Bromofluorobenzene (Surr)	98		80 - 120				07/31/20 15:04	1
Dibromofluoromethane (Surr)	NaN		80 - 120				07/31/20 15:04	1
1,2-Dichloroethane-d4 (Surr)	NaN		80 - 126				07/31/20 15:04	1

Method: AK101 - Alaska - Gasoline Rang	ge Organics (GC)
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Analyte Gasoline Range Organics (GRO) -C6-C10	Result C	Qualifier	RL 0.25	MDL 0.10	Unit mg/L	<u>D</u>	Prepared	Analyzed 07/27/20 20:45	Dil Fac 1
Surrogate 4-Bromofluorobenzene (Surr)	%Recovery G	Qualifier	Limits				Prepared	Analyzed	Dil Fac

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Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 580-333913/5

Client Sample ID: Method Blank Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Matrix: Water Analysis Batch: 333913

-	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.0	0.24	ug/L			07/24/20 18:20	1
Toluene	ND		2.0	0.39	ug/L			07/24/20 18:20	1
Ethylbenzene	ND		3.0	0.50	ug/L			07/24/20 18:20	1
m-Xylene & p-Xylene	ND		3.0	0.75	ug/L			07/24/20 18:20	1
o-Xylene	ND		2.0	0.39	ug/L			07/24/20 18:20	1
	МВ	МВ							

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
Toluene-d8 (Surr)	102		80 - 120		07/24/20 18:20	1	-
4-Bromofluorobenzene (Surr)	99		80 - 120		07/24/20 18:20	1	
Dibromofluoromethane (Surr)	101		80 - 120		07/24/20 18:20	1	
1,2-Dichloroethane-d4 (Surr)	105		80 - 126		07/24/20 18:20	1	

Lab Sample ID: LCS 580-333913/6 **Matrix: Water** Analysis Batch: 333913

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Benzene	10.0	10.7		ug/L		107	82 - 122	
Toluene	10.0	10.5		ug/L		105	80 - 120	
Ethylbenzene	10.0	10.5		ug/L		105	80 - 120	
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	80 - 120	
o-Xylene	10.0	10.2		ug/L		102	80 - 125	
m-Xylene & p-Xylene	10.0	10.3		ug/L		103	80 - 120	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	101		80 - 120
1,2-Dichloroethane-d4 (Surr)	106		80 - 126

Lab Sample ID: LCSD 580-333913/7 **Matrix: Water** Analysis Batch: 333913

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	10.0	10.6		ug/L		106	82 - 122	1	14
Toluene	10.0	10.5		ug/L		105	80 - 120	1	13
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120	1	14
m-Xylene & p-Xylene	10.0	10.2		ug/L		102	80 - 120	1	14
o-Xylene	10.0	10.1		ug/L		101	80 - 125	1	16

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	102		80 - 120
1,2-Dichloroethane-d4 (Surr)	103		80 - 126

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6

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-334180/5

Matrix: Water Analysis Batch: 334180

Client Sample ID: Method Blank Prep Type: Total/NA

Analysis Batch: 334180	MR	MB							
Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		10	0.53	ug/L			07/28/20 18:43	1
Chloromethane	ND		20	0.28	ug/L			07/28/20 18:43	1
Vinyl chloride	ND		1.0	0.22	ug/L			07/28/20 18:43	1
Bromomethane	ND		6.0	0.21	ug/L			07/28/20 18:43	1
Chloroethane	ND		5.0	0.35	ug/L			07/28/20 18:43	1
Trichlorofluoromethane	ND		3.0	0.63	ug/L			07/28/20 18:43	1
1,1-Dichloroethene	ND		4.0	0.28	ug/L			07/28/20 18:43	1
Carbon disulfide	ND		3.0	0.53	ug/L			07/28/20 18:43	1
Acetone	ND		50	3.2	ug/L			07/28/20 18:43	1
Methylene Chloride	ND		5.0	1.4	ug/L			07/28/20 18:43	1
trans-1,2-Dichloroethene	ND		3.0	0.39	ug/L			07/28/20 18:43	1
1,1-Dichloroethane	ND		2.0	0.22	-			07/28/20 18:43	1
2,2-Dichloropropane	ND		3.0	0.32	ug/L			07/28/20 18:43	1
2-Butanone	ND		20		ug/L			07/28/20 18:43	1
cis-1,2-Dichloroethene	ND		3.0	0.69	-			07/28/20 18:43	1
Bromochloromethane	ND		2.0	0.29	-			07/28/20 18:43	1
Chloroform	ND		5.0	0.26	-			07/28/20 18:43	1
1,1,1-Trichloroethane	ND		3.0	0.39	-			07/28/20 18:43	1
Carbon tetrachloride	ND		3.0	0.30	-			07/28/20 18:43	1
1,1-Dichloropropene	ND		3.0	0.29	-			07/28/20 18:43	1
Benzene	ND		3.0	0.24	-			07/28/20 18:43	1
1,2-Dichloroethane	ND		2.0	0.42	-			07/28/20 18:43	1
Trichloroethene	ND		3.0	0.26	-			07/28/20 18:43	1
1,2-Dichloropropane	ND		1.0	0.18	-			07/28/20 18:43	1
Dibromomethane	ND		2.0	0.34	-			07/28/20 18:43	1
Bromodichloromethane	ND		2.0	0.29	-			07/28/20 18:43	1
cis-1,3-Dichloropropene	ND		1.0	0.20	-			07/28/20 18:43	1
4-Methyl-2-pentanone	ND		15		ug/L			07/28/20 18:43	1
Toluene	ND		2.0	0.39	-			07/28/20 18:43	1
trans-1,3-Dichloropropene	ND		1.0	0.16	-			07/28/20 18:43	1
1,1,2-Trichloroethane	ND		1.0	0.24	-			07/28/20 18:43	1
Tetrachloroethene	ND		3.0	0.41	-			07/28/20 18:43	1
1,3-Dichloropropane	ND		2.0	0.35				07/28/20 18:43	1
2-Hexanone	ND		20		ug/L			07/28/20 18:43	1
Dibromochloromethane	ND		2.0	0.43	-			07/28/20 18:43	1
1,2-Dibromoethane	ND		2.0	0.40	-			07/28/20 18:43	1
Chlorobenzene	ND		2.0	0.44				07/28/20 18:43	1
Ethylbenzene	ND		3.0	0.50	-			07/28/20 18:43	1
1,1,1,2-Tetrachloroethane	ND		2.0	0.18	-			07/28/20 18:43	1
m-Xylene & p-Xylene	ND		3.0		ug/L			07/28/20 18:43	1
o-Xylene	ND		2.0	0.39				07/28/20 18:43	1
Styrene	ND		5.0		ug/L			07/28/20 18:43	1
Bromoform	ND		3.0	0.56				07/28/20 18:43	1
Isopropylbenzene	ND		2.0	0.44	-			07/28/20 18:43	1
Bromobenzene	ND		2.0	0.43	-			07/28/20 18:43	1
N-Propylbenzene	ND		3.0		ug/L			07/28/20 18:43	· · · · · · · 1
1,1,2,2-Tetrachloroethane	ND		3.0	0.52				07/28/20 18:43	1
4-Chlorotoluene	ND		2.0	0.38	-			07/28/20 18:43	1
	ND		2.0	5.00	-9, -			51/20/20 10.40	•

Eurofins TestAmerica, Seattle

Prep Type: Total/NA

Client Sample ID: Method Blank

2 3 4 5 6

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 580-334180/5 Matrix: Water

Analysis Batch: 334180

Analysis Batch. 554100									
		MB				_			
Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
t-Butylbenzene	ND		3.0	0.58	ug/L			07/28/20 18:43	1
1,2,4-Trimethylbenzene	ND		3.0	0.61	ug/L			07/28/20 18:43	1
sec-Butylbenzene	ND		3.0	0.49	ug/L			07/28/20 18:43	1
1,3-Dichlorobenzene	ND		2.0	0.18	ug/L			07/28/20 18:43	1
4-Isopropyltoluene	ND		3.0	0.28	ug/L			07/28/20 18:43	1
1,4-Dichlorobenzene	ND		4.0	0.46	ug/L			07/28/20 18:43	1
n-Butylbenzene	ND		3.0	0.44	ug/L			07/28/20 18:43	1
1,2-Dichlorobenzene	ND		2.0	0.46	ug/L			07/28/20 18:43	1
1,2-Dibromo-3-Chloropropane	ND		10	0.57	ug/L			07/28/20 18:43	1
1,2,4-Trichlorobenzene	ND		2.0	0.33	ug/L			07/28/20 18:43	1
1,2,3-Trichlorobenzene	ND		5.0	0.43	ug/L			07/28/20 18:43	1
Hexachlorobutadiene	ND		6.0	0.79	ug/L			07/28/20 18:43	1
Naphthalene	ND		4.0	0.93	ug/L			07/28/20 18:43	1
Methyl tert-butyl ether	ND		2.0	0.44	ug/L			07/28/20 18:43	1
1,2,3-Trichloropropane	ND		2.0	0.41	ug/L			07/28/20 18:43	1
1,3,5-Trimethylbenzene	ND		3.0	0.55	ug/L			07/28/20 18:43	1
2-Chlorotoluene	ND		3.0	0.51	ug/L			07/28/20 18:43	1
	МВ	MB							

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
Toluene-d8 (Surr)	100		80 - 120		07/28/20 18:43	1	
4-Bromofluorobenzene (Surr)	97		80 - 120		07/28/20 18:43	1	
Dibromofluoromethane (Surr)	99		80 - 120		07/28/20 18:43	1	
1,2-Dichloroethane-d4 (Surr)	104		80 - 126		07/28/20 18:43	1	

Lab Sample ID: LCS 580-334180/6 Matrix: Water Analysis Batch: 334180

Client Sample ID: Lab Control Sample Prep Type: Total/NA

Analysis Batch. 004100	Spike	LCS	LCS				%Rec.
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits
Dichlorodifluoromethane	10.0	14.0	*	ug/L		140	47 - 133
Chloromethane	10.0	13.5	J	ug/L		135	52 - 135
Vinyl chloride	10.0	12.6		ug/L		126	65 - 130
Bromomethane	10.0	11.8		ug/L		118	66 - 125
Chloroethane	10.0	12.4		ug/L		124	65 - 132
Trichlorofluoromethane	10.0	12.3		ug/L		123	64 - 130
1,1-Dichloroethene	10.0	10.9		ug/L		109	70 - 129
Carbon disulfide	10.0	11.0		ug/L		110	63 - 129
Acetone	50.0	53.2		ug/L		106	57 - 150
Methylene Chloride	10.0	10.5		ug/L		105	77 - 120
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	70 - 130
1,1-Dichloroethane	10.0	10.5		ug/L		105	81 - 129
2,2-Dichloropropane	10.0	11.2		ug/L		112	53 - 150
2-Butanone	50.0	50.8		ug/L		102	73 - 137
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	76 - 129
Bromochloromethane	10.0	10.8		ug/L		108	78 - 120
Chloroform	10.0	10.2		ug/L		102	73 - 127
1,1,1-Trichloroethane	10.0	11.2		ug/L		112	74 - 130
Carbon tetrachloride	10.0	11.4		ug/L		114	72 - 129

Eurofins TestAmerica, Seattle

Prep Type: Total/NA

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6

Client Sample ID: Lab Control Sample

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-334180/6 Matrix: Water

Analysis Batch: 334180

Analysis Batch: 334180	Spike	LCS	LCS				%Rec.
	Added	Result	Qualifier I	Unit	D	%Rec	Limits
1,1-Dichloropropene	10.0	11.0	ī	ug/L		110	74 - 131
Benzene	10.0	10.4	ι	ug/L		104	82 - 122
1,2-Dichloroethane	10.0	10.9		ug/L		109	76 - 126
Trichloroethene	10.0	10.6		ug/L		106	81 - 125
1,2-Dichloropropane	10.0	10.4	ι	ug/L		104	80 - 126
Dibromomethane	10.0	10.8		ug/L		108	80 - 120
Bromodichloromethane	10.0	10.0	ι	ug/L		100	75 - 124
cis-1,3-Dichloropropene	10.0	9.84	ι	ug/L		98	77 _ 120
4-Methyl-2-pentanone	50.0	56.8	l	ug/L		114	59 - 150
Toluene	10.0	10.4	ι	ug/L		104	80 - 120
trans-1,3-Dichloropropene	10.0	10.4	ι	ug/L		104	70 - 122
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	80 - 121
Tetrachloroethene	10.0	11.1	ι	ug/L		111	76 - 120
1,3-Dichloropropane	10.0	10.4		ug/L		104	79 - 120
2-Hexanone	50.0	56.5		ug/L		113	65 - 144
Dibromochloromethane	10.0	10.3	ι	ug/L		103	60 - 125
1,2-Dibromoethane	10.0	10.5	ι	ug/L		105	79 - 120
Chlorobenzene	10.0	10.4		ug/L		104	80 - 120
Ethylbenzene	10.0	10.1		ug/L		101	80 - 120
1,1,1,2-Tetrachloroethane	10.0	10.5		ug/L		105	79 - 120
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	80 - 120
o-Xylene	10.0	10.3	ι	ug/L		103	80 - 125
Styrene	10.0	10.1		ug/L		101	76 - 127
Bromoform	10.0	11.1		ug/L		111	28 - 139
Isopropylbenzene	10.0	10.7	ι	ug/L		107	75 - 129
Bromobenzene	10.0	10.1		ug/L		101	80 - 120
N-Propylbenzene	10.0	10.1		ug/L		101	80 - 128
1,1,2,2-Tetrachloroethane	10.0	10.6	ι	ug/L		106	74 - 124
4-Chlorotoluene	10.0	10.1	ι	ug/L		101	80 - 120
t-Butylbenzene	10.0	10.1		ug/L		101	80 - 129
1,2,4-Trimethylbenzene	10.0	10.2	ι	ug/L		102	80 - 131
sec-Butylbenzene	10.0	10.2	ι	ug/L		102	78 - 131
1,3-Dichlorobenzene	10.0	10.6		ug/L		106	69 - 127
4-Isopropyltoluene	10.0	10.1	ι	ug/L		101	77 - 131
1,4-Dichlorobenzene	10.0	9.99	ι	ug/L		100	80 - 120
n-Butylbenzene	10.0	10.1		ug/L		101	78 - 120
1,2-Dichlorobenzene	10.0	10.0		ug/L		100	80 - 120
1,2-Dibromo-3-Chloropropane	10.0	9.98	Ju	ug/L		100	65 - 125
1,2,4-Trichlorobenzene	10.0	10.4		ug/L		104	73 - 128
1,2,3-Trichlorobenzene	10.0	9.46		ug/L		95	74 - 139
Hexachlorobutadiene	10.0	10.3		ug/L		103	74 - 125
Naphthalene	10.0	10.0		ug/L		100	75 - 134
Methyl tert-butyl ether	10.0	11.1		ug/L		111	72 - 130
1,2,3-Trichloropropane	10.0	10.8		ug/L		108	76 - 124
1,3,5-Trimethylbenzene	10.0	10.0		ug/L		100	80 - 131
2-Chlorotoluene	10.0	10.0		ug/L		100	80 - 120

Job ID: 580-96236-1

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Client Sample ID: Lab Control Sample Dup

Lab Sample ID: LCS 580-334180/6 Matrix: Water

Analysis Batch: 334180

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
1,2-Dichloroethane-d4 (Surr)	104		80 - 126

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-334180/7 Matrix: Water Analysis Batch: 334180

Spike LCSD LCSD %Rec. RPD Added **Result Qualifier** Limits RPD Limit Analyte Unit D %Rec Dichlorodifluoromethane 10.0 13.5 135 47 - 133 15 ug/L 4 10.0 Chloromethane 13.6 J* ug/L 136 52 - 135 1 14 Vinyl chloride 10.0 12.8 ug/L 128 65 - 130 2 14 Bromomethane 10.0 119 66 - 125 14 11.9 ug/L 1 Chloroethane 10.0 11.8 ug/L 118 65 - 132 5 18 Trichlorofluoromethane 10.0 12.1 121 64 - 130 ug/L 1 14 1,1-Dichloroethene 10.0 11.1 ug/L 111 70 - 129 1 17 Carbon disulfide 10.0 11.2 ug/L 112 63 - 129 2 14 108 22 Acetone 50.0 54.2 ug/L 57 - 1502 77 - 120 Methylene Chloride 10.0 10.4 ug/L 104 1 18 70 - 130 trans-1,2-Dichloroethene 10.0 10.8 ug/L 108 0 21 1,1-Dichloroethane 10.0 10.5 ug/L 105 81 - 129 0 15 10.0 109 2 2,2-Dichloropropane 10.9 ug/L 53 - 150 15 2-Butanone 50.0 54.3 ug/L 109 73 - 137 7 24 cis-1,2-Dichloroethene 10.0 10 1 ug/L 101 76 - 129 15 1 Bromochloromethane 10.0 10.6 ug/L 106 78 - 120 2 13 Chloroform 10.0 10 1 ug/L 101 73 127 14 1 1,1,1-Trichloroethane 10.0 11.3 ug/L 113 74 - 130 11 1 Carbon tetrachloride 10.0 ug/L 116 72 - 129 2 11 116 1,1-Dichloropropene 10.0 10.8 ug/L 108 74 - 131 1 14 Benzene 10.0 10.4 ug/L 104 82 - 122 0 14 1,2-Dichloroethane 10.0 11.0 ug/L 110 76 - 126 1 11 Trichloroethene 10.0 10.5 ug/L 105 81 - 125 13 1 1,2-Dichloropropane 10.0 10.5 ug/L 105 80 - 126 1 14 10.0 107 80 - 120 Dibromomethane 10.7 ug/L 1 11 75 - 124 2 Bromodichloromethane 10.0 10.3 ug/L 103 13 cis-1,3-Dichloropropene 10.0 100 77 - 120 20 10.0 ug/L 2 4-Methyl-2-pentanone 50.0 58.5 ug/L 117 59 - 150 3 22 10.0 10.3 ug/L 103 80 - 120 13 Toluene 1 104 14 10.0 10.4 ug/L 70 - 122 0 trans-1,3-Dichloropropene 1,1,2-Trichloroethane 10.0 10.6 ug/L 106 80 - 121 1 14 Tetrachloroethene 10.0 11.2 112 76 - 120 13 ug/L 0 107 1,3-Dichloropropane 10.0 10.7 ug/L 79 - 120 3 13 2-Hexanone 50.0 58.3 ug/L 117 65 - 144 3 19 Dibromochloromethane 10.0 10.6 ug/L 106 60 - 125 2 13 1,2-Dibromoethane 10.0 10.8 ug/L 108 79 - 120 2 12 Chlorobenzene 10.0 ug/L 106 80 - 120 10.6 1 10 Ethylbenzene 10.0 10.3 ug/L 103 80 - 120 2 14

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Prep Type: Total/NA

Client Sample ID: Lab Control Sample Dup

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 580-334180/7 Matrix: Water

Analysis Batch: 334180

Analysis Baten. 004100	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1,1,2-Tetrachloroethane	10.0	10.3		ug/L		103	79 - 120	2	10
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	80 - 120	1	14
o-Xylene	10.0	10.2		ug/L		102	80 - 125	1	16
Styrene	10.0	9.93		ug/L		99	76 - 127	1	16
Bromoform	10.0	11.4		ug/L		114	28 - 139	3	15
Isopropylbenzene	10.0	10.6		ug/L		106	75 - 129	1	12
Bromobenzene	10.0	10.3		ug/L		103	80 - 120	2	13
N-Propylbenzene	10.0	10.4		ug/L		104	80 - 128	3	13
1,1,2,2-Tetrachloroethane	10.0	11.0		ug/L		110	74 - 124	4	18
4-Chlorotoluene	10.0	10.2		ug/L		102	80 - 120	1	14
t-Butylbenzene	10.0	10.1		ug/L		101	80 - 129	0	14
1,2,4-Trimethylbenzene	10.0	10.3		ug/L		103	80 - 131	1	16
sec-Butylbenzene	10.0	10.4		ug/L		104	78 - 131	2	15
1,3-Dichlorobenzene	10.0	10.7		ug/L		107	69 - 127	1	14
4-Isopropyltoluene	10.0	10.3		ug/L		103	77 - 131	2	20
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	80 - 120	3	17
n-Butylbenzene	10.0	10.4		ug/L		104	78 - 120	2	14
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	80 - 120	3	15
1,2-Dibromo-3-Chloropropane	10.0	10.7		ug/L		107	65 - 125	7	17
1,2,4-Trichlorobenzene	10.0	10.4		ug/L		104	73 - 128	0	20
1,2,3-Trichlorobenzene	10.0	10.0		ug/L		100	74 - 139	6	26
Hexachlorobutadiene	10.0	10.5		ug/L		105	74 - 125	1	22
Naphthalene	10.0	10.8		ug/L		108	75 - 134	7	23
Methyl tert-butyl ether	10.0	11.0		ug/L		110	72 - 130	0	18
1,2,3-Trichloropropane	10.0	10.7		ug/L		107	76 - 124	0	16
1,3,5-Trimethylbenzene	10.0	10.2		ug/L		102	80 - 131	2	14
2-Chlorotoluene	10.0	10.0		ug/L		100	80 - 120	0	15

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
1,2-Dichloroethane-d4 (Surr)	104		80 - 126

Lab Sample ID: MB 580-334450/9 Matrix: Water Analysis Batch: 334450

MB MB Analyte **Result Qualifier** RL MDL Unit D Prepared Analyzed Dil Fac Dichlorodifluoromethane ND 10 0.53 ug/L 07/31/20 12:34 1 Chloromethane ND 20 0.28 ug/L 07/31/20 12:34 1 MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac Toluene-d8 (Surr) 100 80 - 120 07/31/20 12:34 1 4-Bromofluorobenzene (Surr) 97 80 - 120 07/31/20 12:34 1 Dibromofluoromethane (Surr) 101 80 - 120 07/31/20 12:34 1 1,2-Dichloroethane-d4 (Surr) 106 80 - 126 07/31/20 12:34 1

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Client Sample ID: Method Blank

Prep Type: Total/NA

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Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 580-334450/10 **Client Sample ID: Lab Control Sample** Matrix: Water Prep Type: Total/NA Analysis Batch: 334450 Spike LCS LCS %Rec. Analyte Added **Result Qualifier** %Rec Limits Unit D Dichlorodifluoromethane 10.0 15.1 151 47 - 133 ug/L Chloromethane 10.0 13.0 J ug/L 130 52 - 135 LCS LCS Surrogate Qualifier %Recovery Limits Toluene-d8 (Surr) 101 80 - 120 4-Bromofluorobenzene (Surr) 99 80 - 120 Dibromofluoromethane (Surr) 102 80 - 120 1,2-Dichloroethane-d4 (Surr) 103 80 - 126

Lab Sample ID: LCSD 580-334450/11 Matrix: Water Analysis Batch: 334450

Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 333866

Analysis Datch. 334450			Spike	LCSD	LCSD				%Rec.		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Dichlorodifluoromethane			10.0	15.0	*	ug/L		150	47 - 133	1	15
Chloromethane			10.0	12.9	J	ug/L		129	52 - 135	1	14
	LCSD	LCSD									
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	100		80 - 120								
4-Bromofluorobenzene (Surr)	99		80 - 120								
Dibromofluoromethane (Surr)	101		80 - 120								
1,2-Dichloroethane-d4 (Surr)	102		80 - 126								

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-333866/1-A Matrix: Water Analysis Batch: 333902

MB MB Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Naphthalene ND 0.10 0.031 ug/L 07/24/20 10:03 07/24/20 19:57 1 2-Methylnaphthalene ND 0.20 0.039 ug/L 07/24/20 10:03 07/24/20 19:57 1 1-Methylnaphthalene ND 0 10 0.019 ug/L 07/24/20 10:03 07/24/20 19:57 1 Acenaphthylene ND 0.050 0.0090 ug/L 07/24/20 10:03 07/24/20 19:57 1 Acenaphthene ND 0.014 ug/L 07/24/20 10:03 07/24/20 19:57 0.10 1 ND 0.017 ug/L 07/24/20 10:03 07/24/20 19:57 Fluorene 0.10 1 Phenanthrene ND 0.10 0.031 ug/L 07/24/20 10:03 07/24/20 19:57 1 Anthracene ND 0.10 0.022 ug/L 07/24/20 10:03 07/24/20 19:57 1 Fluoranthene ND 0.20 0.050 ug/L 07/24/20 10:03 07/24/20 19:57 1 Pyrene ND 0.10 0.033 ug/L 07/24/20 10:03 07/24/20 19:57 1 0.050 0.014 ug/L 07/24/20 10:03 07/24/20 19:57 Benzo[a]anthracene ND 1 Chrysene ND 0.016 ug/L 07/24/20 10:03 07/24/20 19:57 0.10 1 Benzo[b]fluoranthene ND 0.050 0.011 ug/L 07/24/20 10:03 07/24/20 19:57 1 Benzo[k]fluoranthene ND 0 0 5 0 0.012 ug/L 07/24/20 10:03 07/24/20 19:57 1 Benzo[a]pyrene ND 0.10 0.011 ug/L 07/24/20 10:03 07/24/20 19:57 1 ND Indeno[1,2,3-cd]pyrene 0.050 0.014 ug/L 07/24/20 10:03 07/24/20 19:57 1 Dibenz(a,h)anthracene ND 0.10 0.015 ug/L 07/24/20 10:03 07/24/20 19:57 1 Benzo[g,h,i]perylene ND 0.050 0.012 ug/L 07/24/20 10:03 07/24/20 19:57 1

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QC Sample Results

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Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: MB 580-333 Matrix: Water Analysis Batch: 333902	3866/1-A						Client Sam	ple ID: Method Bla Prep Type: Total/I Prep Batch: 3338
Course and to		MB	1 : :4				Duomonod	Analyzed Dill
Surrogate	%Recovery 	Qualifier	_ Limits				Prepared 07/24/20 10:0	Analyzed Dil F
Terphenyl-d14	78		29 - 150				07/24/20 10:0	3 07/24/20 19:57
Lab Sample ID: LCS 580-33 Matrix: Water Analysis Batch: 333902	33866/2-A		Spike	LCS	LCS	Clier	nt Sample ID	Lab Control Samp Prep Type: Total/I Prep Batch: 3338 %Rec.
Analyte			Added	Result	Qualifier	Unit	D %Rec	Limits
Naphthalene			4.00	3.22		ug/L	81	24 - 120
2-Methylnaphthalene			4.00	3.28		ug/L	82	33 - 120
1-Methylnaphthalene			4.00	3.25		ug/L	81	29 - 120
Acenaphthylene			4.00	3.16		ug/L	79	32 - 120
Acenaphthene			4.00	3.15		ug/L	79	33 - 120
Fluorene			4.00	3.25		ug/L	81	39 - 120
Phenanthrene			4.00	3.34		ug/L	83	37 - 120
Anthracene			4.00	3.58		ug/L	90	41 - 120
Fluoranthene			4.00	4.01		ug/L	100	41 - 137
Pyrene			4.00	4.02		ug/L	100	39 - 134
Benzo[a]anthracene			4.00	3.80		ug/L	95	45 - 129
Chrysene			4.00	3.43		ug/L	86	47 - 126
Benzo[b]fluoranthene			4.00	3.76		ug/L	94	33 - 142
Benzo[k]fluoranthene			4.00	3.07		ug/L	77	41 - 132
Benzo[a]pyrene			4.00	3.93		ug/L	98	43 - 130
Indeno[1,2,3-cd]pyrene			4.00	4.23		ug/L	106	51 - 135
Dibenz(a,h)anthracene			4.00	3.84		ug/L	96	47 - 133
Benzo[g,h,i]perylene			4.00	3.63		ug/L	91	45 - 127
	LCS LCS	;						
Surrogata	% Pasavary Our	lifiar	Limito					

	LCS LCS	
Surrogate	%Recovery Qualifier	Limits
Terphenyl-d14	78	29 - 150

Lab Sample ID: LCSD 580-333866/3-A Matrix: Water Analysis Batch: 333902

Analysis Batch: 333902	Spike	LCSD					Prep Ba %Rec.	•	
Analyte	Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Naphthalene	4.00	3.00		ug/L		75	24 - 120	7	35
2-Methylnaphthalene	4.00	3.04		ug/L		76	33 - 120	8	35
1-Methylnaphthalene	4.00	3.07		ug/L		77	29 - 120	6	34
Acenaphthylene	4.00	3.07		ug/L		77	32 - 120	3	34
Acenaphthene	4.00	3.03		ug/L		76	33 - 120	4	32
Fluorene	4.00	3.10		ug/L		78	39 - 120	4	29
Phenanthrene	4.00	3.21		ug/L		80	37 - 120	4	26
Anthracene	4.00	3.42		ug/L		85	41 - 120	5	29
Fluoranthene	4.00	3.83		ug/L		96	41 - 137	5	24
Pyrene	4.00	3.83		ug/L		96	39 - 134	5	24
Benzo[a]anthracene	4.00	3.72		ug/L		93	45 - 129	2	24
Chrysene	4.00	3.37		ug/L		84	47 - 126	2	23
Benzo[b]fluoranthene	4.00	3.66		ug/L		91	33 - 142	3	25
Benzo[k]fluoranthene	4.00	3.04		ug/L		76	41 - 132	1	25

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Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCSD 580 Matrix: Water Analysis Batch: 333902	-333866/3-A			Spike	LCSD	LCSD	Client Sa	mple	ID: Lab	Control S Prep Typ Prep Ba %Rec.	pe: Tot	al/NA
Analyte				Added		Qualifier	Unit	D	%Rec	Limits	RPD	Limi
Benzo[a]pyrene				4.00	3.85		ug/L		96	43 - 130	2	2
Indeno[1,2,3-cd]pyrene				4.00	4.38		ug/L		109	51 - 135	3	24
Dibenz(a,h)anthracene				4.00	3.75		ug/L		94	47 - 133	2	2
Benzo[g,h,i]perylene				4.00	3.59		ug/L		90	45 - 127	1	2
	LCSD	100	n									
Surrogate	%Recovery			Limits								
Terphenyl-d14	76	Quai		29 - 150								
Aethod: AK101 - Alask Lab Sample ID: MB 580-33 Matrix: Water		ine l	Range	Organi	ics (GC)			Clie	ent Sam	iple ID: Me Prep Typ		
Analysis Batch: 334028		мв	мв									
Analyte	Re		Qualifier		RL	MDL Unit		DР	repared	Analyz	ed.	Dil Fa
Gasoline Range Organics (GRO) -C6-C10		ND			0.25	0.10 mg/L				07/27/20		
		MВ	МВ									
Surrogate	%Reco	very	Qualifier	Limit	ts			Р	repared	Analyz	ed	Dil Fa
4-Bromofluorobenzene (Surr)		87		50 - 1	150					07/27/20	12:18	
Lab Sample ID: LCS 580-3 Matrix: Water Analysis Batch: 334028	34028/6						Clie	nt Sai	mple ID	: Lab Con Prep Typ		
Alidivsis Daluli. 334020										%Rec.		
				Spike	LCS	LCS				mec.		
				Spike Added		LCS Qualifier	Unit	D	%Rec	Limits		
Analyte				•			Unit mg/L	<u>D</u>	%Rec			
Analyte Gasoline Range Organics (GRO)	LCS			Added	Result			<u>D</u>		Limits		
Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate	%Recovery		lifier	Added 1.00	Result			D		Limits		
Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate			lifier	Added	Result			<u>D</u>		Limits		
Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr) Lab Sample ID: LCSD 580 Matrix: Water	%Recovery 105		lifier	Added 1.00	Result	Qualifier	mg/L		103	Limits		
Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr) Lab Sample ID: LCSD 580 Matrix: Water	%Recovery 105		lifier	Added 1.00 <i>Limits</i> 50 - 150	Result 1.03	Qualifier	mg/L		103	Limits 60 - 120 Control S Prep Typ		al/N/
Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr) Lab Sample ID: LCSD 580 Matrix: Water Analysis Batch: 334028	%Recovery 105		lifier	Added 1.00 Limits 50 - 150 Spike	Result 1.03	Qualifier	mg/L	mple	ID: Lab	Limits 60 - 120 Control S Prep Typ %Rec.	pe: Tot	al/N
Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr) Lab Sample ID: LCSD 580 Matrix: Water Analysis Batch: 334028 Analyte Gasoline Range Organics (GRO)	%Recovery 105		lifier	Added 1.00 <i>Limits</i> 50 - 150	Result 1.03	Qualifier LCSD Qualifier	mg/L	mple	103	Limits 60 - 120 Control S Prep Typ		al/N RPI Lim
Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr) Lab Sample ID: LCSD 580 Matrix: Water Analysis Batch: 334028 Analyte Gasoline Range Organics (GRO)	%Recovery 105 -334028/7	Qual		Added 1.00 Limits 50 - 150 Spike Added	Result 1.03 LCSD Result	Qualifier LCSD Qualifier	Client Sa	mple	ID: Lab	Limits 60 - 120 Control S Prep Typ %Rec. Limits	RPD	al/N/ RPI Limi
Analyte Gasoline Range Organics (GRO) -C6-C10 Surrogate 4-Bromofluorobenzene (Surr) Lab Sample ID: LCSD 580	%Recovery 105	Qual		Added 1.00 Limits 50 - 150 Spike Added	Result 1.03 LCSD Result	Qualifier LCSD Qualifier	Client Sa	mple	ID: Lab	Limits 60 - 120 Control S Prep Typ %Rec. Limits	RPD	

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Method: AK102 & 103 - Alaska - Diesel Range Organics & Residual Range Organics (GC) Lab Sample ID: MB 580-334142/1-A **Client Sample ID: Method Blank** Matrix: Water Prep Type: Total/NA Analysis Batch: 334190 Prep Batch: 334142 MB MB Analyte **Result Qualifier** RL MDL Unit Prepared Analyzed Dil Fac D DRO (nC10-<nC25) 0.11 0.075 mg/L 07/28/20 13:55 07/28/20 20:07 ND 1 MB MB Surrogate Qualifier Limits Prepared Dil Fac %Recovery Analyzed o-Terphenyl 85 50 - 150 07/28/20 13:55 07/28/20 20:07 1 n-Triacontane-d62 84 50 - 150 07/28/20 13:55 07/28/20 20:07 1 Lab Sample ID: LCS 580-334142/2-A **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA Analysis Batch: 334190 Prep Batch: 334142 Spike LCS LCS %Rec. Analyte Added Result Qualifier Unit D %Rec Limits DRO (nC10-<nC25) 2.00 75 - 125 1.55 mg/L 77 LCS LCS Surrogate %Recovery Qualifier Limits o-Terphenyl 96 50 - 150 n-Triacontane-d62 85 50 - 150 Lab Sample ID: LCSD 580-334142/3-A **Client Sample ID: Lab Control Sample Dup Matrix: Water** Prep Type: Total/NA Analysis Batch: 334190 **Prep Batch: 334142** Spike LCSD LCSD %Rec. RPD Analyte Added Result Qualifier Limits RPD Limit Unit D %Rec DRO (nC10-<nC25) 75 - 125 20 2.00 1.56 mg/L 78 1 LCSD LCSD Surrogate %Recovery Qualifier Limits 50 - 150 o-Terphenyl 100 n-Triacontane-d62 91 50 - 150

Client Sample ID: Kobuk-MW1-0720 Date Collected: 07/22/20 12:30 Date Received: 07/23/20 09:20

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	333913	07/25/20 03:29	TL1	TAL SEA
Total/NA	Analysis	AK101		1	334028	07/27/20 19:33	DCV	TAL SEA
Total/NA	Prep	3510C			334142	07/28/20 13:55	APR	TAL SEA
Total/NA	Analysis	AK102 & 103		1	334190	07/29/20 02:52	T1W	TAL SEA

Client Sample ID: Kobuk-MW2-0720 Date Collected: 07/22/20 13:45 Date Received: 07/23/20 09:20

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	334180	07/28/20 21:12	T1W	TAL SEA
Total/NA	Analysis	8260D	RA	1	334450	07/31/20 15:54	JSM	TAL SEA
Total/NA	Prep	3510C			333866	07/24/20 10:03	S1S	TAL SEA
Total/NA	Analysis	8270E SIM		1	333902	07/25/20 01:20	W1T	TAL SEA
Total/NA	Analysis	AK101		1	334028	07/27/20 19:57	DCV	TAL SEA
Total/NA	Prep	3510C			334142	07/28/20 13:55	APR	TAL SEA
Total/NA	Analysis	AK102 & 103		1	334190	07/29/20 02:32	T1W	TAL SEA

Client Sample ID: Kobuk-MW12-0720 Date Collected: 07/22/20 14:00 Date Received: 07/23/20 09:20

_	Batch	Batch		Dilution	Batch	Prepared		
Prep Туре	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	334180	07/28/20 21:37	T1W	TAL SEA
Total/NA	Analysis	8260D	RA	1	334450	07/31/20 16:18	JSM	TAL SEA
Total/NA	Prep	3510C			333866	07/24/20 10:03	S1S	TAL SEA
Total/NA	Analysis	8270E SIM		1	333902	07/25/20 01:44	W1T	TAL SEA
Total/NA	Analysis	AK101		1	334028	07/27/20 20:21	DCV	TAL SEA
Total/NA	Prep	3510C			334142	07/28/20 13:55	APR	TAL SEA
Total/NA	Analysis	AK102 & 103		1	334190	07/29/20 02:12	T1W	TAL SEA

Client Sample ID: Trip Blank Date Collected: 07/22/20 12:00 Date Received: 07/23/20 09:20

Γ	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Туре	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	334180	07/28/20 20:22	T1W	TAL SEA
Total/NA	Analysis	8260D	RA	1	334450	07/31/20 15:04	JSM	TAL SEA
Total/NA	Analysis	AK101		1	334028	07/27/20 20:45	DCV	TAL SEA

Laboratory References:

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Lab Sample ID: 580-96236-1

Lab Sample ID: 580-96236-2

Matrix: Water

Matrix: Water

5 6 7 8

9 10

Lab Sample ID: 580-96236-3 Matrix: Water

Lab Sample ID: 580-96236-4

Matrix: Water

Eurofins TestAmerica, Seattle

Accreditation/Certification Summary

Client: Alaska Resources & Environment Project/Site: Kobuk Feed & Fuel Job ID: 580-96236-1

5

8

Laboratory: Eurofins TestAmerica, Seattle Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below. Authority Program Identification Number **Expiration Date** Alaska (UST) State 17-024 01-14-22 The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification. Analysis Method Prep Method Matrix Analyte 8260D Water 1,1,1,2-Tetrachloroethane 8260D Water 1,1,1-Trichloroethane 8260D Water 1,1,2,2-Tetrachloroethane 8260D Water 1,1,2-Trichloroethane 8260D Water 1,1-Dichloroethane 8260D Water 1,1-Dichloroethene 8260D Water 1,1-Dichloropropene 8260D Water 1,2,3-Trichlorobenzene 8260D Water 1,2,3-Trichloropropane 8260D Water 1,2,4-Trichlorobenzene 8260D Water 1,2,4-Trimethylbenzene 8260D Water 1,2-Dibromo-3-Chloropropane 8260D Water 1.2-Dibromoethane 8260D Water 1,2-Dichlorobenzene 8260D Water 1,2-Dichloroethane 8260D Water 1,2-Dichloropropane 8260D Water 1,3,5-Trimethylbenzene 8260D Water 1,3-Dichlorobenzene 8260D Water 1.3-Dichloropropane 8260D Water 1,4-Dichlorobenzene 8260D Water 2,2-Dichloropropane 8260D Water 2-Butanone 8260D 2-Chlorotoluene Water 8260D Water 2-Hexanone 8260D Water 4-Chlorotoluene 8260D Water 4-Isopropyltoluene 8260D Water 4-Methyl-2-pentanone 8260D Water Acetone 8260D Water Benzene 8260D Water Bromobenzene 8260D Water Bromochloromethane 8260D Water Bromodichloromethane 8260D Water Bromoform 8260D Water Bromomethane 8260D Water Carbon disulfide 8260D Water Carbon tetrachloride 8260D Water Chlorobenzene 8260D Water Chloroethane 8260D Chloroform Water 8260D Water Chloromethane 8260D Water cis-1,2-Dichloroethene 8260D Water cis-1,3-Dichloropropene 8260D Water Dibromochloromethane 8260D Water Dibromomethane 8260D Water Dichlorodifluoromethane

Accreditation/Certification Summary

Toluene

Trichloroethene

Vinyl chloride

Acenaphthene

Anthracene

Chrysene

Fluorene

Pyrene

Fluoranthene

Naphthalene

Phenanthrene

Acenaphthylene

Benzo[a]pyrene

trans-1.2-Dichloroethene trans-1,3-Dichloropropene

Trichlorofluoromethane

1-Methylnaphthalene

2-Methylnaphthalene

Benzo[a]anthracene

Benzo[b]fluoranthene

Benzo[g,h,i]perylene

Benzo[k]fluoranthene

Dibenz(a,h)anthracene

Indeno[1,2,3-cd]pyrene

Client: Alaska Resources & Environment Project/Site: Kobuk Feed & Fuel

Authority

Alaska (UST)

8260D

8270E SIM

8270E SIM

8270E SIM

8270E SIM

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3510C

Laboratory: Eurofins TestAmerica, Seattle (Continued)

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certificatio

Water

Program

State

d) editation/certification below.		3
Identification Number	Expiration Date	 4
17-024	01-14-22	
Ethylbenzene		5
Hexachlorobutadiene		
Isopropylbenzene		6
Methyl tert-butyl ether		
Methylene Chloride		7
m-Xylene & p-Xylene		
Naphthalene		8
n-Butylbenzene		
N-Propylbenzene		0
o-Xylene		3
sec-Butylbenzene		40
Styrene		10
t-Butylbenzene		
Tetrachloroethene		11

Job ID: 580-96236-1

Eurofins TestAmerica, Sea	ittle
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Sample Summary

Client: Alaska Resources & Environment Project/Site: Kobuk Feed & Fuel

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Ass
580-96236-1	Kobuk-MW1-0720	Water	07/22/20 12:30	07/23/20 09:20	
580-96236-2	Kobuk-MW2-0720	Water	07/22/20 13:45	07/23/20 09:20	
580-96236-3	Kobuk-MW12-0720	Water	07/22/20 14:00	07/23/20 09:20	
580-96236-4	Trip Blank	Water	07/22/20 12:00	07/23/20 09:20	

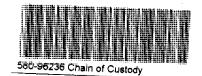
ALASKA RESOURCES AND ENVIRONMENTAL SERVICES

∿^AR E_S∣

ARES P.O. Box 83050 Fairbanks, Alaska 99708 Phone: 907.374.3226 Fax: 907.374.2319

						Chai	n of C	ustody	⁷ Rep	ort							
Client: Alaska Resources and Env Report To: Lyle Gre Address: ARES P.O. Boo Email: lyle@ak Phone: (907) 37	eschover x 83050 -res.com		374-321	9		Invoice To: ARES P.O. Box Fairbanks P.O. Number	, Alaska S	99708		Laboratory Na Address:	577	t America 55 8th St. oma, WA	East	Org	In E	Found Request Business Days Inorganic An 4 3	alyses
Project Name: Kobuk	Feed & Fue	1				~~	1	Preservati	ve					Petro	leum H	lydrocarbon A	nalvses
Project Number:			HCL	HCL	HCL	HCL	N/A		T				1		4	3 2 1	1 <1
Sampled By: Josh K	lynstra			1	1		Requ	uested An	alyses			: ⁵⁸⁰	·	Specify Of Report Tie	er Levels	Tier II repor	
Sample Identification	Samplin Date/ Tin		AK 101 GRO	AK 8260C BTEX	8260C VOC	AK 102 DRO	EPA 8270D SIM PAH				90	230		Matrix (W,S,O)	d (resu # of Cont.	Location / Comments	Lab ID
Kobuk-MW1-0720	7/22/2020	1230	X	X	1	X		1						W	8		1
, Kobuk-MW2-0720	7/22/2020	1345	X		X	X	X					1	1	W	10		
Kobuk-MW12-0720	7/22/2020	1400	X		X	X	X					1	1	W	10		
Trip Blank	7/22/2020	1200	X		X						1	1		W	6		
5																	
6																	
2																	
8											ļ						
9													ļ				
Released By: Dutin Stanl	State	Firm	: ARE			7/22/202	-	Receiv	ed By	Kang A	hlo Hob			Abea]	Date: 7-7 Time: 07 2	70
Released By:		1 4 11	. <u>ARE</u>		ate:	530- ۲۷ کند	20	Print N Receiv			TOO	F F	·irm: [/	VEd			·
Print Name:		Firm	:		ime:			Print N	-	ý.		F	irm:			Date: Time:	
Additional Remarks															Temp:		1 of 1

____Cor:<u>3.9 °</u> Unc:<u>3.9 °</u> Therm. ID: 6 Cooler Dsc: 6 FedEx:__ Packing: **B.** b UPS:_ Cust. Seal: Yes<u>A</u> No_____ Hue ce. Wet, Dry, None Lab Cour: 🛪 Other:_



8/3/2020

10

Login Sample Receipt Checklist

Client: Alaska Resources & Environment

Login Number: 96236 List Number: 1 Creator: Hobbs, Kenneth F

Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Job Number: 580-96236-1

List Source: Eurofins TestAmerica, Seattle

Laboratory Data Review Checklist

Completed By:

Richard Ranft

Title:

Environmental Geologist

Date:

03/09/2023

Consultant Firm:

Alaska Resources and Environmental Services

Laboratory Name:

Eurofins Seattle

Laboratory Report Number:

580-96236-1

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

ADEC File Number:

100.26.137

Hazard Identification Number:

24434

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

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 \boxtimes No \square N/A \square Comments:

Eurofins Seattle is an ADEC CS approved laboratory.

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 \square No \square N/A \boxtimes Comments:

Samples were not transferred or subcontracted to another facility.

- 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 \boxtimes No \square N/A \square Comments:

3. Laboratory Sample Receipt Documentation

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

Yes \boxtimes No \square N/A \square Comments:

The cooler at the time of receipt in Seattle was 3.8 $^{\circ}$ C.

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

Yes \boxtimes No \square N/A \square Comments:

Four (4) samples consisting of three (3) groundwater samples (including one duplicate) and one (1) trip blank were received by Eurofins Seattle on July 23, 2020. The samples arrived in good condition and properly preserved.

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

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

Yes \boxtimes No \square N/A \square Comments:

Samples arrived in good condition and were properly preserved.

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 \square No \square N/A \boxtimes Comments:

There weren't any discrepancies.

e. Data quality or usability affected?

Comments:

Data quality or usability are unaffected.

- 4. <u>Case Narrative</u>
 - a. Present and understandable?

Yes \boxtimes No \square N/A \square Comments:

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

Yes \boxtimes No \square N/A \square Comments:

AK102 &103:

The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern were later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: Kobuk-MW1-0720 (580-96236-1).

The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern were earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: Kobuk-MW2-0720 (580-96236-2) and Kobuk-MW12-0720 (580-96236-3).

The laboratory reported LCS failures that will be addressed in the appropriate sections below.

c. Were all corrective actions documented?

Yes \square No \square N/A \boxtimes Comments:

Corrective actions were not required.

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

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

Comments:

Data quality and usability are affected as stated in Section 4.b. above.

5. <u>Samples Results</u>

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

Yes \boxtimes No \square N/A \square Comments:

b. All applicable holding times met?

Yes \boxtimes No \square N/A \square Comments:

c. All soils reported on a dry weight basis?

Yes \square No \square N/A \boxtimes Comments:

Samples consisted of groundwater.

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

Yes \square No \boxtimes N/A \square Comments:

8260D: 1,1,2,2-Tetrachloroethane, 1,1,2-Trichloroethane, 1,2,3-Trichloropropane, 1,2-Dibromoethane, 1,2-Dichloroethane, Bromodichloromethane, Chloroform, Hexachlorobutadiene, Naphthalene, Trichloroethene and Vinyl chloride have detection limits that exceed ADEC CUL's in one or more samples.

e. Data quality or usability affected?

Data quality is affected. Analytes with elevated detection limits could be present at concentrations that exceed ADEC cleanup levels. Data is still usable. Sample results with detection limits that exceed ADEC CUL's are highlighted in blue in the analytical summary table.

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

6. <u>QC Samples</u>

- a. Method Blank
 - i. One method blank reported per matrix, analysis and 20 samples?

Yes \boxtimes No \square N/A \square Comments:

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

Yes \boxtimes No \square N/A \square Comments:

All method blank results were non-detect.

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

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

Yes \square No \square N/A \boxtimes Comments:

v. Data quality or usability affected?

Comments:

See Section 6.a.ii. above.

- b. Laboratory Control Sample/Duplicate (LCS/LCSD)
 - i. Organics One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes \boxtimes No \square N/A \square Comments:

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

Yes \square No \square N/A \boxtimes Comments:

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

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 \square No \boxtimes N/A \square Comments:

8260D: LCS 580-334180/6 exceeded recovery criteria for Dichlorodifluoromethane and Chloromethane. The analyte was biased high in the LCS and was not detected in associated samples; therefore, the data has been reported, and does not require qualification. Data quality and usability are not affected.

 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 \boxtimes No \square N/A \square Comments:

All RPDs were within acceptable range.

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 \square No \square N/A \boxtimes Comments:

Qualification is not required; however the laboratory qualifiers remain in place in the associated summary table.

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

Comments:

Data quality and usability are not affected.

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 \square No \square N/A \boxtimes Comments:

An MS/MSD was not required or requested for this sampling event.

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

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

Yes \square No \square N/A \boxtimes Comments:

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes \square No \square N/A \boxtimes 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.

Yes \square No \square N/A \boxtimes Co	omments:
---	----------

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 \square No \square N/A \boxtimes Comments:

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 \boxtimes No \square N/A \square Comments:

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

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 for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes \boxtimes No \square N/A \square Comments:

All surrogate recoveries were within acceptable range.

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

Yes \square No \square N/A \boxtimes Comments:

Qualification is not required.

iv. Data quality or usability affected?

Comments:

See Section 6.d.ii above

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

Yes \boxtimes No \square N/A \square 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 \square No \square N/A \boxtimes Comments:

All samples were shipped within a single cooler.

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

Yes \boxtimes No \square N/A \square Comments:

8260D: Acetone (18 ug/L) was detected in the Trip Blank at concentrations below the LOQ and the project limits. All results in which the analyte was detected in both the sample and the blank have been qualified with the B data flag. Data quality is affected. Associated non-detect results are not affected. Cross-contamination between samples for these analytes may have occurred for this sampling event and associated results may be biased high. All affected results are below ADEC CULs. Data is usable.

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

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

v. Data quality or usability affected?

Comments:

See Section 6.e.ii above.

- f. Field Duplicate
 - i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes \boxtimes No \square N/A \square Comments:

Sample Kobuk-MW12-0720 is the blind field duplicate to sample Kobuk-MW2-0720.

ii. Submitted blind to lab?

Yes \boxtimes No \square N/A \square Comments:

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

RPD (%) = Absolute value of: $(R_1-R_2)/((R_1+R_2)/2)$ x 100

Where $R_1 =$ Sample Concentration $R_2 =$ Field Duplicate Concentration

Yes \square No \boxtimes N/A \square Comments:

The following analyte had an RPD above recommended limits for samples Kobuk-MW12-0720 Kobuk-MW2-0720: 1,2-Dichloroethane (106.5%)

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

Data quality for the analytes with RPDs exceeding control limits are affected. Associated results are considered estimated with an unknown bias and are qualified with the "QN" data flag. All associated results are less than ADEC CULs. Data is usable for the purpose of groundwater characterization.

Laboratory Report Date:

CS Site Name:

Kobuk Feed & Fuel

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

Yes \square No \square N/A \boxtimes Comments:

Dedicated disposable sampling equipment was used to collect the samples.

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

Yes \square No \square N/A \boxtimes Comments:

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

iii. Data quality or usability affected?

Comments:

- 7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
 - a. Defined and appropriate?

Yes \boxtimes No \square N/A \square Comments:

Appendix C-3:

2021 Laboratory Report 1216322 & ADEC Lab Quality Checklist



Laboratory Report of Analysis

To: Alaska Resources and Env. Svcs P.O. Box 83050 Fairbanks, AK 99708

Report Number: **1216322**

Client Project: Kobuk Feed and Fuel

Dear Lyle Gresehover,

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 Jennifer 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.

Jennifer Dawkins Project Manager Jennifer.Dawkins@sgs.com Date

Print Date: 10/13/2021 10:25:34AM

SGS North America Inc.

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



Case Narrative

SGS Client: Alaska Resources and Env. Svcs SGS Project: 1216322 Project Name/Site: Kobuk Feed and Fuel Project Contact: Lyle Gresehover

Refer to sample receipt form for information on sample condition.

LCS for HBN 1826621 [VXX/37970 (1640393) LCS

8260D - LCS recovery for methyl iodide does not meet QC criteria, however this analyte is not being reported in the associated samples.

LCS for HBN 1826663 [VXX/37977 (1640602) LCS

8260D - LCS recoveries for trans 1,4-dichloro-2-butene and 1-chlorohexane do not meet QC criteria, however these analytes are not being reported in the associated samples.

LCSD for HBN 1826621 [VXX/3797 (1640394) LCSD

8260D - LCSD recovery for methyl iodide does not meet QC criteria, however this analyte is not being reported in the associated samples.

LCSD for HBN 1826663 [VXX/3797 (1640603) LCSD

8260D - LCSD recoveries for trans 1,4-dichloro-2-butene and 1-chlorohexane do not meet QC criteria, however these analytes are not being reported in the associated samples.

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

Print Date: 10/13/2021 10:25:36AM

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 <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

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SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) 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.
В	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
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.
Sample aummariae which i	nelude a result for "Tatal Salide" have already been adjusted for maisture content
-	nclude a result for "Total Solids" have already been adjusted for moisture content.
All DRO/RRO analyses are	

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Note:



SW8260D

		Sample Summary	1	
Client Sample ID	Lab Sample ID	Collected	Received	Matrix
MW1-0921	1216322001	09/24/2021	09/25/2021	Water (Surface, Eff., Ground)
MW2-0921	1216322002	09/24/2021	09/25/2021	Water (Surface, Eff., Ground)
MW12-0921	1216322003	09/24/2021	09/25/2021	Water (Surface, Eff., Ground)
Trip Blank	1216322004	09/24/2021	09/25/2021	Water (Surface, Eff., Ground)
Method	Method Des	scription		
8270D SIM LV (PAH)	8270 PAH \$	SIM GC/MS LV		
AK102	DRO Low V	/olume (W)		
AK101	Gasoline Ra	ange Organics (W)	
SW8260D	Volatile Org	anic Compounds	(W)	

Volatile Organic Compounds (W) FULL

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Detectable Results Summary

Client Sample ID: MW1-0921			
Lab Sample ID: 1216322001	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.537J	mg/L
Volatile Fuels	Gasoline Range Organics	0.0581J	mg/L
Volatile GC/MS	Benzene	10.6	ug/L
Client Sample ID: MW2-0921			
Lab Sample ID: 1216322002	Parameter	<u>Result</u>	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.340	ug/L
-	2-Methylnaphthalene	0.101	ug/L
	Fluorene	0.0200J	ug/L
	Naphthalene	2.57	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	1.33	mg/L
Volatile Fuels	Gasoline Range Organics	0.991	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	9.81	ug/L
	1,3,5-Trimethylbenzene	2.02	ug/L
	4-Isopropyltoluene	0.450J	ug/L
	Benzene	31.9	ug/L
	Dichlorodifluoromethane	0.460J	ug/L
	Ethylbenzene	9.21	ug/L
	Isopropylbenzene (Cumene)	3.00	ug/L
	Naphthalene	6.36	ug/L
	n-Propylbenzene	2.80	ug/L
	o-Xylene	10.3	ug/L
	P & M -Xylene	40.9	ug/L
	sec-Butylbenzene	0.540J	ug/L
	Toluene	1.75	ug/L
	Xylenes (total)	51.2	ug/L

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Detectable Results Summary

Client Sample ID: MW12-0921			
Lab Sample ID: 1216322003	<u>Parameter</u>	Result	<u>Units</u>
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.317	ug/L
	2-Methylnaphthalene	0.0972	ug/L
	Fluorene	0.0232J	ug/L
	Naphthalene	2.40	ug/L
	Phenanthrene	0.0292J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	1.29	mg/L
Volatile Fuels	Gasoline Range Organics	0.842	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	10.0	ug/L
	1,3,5-Trimethylbenzene	2.04	ug/L
	4-Isopropyltoluene	0.470J	ug/L
	Benzene	31.0	ug/L
	Dichlorodifluoromethane	0.490J	ug/L
	Ethylbenzene	9.21	ug/L
	Isopropylbenzene (Cumene)	3.17	ug/L
	Naphthalene	5.84	ug/L
	n-Propylbenzene	3.06	ug/L
	o-Xylene	10.6	ug/L
	P & M -Xylene	41.1	ug/L
	sec-Butylbenzene	0.580J	ug/L
	Toluene	1.83	ug/L
	Xylenes (total)	51.7	ug/L

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Results of MW1-0921							
Client Sample ID: MW1-0921 Client Project ID: Kobuk Feed and Fu Lab Sample ID: 1216322001 Lab Project ID: 1216322	el	F N S	Collection Da Received Da Matrix: Wate Solids (%): .ocation:	ite: 09/25/2	21 11:13		
Results by Semivolatile Organic Fuels	5						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.537 J	<u>LOQ/CL</u> 0.625	<u>DL</u> 0.208	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed
Surrogates				-			
5a Androstane (surr)	75.8	50-150		%	1		10/02/21 20:3
Batch Information							
Analytical Batch: XFC16097 Analytical Method: AK102 Analyst: IVM			Prep Batch: Prep Method Prep Date/Ti	: SW3520C			

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Results of MW1-0921 Client Sample ID: MW1-0921 Client Project ID: Kobuk Feed and Fuel Lab Sample ID: 1216322001 Lab Project ID: 1216322							
		Collection Date: 09/24/21 11:10 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Volatile Fuels							
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0581 J	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0450	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyze</u> 09/28/21 00:2
Surrogates							
4-Bromofluorobenzene (surr)	83.1	50-150		%	1		09/28/21 00:2
Batch Information							
Analytical Batch: VFC15847 Analytical Method: AK101 Analyst: IJV Analytical Date/Time: 09/28/21 00:24 Container ID: 1216322001-C		F F	rep Batch: VXX37918 rep Method: SW5030B rep Date/Time: 09/27/21 06:00 rep Initial Wt./Vol.: 5 mL rep Extract Vol: 5 mL				

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Results of MW1-0921

Client Sample ID: **MW1-0921** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322001 Lab Project ID: 1216322

Collection Date: 09/24/21 11:10 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

						Allowable	
<u>Parameter</u>	<u>Result Qual</u>	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	Limits	Date Analyzed
Benzene	10.6	0.400	0.120	ug/L	1		10/05/21 17:45
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/05/21 17:45
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/05/21 17:45
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/05/21 17:45
Toluene	0.500 U	1.00	0.310	ug/L	1		10/05/21 17:45
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/05/21 17:45
Surrogates							
1,2-Dichloroethane-D4 (surr)	110	81-118		%	1		10/05/21 17:45
4-Bromofluorobenzene (surr)	109	85-114		%	1		10/05/21 17:45
Toluene-d8 (surr)	93.8	89-112		%	1		10/05/21 17:45

Batch Information

Analytical Batch: VMS21248 Analytical Method: SW8260D Analyst: MDT Analytical Date/Time: 10/05/21 17:45 Container ID: 1216322001-F Prep Batch: VXX37970 Prep Method: SW5030B Prep Date/Time: 10/05/21 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of MW2-0921

Client Sample ID: **MW2-0921** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322002 Lab Project ID: 1216322 Collection Date: 09/24/21 09:30 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Polynuclear Aromatics GC/MS

						Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Limits	Date Analyzed
1-Methylnaphthalene	0.340	0.0500	0.0150	ug/L	1		10/02/21 17:41
2-Methylnaphthalene	0.101	0.0500	0.0150	ug/L	1		10/02/21 17:41
Acenaphthene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Acenaphthylene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Anthracene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Benzo(a)Anthracene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Benzo[a]pyrene	0.0100 U	0.0200	0.00620	ug/L	1		10/02/21 17:41
Benzo[b]Fluoranthene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Benzo[g,h,i]perylene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Benzo[k]fluoranthene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Chrysene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Dibenzo[a,h]anthracene	0.0100 U	0.0200	0.00620	ug/L	1		10/02/21 17:41
Fluoranthene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Fluorene	0.0200 J	0.0500	0.0150	ug/L	1		10/02/21 17:41
Indeno[1,2,3-c,d] pyrene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Naphthalene	2.57	0.100	0.0310	ug/L	1		10/02/21 17:41
Phenanthrene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Pyrene	0.0250 U	0.0500	0.0150	ug/L	1		10/02/21 17:41
Surrogates							
2-Methylnaphthalene-d10 (surr)	60.8	42-86		%	1		10/02/21 17:41
Fluoranthene-d10 (surr)	62	50-97		%	1		10/02/21 17:41

Batch Information

Analytical Batch: XMS12930 Analytical Method: 8270D SIM LV (PAH) Analyst: LAW Analytical Date/Time: 10/02/21 17:41 Container ID: 1216322002-C Prep Batch: XXX45655 Prep Method: SW3535A Prep Date/Time: 10/01/21 16:30 Prep Initial Wt./Vol.: 250 mL Prep Extract Vol: 1 mL

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Results of MW2-0921								
Client Sample ID: MW2-0921	Collection Date: 09/24/21 09:30							
Client Project ID: Kobuk Feed and Fu	lər	Received Date: 09/25/21 11:13						
Lab Sample ID: 1216322002		Matrix: Water (Surface, Eff., Ground)						
Lab Project ID: 1216322	Solids (%):							
		L	ocation:					
Results by Semivolatile Organic Fuel	S							
						Allowable		
<u>Parameter</u>	<u>Result Qual</u>	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Limits	Date Analyz	
Diesel Range Organics	1.33	0.600	0.200	mg/L	1		10/02/21 20	
Surrogates								
5a Androstane (surr)	78.9	50-150		%	1		10/02/21 20	
Batch Information								
Analytical Batch: XFC16097 Analytical Method: AK102	Prep Batch: XXX45650 Prep Method: SW3520C							
Analyst: IVM Analytical Date/Time: 10/02/21 20:49		Prep Date/Time: 09/30/21 16:00						
Container ID: 1216322002-A	Prep Initial Wt./Vol.: 250 mL Prep Extract Vol: 1 mL							

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Results of MW2-0921							
Client Sample ID: MW2-0921 Client Project ID: Kobuk Feed and Fu Lab Sample ID: 1216322002 Lab Project ID: 1216322	Collection Date: 09/24/21 09:30 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Volatile Fuels			_				
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Allowable</u> <u>Limits</u>	Date Analyze
Gasoline Range Organics	0.991	0.100	0.0450	mg/L	1		09/28/21 00:4
Surrogates							
4-Bromofluorobenzene (surr)	96.8	50-150		%	1		09/28/21 00:4
Batch Information							
Analytical Batch: VFC15847		F	Prep Batch:	VXX37918			
Analytical Method: AK101		Prep Method: SW5030B					
Analyst: IJV Analytical Date/Time: 09/28/21 00:42			Prep Date/Time: 09/27/21 06:00 Prep Initial Wt./Vol.: 5 mL				
Container ID: 1216322002-E	Prep Initial Wt./vol.: 5 mL Prep Extract Vol: 5 mL						

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Results of MW2-0921

Client Sample ID: **MW2-0921** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322002 Lab Project ID: 1216322

Collection Date: 09/24/21 09:30 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Parameter	<u>Result Qual</u>	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:29
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:29
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		10/06/21 20:29
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,2,4-Trimethylbenzene	9.81	1.00	0.310	ug/L	1		10/06/21 20:29
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:29
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		10/06/21 20:29
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,2-Dichloroethane	0.250 U	0.500	0.200	ug/L	1		10/06/21 20:29
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,3,5-Trimethylbenzene	2.02	1.00	0.310	ug/L	1		10/06/21 20:29
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:29
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:29
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:29
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:29
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
4-Isopropyltoluene	0.450 J	1.00	0.310	ug/L	1		10/06/21 20:29
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:29
Benzene	31.9	0.400	0.120	ug/L	1		10/06/21 20:29
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:29
Bromoform	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Bromomethane	3.00 U	6.00	3.00	ug/L	1		10/06/21 20:29
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:29
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:29
Chloroethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29

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Results of MW2-0921

Client Sample ID: **MW2-0921** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322002 Lab Project ID: 1216322

Collection Date: 09/24/21 09:30 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

-						Allowable	
Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>		Date Analyzed
Chloroform	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Chloromethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:29
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:29
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Dichlorodifluoromethane	0.460 J	1.00	0.310	ug/L	1		10/06/21 20:29
Ethylbenzene	9.21	1.00	0.310	ug/L	1		10/06/21 20:29
Freon-113	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:29
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Isopropylbenzene (Cumene)	3.00	1.00	0.310	ug/L	1		10/06/21 20:29
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:29
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:29
Naphthalene	6.36	1.00	0.310	ug/L	1		10/06/21 20:29
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
n-Propylbenzene	2.80	1.00	0.310	ug/L	1		10/06/21 20:29
o-Xylene	10.3	1.00	0.310	ug/L	1		10/06/21 20:29
P & M -Xylene	40.9	2.00	0.620	ug/L	1		10/06/21 20:29
sec-Butylbenzene	0.540 J	1.00	0.310	ug/L	1		10/06/21 20:29
Styrene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Toluene	1.75	1.00	0.310	ug/L	1		10/06/21 20:29
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:29
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:29
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		10/06/21 20:29
Xylenes (total)	51.2	3.00	1.00	ug/L	1		10/06/21 20:29
Surrogates							
1,2-Dichloroethane-D4 (surr)	101	81-118		%	1		10/06/21 20:29
4-Bromofluorobenzene (surr)	99.4	85-114		%	1		10/06/21 20:29
Toluene-d8 (surr)	99.2	89-112		%	1		10/06/21 20:29

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Results of MW2-0921

Client Sample ID: **MW2-0921** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322002 Lab Project ID: 1216322

Collection Date: 09/24/21 09:30 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21251 Analytical Method: SW8260D Analyst: MDT Analytical Date/Time: 10/06/21 20:29 Container ID: 1216322002-H Prep Batch: VXX37977 Prep Method: SW5030B Prep Date/Time: 10/06/21 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of MW12-0921

Client Sample ID: **MW12-0921** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322003 Lab Project ID: 1216322 Collection Date: 09/24/21 09:45 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Polynuclear Aromatics GC/MS

						Allowable
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Limits Date Analyzed
1-Methylnaphthalene	0.317	0.0510	0.0153	ug/L	1	10/02/21 18:01
2-Methylnaphthalene	0.0972	0.0510	0.0153	ug/L	1	10/02/21 18:01
Acenaphthene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Acenaphthylene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Anthracene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Benzo(a)Anthracene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Benzo[a]pyrene	0.0102 U	0.0204	0.00633	ug/L	1	10/02/21 18:01
Benzo[b]Fluoranthene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Benzo[g,h,i]perylene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Benzo[k]fluoranthene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Chrysene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Dibenzo[a,h]anthracene	0.0102 U	0.0204	0.00633	ug/L	1	10/02/21 18:01
Fluoranthene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Fluorene	0.0232 J	0.0510	0.0153	ug/L	1	10/02/21 18:01
Indeno[1,2,3-c,d] pyrene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Naphthalene	2.40	0.102	0.0316	ug/L	1	10/02/21 18:01
Phenanthrene	0.0292 J	0.0510	0.0153	ug/L	1	10/02/21 18:01
Pyrene	0.0255 U	0.0510	0.0153	ug/L	1	10/02/21 18:01
Surrogates						
2-Methylnaphthalene-d10 (surr)	59.1	42-86		%	1	10/02/21 18:01
Fluoranthene-d10 (surr)	59.9	50-97		%	1	10/02/21 18:01

Batch Information

Analytical Batch: XMS12930 Analytical Method: 8270D SIM LV (PAH) Analyst: LAW Analytical Date/Time: 10/02/21 18:01 Container ID: 1216322003-C Prep Batch: XXX45655 Prep Method: SW3535A Prep Date/Time: 10/01/21 16:30 Prep Initial Wt./Vol.: 245 mL Prep Extract Vol: 1 mL

Print Date: 10/13/2021 10:25:41AM

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Results of MW12-0921							
Client Sample ID: MW12-0921 Client Project ID: Kobuk Feed and Fu Lab Sample ID: 1216322003 Lab Project ID: 1216322	Collection Date: 09/24/21 09:45 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Semivolatile Organic Fuel	s						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 1.29	<u>LOQ/CL</u> 0.600	<u>DL</u> 0.200	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzec</u> 10/02/21 20:5
urrogates							
5a Androstane (surr)	77.9	50-150		%	1		10/02/21 20:5
Batch Information							
Analytical Batch: XFC16097 Analytical Method: AK102 Analyst: IVM Analytical Date/Time: 10/02/21 20:59			Prep Batch: Prep Methoc Prep Date/Ti Prep Initial V	I: SW3520C	21 16:00		

Print Date: 10/13/2021 10:25:41AM

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Results of MW12-0921							
Client Sample ID: MW12-0921 Client Project ID: Kobuk Feed and Fu Lab Sample ID: 1216322003 Lab Project ID: 1216322	C R M S						
Results by Volatile Fuels							
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> Limits	Date Analyze
Gasoline Range Organics	0.842	0.100	0.0450	mg/L	1		09/28/21 01:0
Surrogates							
4-Bromofluorobenzene (surr)	98.8	50-150		%	1		09/28/21 01:0
Batch Information							
Analytical Batch: VFC15847			Prep Batch: \				
Analytical Method: AK101 Analyst: IJV			Prep Method: Prep Date/Tir				
Analytical Date/Time: 09/28/21 01:00			Prep Initial W				
	Prep Extract Vol: 5 mL						

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Results of MW12-0921

Client Sample ID: **MW12-0921** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322003 Lab Project ID: 1216322

Collection Date: 09/24/21 09:45 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Allowable</u> <u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:58
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:58
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		10/06/21 20:58
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,2,4-Trimethylbenzene	10.0	1.00	0.310	ug/L	1		10/06/21 20:58
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:58
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		10/06/21 20:58
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,2-Dichloroethane	0.250 U	0.500	0.200	ug/L	1		10/06/21 20:58
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,3,5-Trimethylbenzene	2.04	1.00	0.310	ug/L	1		10/06/21 20:58
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:58
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:58
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:58
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:58
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
4-Isopropyltoluene	0.470 J	1.00	0.310	ug/L	1		10/06/21 20:58
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:58
Benzene	31.0	0.400	0.120	ug/L	1		10/06/21 20:58
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:58
Bromoform	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Bromomethane	3.00 U	6.00	3.00	ug/L	1		10/06/21 20:58
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:58
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:58
Chloroethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58

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Results of MW12-0921

Client Sample ID: **MW12-0921** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322003 Lab Project ID: 1216322

Collection Date: 09/24/21 09:45 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

						Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Chloroform	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Chloromethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:58
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 20:58
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Dichlorodifluoromethane	0.490 J	1.00	0.310	ug/L	1		10/06/21 20:58
Ethylbenzene	9.21	1.00	0.310	ug/L	1		10/06/21 20:58
Freon-113	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:58
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Isopropylbenzene (Cumene)	3.17	1.00	0.310	ug/L	1		10/06/21 20:58
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:58
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:58
Naphthalene	5.84	1.00	0.310	ug/L	1		10/06/21 20:58
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
n-Propylbenzene	3.06	1.00	0.310	ug/L	1		10/06/21 20:58
o-Xylene	10.6	1.00	0.310	ug/L	1		10/06/21 20:58
P & M -Xylene	41.1	2.00	0.620	ug/L	1		10/06/21 20:58
sec-Butylbenzene	0.580 J	1.00	0.310	ug/L	1		10/06/21 20:58
Styrene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Toluene	1.83	1.00	0.310	ug/L	1		10/06/21 20:58
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 20:58
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		10/06/21 20:58
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		10/06/21 20:58
Xylenes (total)	51.7	3.00	1.00	ug/L	1		10/06/21 20:58
Surrogates							
1,2-Dichloroethane-D4 (surr)	97.3	81-118		%	1		10/06/21 20:58
4-Bromofluorobenzene (surr)	99.4	85-114		%	1		10/06/21 20:58
Toluene-d8 (surr)	101	89-112		%	1		10/06/21 20:58

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Results of MW12-0921

Client Sample ID: **MW12-0921** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322003 Lab Project ID: 1216322

Collection Date: 09/24/21 09:45 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21251 Analytical Method: SW8260D Analyst: MDT Analytical Date/Time: 10/06/21 20:58 Container ID: 1216322003-H Prep Batch: VXX37977 Prep Method: SW5030B Prep Date/Time: 10/06/21 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of Trip Blank Client Sample ID: Trip Blank Client Project ID: Kobuk Feed and Fu		Collection Date: 09/24/21 08:00 Received Date: 09/25/21 11:13						
Lab Sample ID: 1216322004 Lab Project ID: 1216322		Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Volatile Fuels								
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0450	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyze</u> 09/27/21 15:0	
urrogates								
4-Bromofluorobenzene (surr)	75	50-150		%	1		09/27/21 15:0	
Batch Information								
Analytical Batch: VFC15847 Analytical Method: AK101 Analyst: IJV Analytical Date/Time: 09/27/21 15:02 Container ID: 1216322004-A	Prep Batch: VXX37917 Prep Method: SW5030B Prep Date/Time: 09/27/21 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL							

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Results of Trip Blank

Client Sample ID: **Trip Blank** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322004 Lab Project ID: 1216322

Collection Date: 09/24/21 08:00 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 18:46
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 18:46
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		10/06/21 18:46
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		10/06/21 18:46
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		10/06/21 18:46
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,2-Dichloroethane	0.250 U	0.500	0.200	ug/L	1		10/06/21 18:46
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		10/06/21 18:46
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/06/21 18:46
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		10/06/21 18:46
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		10/06/21 18:46
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		10/06/21 18:46
Benzene	0.200 U	0.400	0.120	ug/L	1		10/06/21 18:46
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		10/06/21 18:46
Bromoform	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
Bromomethane	3.00 U	6.00	3.00	ug/L	1		10/06/21 18:46
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		10/06/21 18:46
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/06/21 18:46
Chloroethane	0.500 U	1.00	0.310	ug/L	1		10/06/21 18:46

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Results of Trip Blank

Client Sample ID: **Trip Blank** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322004 Lab Project ID: 1216322

Collection Date: 09/24/21 08:00 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

						Allowable
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits Date Analyzed
Chloroform	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Chloromethane	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1	10/06/21 18:40
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1	10/06/21 18:40
Dibromomethane	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Freon-113	5.00 U	10.0	3.10	ug/L	1	10/06/21 18:40
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Methylene chloride	5.00 U	10.0	3.10	ug/L	1	10/06/21 18:40
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1	10/06/21 18:40
Naphthalene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
o-Xylene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1	10/06/21 18:40
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Styrene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Toluene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Trichloroethene	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1	10/06/21 18:40
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1	10/06/21 18:40
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1	10/06/21 18:40
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1	10/06/21 18:40
Surrogates						
1,2-Dichloroethane-D4 (surr)	111	81-118		%	1	10/06/21 18:40
4-Bromofluorobenzene (surr)	98	85-114		%	1	10/06/21 18:40
Toluene-d8 (surr)	99.5	89-112		%	1	10/06/21 18:40

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Results of Trip Blank

Client Sample ID: **Trip Blank** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1216322004 Lab Project ID: 1216322 Collection Date: 09/24/21 08:00 Received Date: 09/25/21 11:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21251 Analytical Method: SW8260D Analyst: MDT Analytical Date/Time: 10/06/21 18:46 Container ID: 1216322004-D Prep Batch: VXX37977 Prep Method: SW5030B Prep Date/Time: 10/06/21 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

Print Date: 10/13/2021 10:25:41AM

J flagging is activated

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ank ID: MB for HBN 18262 ank Lab ID: 1638587 C for Samples: 16322004	214 [VXX/37917]	Matrix	:: Water (Surfac	æ, Eff., Ground)
Results by AK101				
Parameter Gasoline Range Organics	<u>Results</u> 0.0500U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0450	<u>Units</u> mg/L
t urrogates 4-Bromofluorobenzene (surr)	76.5	50-150		%
atch Information				
Analytical Batch: VFC15847 Analytical Method: AK101 Instrument: Agilent 7890 PII Analyst: IJV Analytical Date/Time: 9/27/2	D/FID	Prep Bai Prep Me Prep Da Prep Init Prep Ext	21 6:00:00AM	

Print Date: 10/13/2021 10:25:43AM



Blank Spike ID: LCS for HBN 1216322 [VXX37917] Blank Spike Lab ID: 1638588 Date Analyzed: 09/27/2021 09:20 Spike Duplicate ID: LCSD for HBN 1216322 [VXX37917] Spike Duplicate Lab ID: 1638589 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322004

Results by AK101									
		Blank Spike	e (mg/L)	S	pike Dupli	cate (mg/L)			
<u>Parameter</u>	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	0.995	100	1.00	0.991	99	(60-120)	0.37	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		93	0.0500		92	(50-150)	1.30	
Batch Information									
Analytical Batch: VFC15847				Prep	Batch: V	XX37917			
Analytical Method: AK101				Prep	Method:	SW5030B			
Instrument: Agilent 7890 PID/	FID			Prep	Date/Tim	e: 09/27/202	1 06:00		
Analyst: IJV						· · · · · · · · · · · · · · · · · · ·	g/L Extract		
				Dup	e Init Wt./\	/ol.: 1.00 mg	g/L Extract V	ol: 5 mL	

Print Date: 10/13/2021 10:25:45AM

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Method Blank]			
Blank ID: MB for HBN 18262 Blank Lab ID: 1638590	15 [VXX/37918]	Matri	x: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1216322001, 1216322002, 1216	322003				
Results by AK101					
Parameter	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>	
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L	
Surrogates					
4-Bromofluorobenzene (surr)	75.2	50-150		%	
Batch Information					
Analytical Batch: VFC15847		Prep Ba	atch: VXX37918		
Analytical Method: AK101			ethod: SW5030E		
Instrument: Agilent 7890 PID	/FID		ate/Time: 9/27/20		
Analyst: IJV Analytical Date/Time: 9/27/2	021 0·41·00PM		itial Wt./Vol.: 5 m «tract Vol: 5 mL	IL	
	021 0.41.001 W	1100 27			



Blank Spike ID: LCS for HBN 1216322 [VXX37918] Blank Spike Lab ID: 1638591 Date Analyzed: 09/28/2021 01:36 Spike Duplicate ID: LCSD for HBN 1216322 [VXX37918] Spike Duplicate Lab ID: 1638592 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322001, 1216322002, 1216322003

Results by AK101									
		Blank Spike	e (mg/L)	S	Spike Duplicate (mg/L)				
<u>Parameter</u>	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	0.997	100	1.00	0.969	97	(60-120)	2.80	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		92	0.0500		91	(50-150)	1.40	
Batch Information									
Analytical Batch: VFC15847				Prep	Batch: V	XX37918			
Analytical Method: AK101				Prep	Method:	SW5030B			
Instrument: Agilent 7890 PID	FID			Prep	Date/Tim	e: 09/27/202	21 06:00		
Analyst: IJV						· · · · · · · · · · · · · · · · · · ·	g/L Extract \		
				Dup	e Init Wt./V	/ol.: 1.00 mg	g/L Extract V	ol: 5 mL	

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Method Blank

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Blank ID: MB for HBN 1826621 [VXX/37970] Blank Lab ID: 1640392

QC for Samples: 1216322001

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>
Benzene	0.200U	0.400	0.120	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	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	92.4	81-118		%
4-Bromofluorobenzene (surr)	96.1	85-114		%
Toluene-d8 (surr)	96.2	89-112		%

Batch Information

Analytical Batch: VMS21248 Analytical Method: SW8260D Instrument: Agilent 7890-75MS Analyst: MDT Analytical Date/Time: 10/5/2021 12:11:00PM Prep Batch: VXX37970 Prep Method: SW5030B Prep Date/Time: 10/5/2021 6:00:00AM Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

Matrix: Water (Surface, Eff., Ground)

Print Date: 10/13/2021 10:25:52AM



Blank Spike ID: LCS for HBN 1216322 [VXX37970] Blank Spike Lab ID: 1640393 Date Analyzed: 10/05/2021 12:26 Spike Duplicate ID: LCSD for HBN 1216322 [VXX37970] Spike Duplicate Lab ID: 1640394 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322001

Results by SW8260D

		Blank Spike	e (ug/L)	:	Spike Dupli	cate (ug/L)			
<u>Parameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Benzene	30	28.9	96	30	28.2	94	(79-120)	2.40	(< 20)
Ethylbenzene	30	29.8	100	30	28.8	96	(79-121)	3.50	(< 20)
o-Xylene	30	30.4	101	30	29.4	98	(78-122)	3.40	(< 20)
P & M -Xylene	60	59.2	99	60	58.0	97	(80-121)	2.10	(< 20)
Toluene	30	28.9	96	30	28.0	93	(80-121)	3.30	(< 20)
Xylenes (total)	90	89.5	100	90	87.3	97	(79-121)	2.50	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		105	30		106	(81-118)	1.30	
4-Bromofluorobenzene (surr)	30		102	30		104	(85-114)	1.40	
Toluene-d8 (surr)	30		97	30		95	(89-112)	1.20	

Batch Information

Analytical Batch: VMS21248 Analytical Method: SW8260D Instrument: Agilent 7890-75MS Analyst: MDT Prep Batch: VXX37970 Prep Method: SW5030B Prep Date/Time: 10/05/2021 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: 10/13/2021 10:25:55AM



Method Blank

Blank ID: MB for HBN 1826663 [VXX/37977] Blank Lab ID: 1640601 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322002, 1216322004

Results by SW8260D

-				
Parameter	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.200	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	3.00U	6.00	3.00	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

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Method Blank

Blank ID: MB for HBN 1826663 [VXX/37977] Blank Lab ID: 1640601 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322002, 1216322004

Results by SW8260D LOQ/CL Parameter Results DL Units Chloromethane 0.500U 1.00 0.310 ug/L cis-1,2-Dichloroethene 0.500U 1.00 0.310 ug/L 0.500 cis-1,3-Dichloropropene 0.250U 0.150 ug/L Dibromochloromethane 0.500 0.250U 0.150 ug/L Dibromomethane 0.500U 1.00 0.310 ug/L Dichlorodifluoromethane 0.500U 1.00 0.310 ug/L Ethylbenzene 0.500U 1.00 0.310 ug/L Freon-113 5.00U 10.0 3.10 ug/L 1.00 Hexachlorobutadiene 0.500U 0.310 ug/L Isopropylbenzene (Cumene) 0.500U 1.00 0.310 ug/L Methylene chloride 5.00U 10.0 3.10 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 n-Propylbenzene 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 0.500U 1.00 0.310 Styrene ug/L tert-Butylbenzene 0.500U 1.00 0.310 ug/L Tetrachloroethene 0.500U 1.00 0.310 ug/L Toluene 0.500U 1.00 0.310 ug/L trans-1,2-Dichloroethene 0.500U 1.00 0.310 ug/L trans-1,3-Dichloropropene 0.500U 1.00 0.310 ug/L Trichloroethene 0.500U 1.00 0.310 ug/L Trichlorofluoromethane 0.500U 1.00 0.310 ug/L Vinyl acetate 5.00U 10.0 3.10 ug/L Vinyl chloride 0.0750U 0.150 0.0500 ug/L Xylenes (total) 1.50U 3.00 1.00 ug/L Surrogates 106 81-118 % 1,2-Dichloroethane-D4 (surr) 4-Bromofluorobenzene (surr) 98.2 85-114 % Toluene-d8 (surr) 99 89-112 %

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Method Blank								
Blank ID: MB for HBN Blank Lab ID: 164060	l 1826663 [VXX/37977] 1	Matrix	k: Water (Su	face, Eff., Ground)				
QC for Samples: 1216322002, 12163220	03, 1216322004							
Results by SW8260D								
Parameter	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>				
atch Information								
Analytical Batch: VN	- 1S21251	Prep Ba	tch: VXX379	77				
Analytical Method: SW8260D		Prep Method: SW5030B						
Analytical Method: S		i i op ivic		Prep Date/Time: 10/6/2021 6:00:00AM				
Analytical Method: S Instrument: VPA 78		Prep Da	te/Time: 10/6					
Instrument: VPA 78 Analyst: MDT		Prep Da Prep Init		5 mL				

Print Date: 10/13/2021 10:25:58AM



Blank Spike ID: LCS for HBN 1216322 [VXX37977] Blank Spike Lab ID: 1640602 Date Analyzed: 10/06/2021 15:00 Spike Duplicate ID: LCSD for HBN 1216322 [VXX37977] Spike Duplicate Lab ID: 1640603 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322002, 1216322003, 1216322004

Results by SW8260D

		Blank Spike	e (ug/L)	:	Spike Dupli	cate (ug/L)			
Parameter	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
1,1,1,2-Tetrachloroethane	30	31.2	104	30	31.9	106	(78-124)	2.20	(< 20)
1,1,1-Trichloroethane	30	31.1	104	30	31.2	104	(74-131)	0.16	(< 20)
1,1,2,2-Tetrachloroethane	30	28.5	95	30	30.0	100	(71-121)	5.00	(< 20)
1,1,2-Trichloroethane	30	30.0	100	30	31.2	104	(80-119)	3.70	(< 20)
1,1-Dichloroethane	30	29.9	100	30	30.4	101	(77-125)	1.50	(< 20)
1,1-Dichloroethene	30	30.6	102	30	30.6	102	(71-131)	0.07	(< 20)
1,1-Dichloropropene	30	30.7	102	30	30.7	102	(79-125)	0.00	(< 20)
1,2,3-Trichlorobenzene	30	29.3	98	30	30.6	102	(69-129)	4.20	(< 20)
1,2,3-Trichloropropane	30	28.8	96	30	30.1	100	(73-122)	4.30	(< 20)
1,2,4-Trichlorobenzene	30	29.6	99	30	30.4	101	(69-130)	2.70	(< 20)
1,2,4-Trimethylbenzene	30	30.6	102	30	30.5	102	(79-124)	0.29	(< 20)
1,2-Dibromo-3-chloropropane	30	28.1	94	30	30.2	101	(62-128)	7.20	(< 20)
1,2-Dibromoethane	30	30.0	100	30	31.4	105	(77-121)	4.70	(< 20)
1,2-Dichlorobenzene	30	29.4	98	30	29.7	99	(80-119)	0.88	(< 20)
1,2-Dichloroethane	30	29.7	99	30	30.9	103	(73-128)	4.00	(< 20)
1,2-Dichloropropane	30	31.0	103	30	31.4	105	(78-122)	1.20	(< 20)
1,3,5-Trimethylbenzene	30	30.8	103	30	30.0	100	(75-124)	2.60	(< 20)
1,3-Dichlorobenzene	30	30.0	100	30	29.9	100	(80-119)	0.33	(< 20)
1,3-Dichloropropane	30	29.9	100	30	31.0	103	(80-119)	3.70	(< 20)
1,4-Dichlorobenzene	30	29.7	99	30	30.1	100	(79-118)	1.40	(< 20)
2,2-Dichloropropane	30	30.9	103	30	30.9	103	(60-139)	0.00	(< 20)
2-Butanone (MEK)	90	90.8	101	90	97.0	108	(56-143)	6.60	(< 20)
2-Chlorotoluene	30	29.6	99	30	29.3	98	(79-122)	1.30	(< 20)
2-Hexanone	90	89.0	99	90	95.9	107	(57-139)	7.50	(< 20)
4-Chlorotoluene	30	29.6	99	30	29.4	98	(78-122)	0.54	(< 20)
4-Isopropyltoluene	30	30.8	103	30	30.3	101	(77-127)	1.90	(< 20)
4-Methyl-2-pentanone (MIBK)	90	97.3	108	90	105	117	(67-130)	7.70	(< 20)
Benzene	30	30.6	102	30	30.9	103	(79-120)	0.88	(< 20)
Bromobenzene	30	29.5	98	30	30.1	100	(80-120)	1.90	(< 20)
Bromochloromethane	30	31.4	105	30	32.3	108	(78-123)	2.70	(< 20)
Bromodichloromethane	30	31.5	105	30	32.3	108	(79-125)	2.40	(< 20)
Bromoform	30	31.6	105	30	33.5	112	(66-130)	6.00	(< 20)
Bromomethane	30	27.8	93	30	30.7	102	(53-141)	9.80	(< 20)
Carbon disulfide	45	45.4	101	45	44.8	100	(64-133)	1.30	(< 20)

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Blank Spike ID: LCS for HBN 1216322 [VXX37977] Blank Spike Lab ID: 1640602 Date Analyzed: 10/06/2021 15:00 Spike Duplicate ID: LCSD for HBN 1216322 [VXX37977] Spike Duplicate Lab ID: 1640603 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322002, 1216322003, 1216322004

Results by SW8260D

		Blank Spike	e (ug/L)	:	Spike Dupli	cate (ug/L)			
<u>Parameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Carbon tetrachloride	30	32.2	107	30	32.1	107	(72-136)	0.47	(< 20)
Chlorobenzene	30	30.1	100	30	30.5	102	(82-118)	1.60	(< 20)
Chloroethane	30	30.3	101	30	29.3	98	(60-138)	3.40	(< 20)
Chloroform	30	29.5	98	30	29.9	100	(79-124)	1.30	(< 20)
Chloromethane	30	28.7	96	30	28.2	94	(50-139)	1.40	(< 20)
cis-1,2-Dichloroethene	30	30.7	102	30	31.3	104	(78-123)	2.00	(< 20)
cis-1,3-Dichloropropene	30	30.0	100	30	31.2	104	(75-124)	3.70	(< 20)
Dibromochloromethane	30	31.6	105	30	33.1	110	(74-126)	4.80	(< 20)
Dibromomethane	30	29.7	99	30	32.1	107	(79-123)	7.90	(< 20)
Dichlorodifluoromethane	30	31.3	104	30	30.5	102	(32-152)	2.50	(< 20)
Ethylbenzene	30	30.2	101	30	30.5	102	(79-121)	1.10	(< 20)
Freon-113	45	47.1	105	45	46.6	103	(70-136)	1.10	(< 20)
Hexachlorobutadiene	30	29.9	100	30	29.7	99	(66-134)	0.54	(< 20)
Isopropylbenzene (Cumene)	30	31.5	105	30	31.3	104	(72-131)	0.73	(< 20)
Methylene chloride	30	30.0	100	30	30.4	101	(74-124)	1.50	(< 20)
Methyl-t-butyl ether	45	47.4	105	45	49.7	110	(71-124)	4.60	(< 20)
Naphthalene	30	28.7	96	30	31.1	104	(61-128)	8.00	(< 20)
n-Butylbenzene	30	29.8	99	30	29.7	99	(75-128)	0.57	(< 20)
n-Propylbenzene	30	29.4	98	30	28.9	96	(76-126)	1.80	(< 20)
o-Xylene	30	31.0	103	30	31.0	103	(78-122)	0.10	(< 20)
P & M -Xylene	60	60.4	101	60	61.0	102	(80-121)	0.99	(< 20)
sec-Butylbenzene	30	29.7	99	30	29.2	97	(77-126)	1.80	(< 20)
Styrene	30	32.4	108	30	32.7	109	(78-123)	0.92	(< 20)
tert-Butylbenzene	30	30.4	101	30	29.7	99	(78-124)	2.50	(< 20)
Tetrachloroethene	30	30.6	102	30	30.8	103	(74-129)	0.68	(< 20)
Toluene	30	29.8	100	30	29.8	99	(80-121)	0.13	(< 20)
trans-1,2-Dichloroethene	30	30.9	103	30	30.6	102	(75-124)	1.10	(< 20)
trans-1,3-Dichloropropene	30	30.9	103	30	31.9	106	(73-127)	3.10	(< 20)
Trichloroethene	30	30.0	100	30	30.1	100	(79-123)	0.43	(< 20)
Trichlorofluoromethane	30	31.6	105	30	30.9	103	(65-141)	2.20	(< 20)
Vinyl acetate	30	29.6	99	30	31.4	105	(54-146)	5.90	(< 20)
Vinyl chloride	30	30.6	102	30	30.2	101	(58-137)	1.30	(< 20)
Xylenes (total)	90	91.3	101	90	91.9	102	(79-121)	0.62	(< 20)

Print Date: 10/13/2021 10:26:00AM

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Blank Spike ID: LCS for HBN 1216322 [VXX37977] Blank Spike Lab ID: 1640602 Date Analyzed: 10/06/2021 15:00 Spike Duplicate ID: LCSD for HBN 1216322 [VXX37977] Spike Duplicate Lab ID: 1640603 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322002, 1216322003, 1216322004

Results by SW8260D

		Blank Spil	ke (%)		Spike Dup	licate (%)			
<u>Parameter</u>	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		100	30		102	(81-118)	1.30	
4-Bromofluorobenzene (surr)	30		97	30		98	(85-114)	0.10	
Toluene-d8 (surr)	30		101	30		100	(89-112)	0.20	

Batch Information

Analytical Batch: VMS21251 Analytical Method: SW8260D Instrument: VPA 780/5975 GC/MS Analyst: MDT Prep Batch: VXX37977 Prep Method: SW5030B Prep Date/Time: 10/06/2021 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: 10/13/2021 10:26:00AM

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Blank ID: MB for HBN 182 Blank Lab ID: 1639235	6373 [XXX/45650]	Matrix	k: Water (Surfa	ce, Eff., Ground)		
QC for Samples: 1216322001, 1216322002, 1	216322003					
Results by AK102						
<u>Parameter</u>	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>		
Diesel Range Organics	0.300U	0.600	0.200	mg/L		
Surrogates						
5a Androstane (surr)	70.8	60-120		%		
atch Information						
Analytical Batch: XFC160)97	Prep Ba	tch: XXX45650			
Analytical Method: AK102			ethod: SW35200			
Instrument: Agilent 7890	3 R			021 4:00:06PM		
Analyst: IVM Analytical Date/Time: 10/	2/2021 2:00:000M	Prep Initial Wt./Vol.: 250 mL				
Analytical Date/Time: 10/	2/2021 0.00.00PW	Prep Ex	tract Vol: 1 mL			

Print Date: 10/13/2021 10:26:03AM



Blank Spike ID: LCS for HBN 1216322 [XXX45650] Blank Spike Lab ID: 1639236 Date Analyzed: 10/02/2021 20:10 Spike Duplicate ID: LCSD for HBN 1216322 [XXX45650] Spike Duplicate Lab ID: 1639237 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322001, 1216322002, 1216322003

Results by AK102			_						
		Blank Spike	e (mg/L)	Ś	Spike Duplic	cate (mg/L)			,
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Diesel Range Organics	20	18.7	94	20	17.7	89	(75-125)	5.60	(< 20)
Surrogates									
5a Androstane (surr)	0.4		98	0.4		96	(60-120)	2.10	
Batch Information									
Analytical Batch: XFC16097 Analytical Method: AK102					p Batch: X p Method:				
Instrument: Agilent 7890B R Analyst: IVM				Spi	ke Init Wt./\	0	1 16:00 Extract Vo Extract Vol		

Print Date: 10/13/2021 10:26:05AM



Method Blank

Blank ID: MB for HBN 1826439 [XXX/45655] Blank Lab ID: 1639560 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322002, 1216322003

Results by 8270D SIM LV (PAH)

Parameter	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0174J	0.0500	0.0150	ug/L
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	0.0181J	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	66.2	42-86		%
Fluoranthene-d10 (surr)	83	50-97		%

Batch Information

Analytical Batch: XMS12930 Analytical Method: 8270D SIM LV (PAH) Instrument: SVA Agilent 780/5975 GC/MS Analyst: LAW Analytical Date/Time: 10/2/2021 4:19:00PM Prep Batch: XXX45655 Prep Method: SW3535A Prep Date/Time: 10/1/2021 4:30:45PM Prep Initial Wt./Vol.: 250 mL Prep Extract Vol: 1 mL

Print Date: 10/13/2021 10:26:08AM

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Blank Spike ID: LCS for HBN 1216322 [XXX45655] Blank Spike Lab ID: 1639561 Date Analyzed: 10/02/2021 16:39 Spike Duplicate ID: LCSD for HBN 1216322 [XXX45655] Spike Duplicate Lab ID: 1639562 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1216322002, 1216322003

Results by 8270D SIM LV (PAH)

		Blank Spike	e (ug/L)	:	Spike Dupli	cate (ug/L)			
<u>Parameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	Spike	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
1-Methylnaphthalene	2	1.41	71	2	1.53	76	(41-115)	7.80	(< 20)
2-Methylnaphthalene	2	1.36	68	2	1.48	74	(39-114)	8.40	(< 20)
Acenaphthene	2	1.60	80	2	1.74	87	(48-114)	8.40	(< 20)
Acenaphthylene	2	1.63	82	2	1.80	90	(35-121)	10.00	(< 20)
Anthracene	2	1.65	83	2	1.79	90	(53-119)	8.30	(< 20)
Benzo(a)Anthracene	2	1.68	84	2	1.78	89	(59-120)	5.30	(< 20)
Benzo[a]pyrene	2	1.72	86	2	1.84	92	(53-120)	6.90	(< 20)
Benzo[b]Fluoranthene	2	1.74	87	2	1.81	90	(53-126)	3.90	(< 20)
Benzo[g,h,i]perylene	2	1.87	93	2	1.98	99	(44-128)	6.10	(< 20)
Benzo[k]fluoranthene	2	1.76	88	2	1.89	94	(54-125)	7.00	(< 20)
Chrysene	2	1.72	86	2	1.83	92	(57-120)	6.60	(< 20)
Dibenzo[a,h]anthracene	2	1.85	93	2	1.98	99	(44-131)	6.50	(< 20)
Fluoranthene	2	1.67	83	2	1.76	88	(58-120)	5.60	(< 20)
Fluorene	2	1.66	83	2	1.80	90	(50-118)	8.20	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.83	92	2	1.95	98	(48-130)	6.20	(< 20)
Naphthalene	2	1.38	69	2	1.51	76	(43-114)	9.50	(< 20)
Phenanthrene	2	1.66	83	2	1.77	89	(53-115)	6.60	(< 20)
Pyrene	2	1.69	85	2	1.79	89	(53-121)	5.30	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2		63	2		69	(42-86)	10.30	
Fluoranthene-d10 (surr)	2		76	2		81	(50-97)	6.90	

Batch Information

Analytical Batch: XMS12930 Analytical Method: 8270D SIM LV (PAH) Instrument: SVA Agilent 780/5975 GC/MS Analyst: LAW Prep Batch: XXX45655 Prep Method: SW3535A Prep Date/Time: 10/01/2021 16:30 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 10/13/2021 10:26:10AM

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Alaska Resources and Environmental Services P.O. Box 83050, Farbanks, Alaska 99708 Phone: 907.374.3226

Work Order No.:

SGS 200 W Potter Dr Anchorage, AK 99518

Designed Manager															
	Lyle Gresenover							T			Lyle Gresenovel	Jover			
Client Name: Alaska	Resources (Alaska Resources and Environmental Services	nental Service	ş					Company:	iny:	Alaska Res	ources and E	Alaska Resources and Environmental Services	vices	
Address: PO Boy	PO Box 83050								Address:	is:	PO Box 83050	050			
City, State ZIP: Fairban	Fairbanks, AK 99708	38							City, SI	City, State ZIP:	Fairbanks, AK 99708	AK 99708			
	Lyle@ak-res.com			Phone:	907.3	07.374.3226	26		Email:		Lyle@ak-res.com	s.com			
Project Name: Kobuk	Kobuk Feed and Fuel	uel							R	REQUESTED ANALYSIS	ANALYSI	S		TAT	
er:														X Routine	
P.O. Number: Date 9	Date 9-24-2021									-	1016300	00		Same Day ***	ŧ
Sampler's Name: Josh Klynstra	lynstra											1		Next Day ***	t
	SAMPLE RECEIPT	:CEIPT												5 Day	
Temperature (C):	5.8	Temp Bla	Temp Blank Present	5										7 Day	
Received Intact:		No N/A	Wet Ice / Blue Ice	lue Ice						-	-				
Cooler Custody Seals:	Yes	No HDR/A	Total Containers:	viners:										*** Please call for	þ
Sample Custody Seals:	Yes	NO ATA		an an talk	sters									availability	
Sample Identification	Matrix	Date Sampled	Time Sampled	Ci dal	nistno2 to .	O PÅ ¥K101 OC2 8560	201 by AK102	H 8520D 21W	WIS DO728 H					Due Date:	
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UPP Trip Blank	>	9/24/2021	0800		9	× ×									
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e-Sample Receipt Form FBK

000	e-Sample	Receipt F	orm FBK					-
272	SGS Workorder #:		ARE	S		AR	ES	
Review C	riteria	Condition (Yes	, No, N/A	Exce	ptions N	oted bel	ow	Na (1944). De Maio de
Chain of Custo	ody / Temperature Requi	rements	Antine and A	es Exemption per	mitted if sar	mpler hand	carries/deliv	vers.
Were	Custody Seals intact? Note # &	location N/A						
	COC accompanied sa	amples? Yes						
DOD: Were samples	received in COC corresponding of							
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Temperature blar	nk compliant* (i.e., 0-6 °C afte	er CF)? Yes	Cooler ID	: 1	@		Therm. ID:	D62
에 있는 것은 것은 것은 것을 알려졌다. 전통 것을 같은 것은 것을			Cooler ID		@	°C	Therm. ID:	
If samples received without a temperatu ocumented instead & "COOLER TEMP" will			Cooler ID		@		Therm. ID:	
be noted if nei	ther is available.		Cooler ID	:	@	°C	Therm. ID:	
*lf >6°C, wer	e samples collected <8 hours	s ago?						
l t <0°C	C, were sample containers ice	e free?						
Holding Time / Documer Do samples match COC** (i.e. **Note: If times differ <1hi **Note: If sample information on containers Were samples in good co Were analytical requests clear? (i with multiple op Were Trip Blanks (i.e., VO Were all water VOA vials free o	r, record details & login per C differs from COC, SGS will default to indition (no leaks/cracks/brea .e., method is specified for a otion for analysis (Ex: BTEX, DAs, LL-Hg) in cooler with sa	ected)? N/C COC. COC informatio akage)? Yes nalyses Metals) Yes amples? Yes 6mm)? N/C		er to form F-083 "Sa	ample Guid	e" for speci	ific holding t	imes.
For Rush/Short Hold Tin	ne, was RUSH/Short HT ema	ail sent? N/A		·				
Note to Client: Any	"No", answer above indicates no	on-compliance	with stand	ard procedures and	may impac	ct data qual	lity.	
		al notes (if						
SGS Profile #	3346				1646			
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e-Sample Receipt Form

Review Criteria A Chain of Custody / Temperature Requirer Were Custody Seals intact? Note # & loca COC accompanied samp DOD: Were samples received in COC corresponding cool NA **Exemption permitted if chil Temperature blank compliant* (i.e., 0-6 °C after C 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 be noted if neither is available. *If >6°C, were samples collected <8 hours ag If <0°C, were sample containers ice free Note: Identify containers received at non-compliant temperature Use form FS-0029 if more space is need	ation Ye les? Ye ers? led & ccc F)? Ye "will N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N	A Coor A Coor	N/A Exe B	mption per	mitted if sam	chilling is not requi	red . ID: D (. ID: . ID: . ID:
Were Custody Seals intact? Note # & loca COC accompanied samp DOD: Were samples received in COC corresponding cool N/A **Exemption permitted if chil Temperature blank compliant* (i.e., 0-6 °C after C If samples received without a temperature blank, the "cooler temperature" will be locumented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled be noted if neither is available. */If >6°C, were samples collected <8 hours ag If <0°C, were sample containers ice free Note: Identify containers received at non-compliant temperature	ation Ye les? Ye ers? led & ccc F)? Ye "will N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N	es Converse	B <8 hours ago, pler ID: pler ID: pler ID: pler ID:		ples where c @ @ @ @	chilling is not requi 1.9 °C Therm °C Therm °C Therm °C Therm °C Therm	red . ID: D (. ID: . ID: . ID:
COC accompanied samp DOD: Were samples received in COC corresponding cool N/A **Exemption permitted if chil Temperature blank compliant* (i.e., 0-6 °C after C 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 be noted if neither is available. *If >6°C, were samples collected <8 hours ag If <0°C, were sample containers ice free Note: Identify containers received at non-compliant temperature	les? Ye ers? led & ccc F)? Ye N/ "will N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N	es Converse	<8 hours ago, pler ID: pler ID: pler ID: pler ID:	or for sam	@ @ @ @	1.9 °C Therm °C Therm °C Therm °C Therm	. ID: D (. ID: . ID: . ID:
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N/A **Exemption permitted if chil Temperature blank compliant* (i.e., 0-6 °C after C 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 be noted if neither is available. *If >6°C, were samples collected <8 hours ag	led & ccc F)? Ye " will N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N	A Coor A Coor A Coor A Coor A Coor A Coor A Coor A Coor	oler ID: oler ID: oler ID: oler ID:	or for sam	@ @ @ @	1.9 °C Therm °C Therm °C Therm °C Therm	. ID: D (. ID: . ID: . ID:
Temperature blank compliant* (i.e., 0-6 °C after C 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 be noted if neither is available. *If >6°C, were samples collected <8 hours ag If <0°C, were sample containers ice fre Note: Identify containers received at non-compliant temperature	F)? Ye N/ " will N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N/ N	A Coor A Coor A Coor A Coor A Coor A Coor A Coor A Coor	oler ID: oler ID: oler ID: oler ID:	or for sam	@ @ @ @	1.9 °C Therm °C Therm °C Therm °C Therm	. ID: D (. ID: . ID: . ID:
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be noted if neither is available. *If >6°C, were samples collected <8 hours ag If <0°C, were sample containers ice fre Note: Identify containers received at non-compliant temperatu	N/ N/ N/ Pee? Ye	/A Cod					
If <0°C, were sample containers ice fre Note: Identify containers received at non-compliant temperatu	10? N 200? Ye 110 .	/A	oler ID:		@	°C Therm	. ID:
If <0°C, were sample containers ice fre Note: Identify containers received at non-compliant temperatu	e? Ye						
Note: Identify containers received at non-compliant temperatu	Ire .	es					
Note: Identify containers received at non-compliant temperatu	Ire .	es					
Use form FS-0029 if more space is need							
	lea.						
Holding Time / Documentation / Sample Condition Requ			: Refer to form F-	-083 "Sample	e Guide" for sp	becific holding times.	
Were samples received within holding tir	ne?	es					
Do samples match COC** (i.e., sample IDs, dates/times collecte		0.00	Setatos PAH f	or Sample	1 however	containers are n	ot pres
**Note: If times differ <1hr, record details & login per COC			Notified.	or oumpre	, i nowever	containers are n	or pres
*Note: If sample information on containers differs from COC, SGS will default to COC		ion					
Were analytical requests clear? (i.e., method is specified for analy with multiple option for analysis (Ex: BTEX, Met		es					
	ais)						
		_	N/A ***E	vomotion	ormittad for	metals (e.g,200.8	CO20P
Were proper containers (type/mass/volume/preservative***)us	od2					Thetais (e.g,200.0	100200
		-5					
Volatile / LL-Hg Requir	emen	ts					
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with sample							
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6m							
Were all soil VOAs field extracted with MeOH+BI							
Note to Client: Any "No", answer above indicates non-co			standard proce	dures and	may impact	data quality	
						data quanty.	
Additional n	otes (if	f appli	cable):				



Sample Containers and Preservatives

Container Id	<u>Preservative</u>	<u>Container</u> Condition	<u>Container Id</u>	Preservative	<u>Container</u> <u>Condition</u>
1216322001-A	HCL to pH < 2	OK			
1216322001-B	HCL to pH < 2	ОК			
1216322001-C	HCL to pH < 2	ОК			
1216322001-D	HCL to $pH < 2$	ОК			
1216322001-E	HCL to $pH < 2$	ОК			
1216322001-F	HCL to $pH < 2$	ОК			
1216322001-G	HCL to pH < 2	ОК			
1216322001-H	HCL to $pH < 2$	ОК			
1216322002-A	HCL to $pH < 2$	ОК			
1216322002-B	HCL to $pH < 2$	ОК			
1216322002-C	No Preservative Required	ОК			
1216322002-D	No Preservative Required	ОК			
1216322002-E	HCL to $pH < 2$	ОК			
1216322002-F	HCL to $pH < 2$	ОК			
1216322002-G	HCL to $pH < 2$	ОК			
1216322002-H	HCL to $pH < 2$	ОК			
1216322002-I	HCL to $pH < 2$	ОК			
1216322002-J	HCL to $pH < 2$	ОК			
1216322003-A	HCL to $pH < 2$	ОК			
1216322003-B	HCL to $pH < 2$	ОК			
1216322003-C	No Preservative Required	ОК			
1216322003-D	No Preservative Required	ОК			
1216322003-E	HCL to $pH < 2$	ОК			
1216322003-F	HCL to $pH < 2$	ОК			
1216322003-G	HCL to $pH < 2$	ОК			
1216322003-H	HCL to $pH < 2$	ОК			
1216322003-I	HCL to $pH < 2$	OK			
1216322003-J	HCL to $pH < 2$	OK			
1216322004-A	HCL to $pH < 2$	OK			
1216322004-B	HCL to $pH < 2$	ОК			
1216322004-C	HCL to $pH < 2$	OK			
1216322004-D	HCL to $pH < 2$	OK			
1216322004-E	HCL to $pH < 2$	OK			
1216322004-F	HCL to $pH < 2$	OK			

Container Id

<u>Preservative</u>

Container Condition Container Id Pr

<u>Preservative</u>

Container Condition

Container Condition Glossary

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

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

Laboratory Data Review Checklist

Completed By:

Josh Klynstra

Title:

Environmental Chemist

Date:

22 October, 2021

Consultant Firm:

Alaska Resources and Environmental Services

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1216322

Laboratory Report Date:

10/13/2021

CS Site Name:

Kobuk Feed and Fuel

ADEC File Number:

100.26.137

Hazard Identification Number:

24434

1216322

Laboratory Report Date:

10/13/2021

CS Site Name:

Kobuk Feed and Fuel

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 <u>perform</u> all of the submitted sample analyses?

Yes \boxtimes No \square N/A \square Comments:

SGS North America is an ADEC CS approved laboratory.

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 \square No \square N/A \boxtimes Comments:

All samples were analyzed by the SGS Anchorage laboratory.

- 2. Chain of Custody (CoC)
 - a. CoC information completed, signed, and dated (including released/received by)?

Yes⊠	No□	$N/A\square$	Comments:
------	-----	--------------	-----------

b. Correct analyses requested?

Yes \boxtimes No \square N/A \square Comments:

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

Yes \boxtimes No \square N/A \square Comments:

Sample received by laboratory at a temperature of 5.8° C at the SGS Fairbanks office and 1.9° C at the SGS Anchorage laboratory.

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

Yes \boxtimes No \square N/A \square Comments:

Four (4) samples consisting of three (3) groundwater samples (including one duplicate sample) were received by SGS on September 24, 2021. The samples arrived in good condition and properly preserved.

1216322

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Site Name:	
Kobuk Feed and Fuel	
c. Sample condition documented Yes⊠ No□ N/A□	– broken, leaking (Methanol), zero headspace (VOC vials)? Comments:
	s, were they documented? For example, incorrect sample le temperature outside of acceptable range, insufficient or missing
-	Comments: C included PAH analysis for sample MW1-0921, but a PAH ield technician mistakenly included PAH analysis for this sample, bu ng event.
e. Data quality or usability affect	ed?
	Comments:
Data not affected.	
4. <u>Case Narrative</u>	
a. Present and understandable?	
$Yes \boxtimes No \square N/A \square$	Comments:
b. Discrepancies, errors, or QC	failures identified by the lab?
Yes No N/A	Comments:
The laboratory did not note any d	liscrepancies, errors or QC failures.
c. Were all corrective actions do	ocumented?
Yes□ No□ N/A⊠	Comments:
	red.
No corrective actions were require	
	ality/usability according to the case narrative?

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10/13/2021

CS Site Name:

Kobuk Feed and Fuel

5. <u>Samples Results</u>

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

Yes \boxtimes No \square N/A \square Comments:

b. All applicable holding times met?

Yes \boxtimes No \square N/A \square Comments:

c. All soils reported on a dry weight basis?

Yes \square No \square N/A \boxtimes Comments:

All samples for this project are groundwater samples.

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

Yes \square No \boxtimes N/A \square Comments:

1,2,3-Trichloropropane has a detection limit that exceeds the ADEC CL in one or more samples.

e. Data quality or usability affected?

Data quality is affected. Analytes with elevated detection limits could be present at concentrations that exceed ADEC cleanup levels. Data is still usable. Sample results with detection limits that exceed ADEC CUL's are highlighted in blue in the analytical summary table.

6. <u>QC Samples</u>

- a. Method Blank
 - i. One method blank reported per matrix, analysis and 20 samples?

Yes \boxtimes No \square N/A \square Comments:

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CS Site Name:

Kobuk Feed and Fuel

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

Yes \square No \boxtimes N/A \square Comments:

8270D SIM – 2-Methylnaphthalene (0.0174 ug/L) and Phenanthrene (0.018 ug/L) were detected in Method Blank 1639560 above the MDL but less than half the LOQ (0.0500 ug/L). Data quality is affected. Analytes detected in both the samples and the blank are considered high biased estimates and are qualified with the B data flag. These analytes were detected in associated samples significantly below ADEC CULs and remain usable. Data usability is not affected.

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

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

Yes \boxtimes No \square N/A \square Comments:

Affected results are flagged B for possible MB cross contamination

v. Data quality or usability affected?

Comments:

See Section 6.a.ii. above.

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

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

Yes \boxtimes No \square N/A \square Comments:

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

Yes \square No \square N/A \boxtimes Comments:

Metals/inorganics were not requested for this sampling event.

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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 \boxtimes No \square N/A \square Comments:

All percent recoveries were within acceptable limits.

 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 \boxtimes No \square N/A \square Comments:

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

All recoveries were within acceptance limits. No samples affected.

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

Yes \square No \square N/A \boxtimes Comments:

No data flagged.

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

Comments:

Data not affected.

- 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 \square No \square N/A \boxtimes Comments:

No MS/MSD required for this project.

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CS Site Name:

Kobuk Feed and Fuel

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

Yes \square No \square N/A \boxtimes Comments:

Metals/inorganics were not requested for this sampling event.

iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable?

Yes \square No \square N/A \boxtimes 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.

Yes \square No \square N/A \boxtimes 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 \square No \square N/A \boxtimes Comments:

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

N/A

- 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 \boxtimes No \square N/A \square Comments:

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Kobuk Feed and Fuel

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 for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes \boxtimes No \square N/A \square Comments:

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

Yes \square No \square N/A \boxtimes Comments:

All surrogate recoveries met acceptance criteria.

iv. Data quality or usability affected?

Comments:

No affect to data.

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

Yes \boxtimes No \square N/A \square 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 \square No \square N/A \boxtimes Comments:

All samples for this project were shipped in a single cooler.

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

Yes \boxtimes No \square N/A \square Comments:

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

N/A

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CS Site Name:

Kobuk Feed and Fuel

v. Data quality or usability affected?

Comments:

Data not affected.

- f. Field Duplicate
 - i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes \boxtimes No \square N/A \square Comments:

Sample MW12-0921 is the blind field duplicate to sample MW2-0921.

ii. Submitted blind to lab?

Yes \boxtimes No \square N/A \square Comments:

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

RPD (%) = Absolute value of: (R_1-R_2)

 $\frac{(R_1-R_2)}{((R_1+R_2)/2)} x 100$

Where $R_1 =$ Sample Concentration $R_2 =$ Field Duplicate Concentration

Yes \boxtimes No \square N/A \square Comments:

All calculated RPDs were within control limit.

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

Data not affected.

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

Yes \square No \square N/A \boxtimes Comments:

All equipment used for this project are new and disposable

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CS Site Name:

Kobuk Feed and Fuel

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

Yes \square No \square N/A \boxtimes Comments:

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 \boxtimes No \square N/A \square Comments:

Appendix C-4:

2022 Laboratory Report 1225201 & ADEC Lab Quality Checklist



Laboratory Report of Analysis

To: Alaska Resources and Env. Svcs P.O. Box 83050 Fairbanks, AK 99708

Report Number: 1225201

Client Project: Kobuk Feed and Fuel

Dear Lyle Gresehover,

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 Jennifer 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.

Jennifer Dawkins Project Manager Jennifer.Dawkins@sgs.com Date

Print Date: 09/29/2022 11:13:00AM

SGS North America Inc.

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



Case Narrative

SGS Client: Alaska Resources and Env. Svcs SGS Project: 1225201 Project Name/Site: Kobuk Feed and Fuel Project Contact: Lyle Gresehover

Refer to sample receipt form for information on sample condition.

MW1-0822 (1225201001) PS

AK102- LCSD recovery for DRO does not meet QC criteria. LCS and associated samples do meet QC criteria.

MW2-0822 (1225201002) PS

AK101 - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference. AK102- LCSD recovery for DRO does not meet QC criteria. LCS and associated samples do meet QC criteria.

MW12-0822 (1225201003) PS

AK102/103- Sample was lost due to lab error.

AK102/103 - Sample was not re-extracted due to insufficient remaining sample volume.

MW3-0822 (1225201004) PS

AK102- LCSD recovery for DRO does not meet QC criteria. LCS and associated samples do meet QC criteria.

LCSD for HBN 1842865 [XXX/4694 (1684239) LCSD

AK102- LCSD recovery for DRO does not meet QC criteria. LCS and associated samples do meet QC criteria.

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

Print Date: 09/29/2022 11:13:01AM

SGS North America Inc.

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



Report of Manual Integrations							
Laboratory ID	<u>Client Sample ID</u>	Analytical Batch	<u>Analyte</u>	Reason			
SW8260D							
1225201002	MW2-0822	VMS21948	n-Butylbenzene	RP			
1225201004	MW3-0822	VMS21948	4-Isopropyltoluene	SP			

Code Description

- O Original Chromatogram
- M Modified Chromatogram
- SS Skimmed surrogate
- BLG Closed baseline gap
- RP Reassign peak name
- PIR Pattern integration required
- IT Included tail
- SP Split peak
- RSP Removed split peak
- FPS Forced peak start/stop
- BLC Baseline correction
- PNF Peak not found by software

All DRO/RRO analysis are integrated per SOP.

Print Date: 09/29/2022 11:13:02AM



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 <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. 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, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) 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.
В	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
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.
Sample summaries which i All DRO/RRO analyses are	nclude a result for "Total Solids" have already been adjusted for moisture content.

Print Date: 09/29/2022 11:13:04AM

Note:



SW8260D

	:	Sample Summary	,	
<u>Client Sample ID</u> MW1-0822	<u>Lab Sample ID</u> 1225201001	<u>Collected</u> 08/26/2022	<u>Received</u> 08/30/2022	<u>Matrix</u> Water (Surface, Eff., Ground)
MW2-0822	1225201002	08/26/2022	08/30/2022	Water (Surface, Eff., Ground)
MW12-0822 MW3-0822	1225201003 1225201004	08/26/2022 08/26/2022	08/30/2022 08/30/2022	Water (Surface, Eff., Ground) Water (Surface, Eff., Ground)
Trip Blank	1225201005	08/26/2022	08/30/2022	Water (Surface, Eff., Ground)
Method	Method Des	scription		
8270D SIM LV (PAH)	8270 PAH S	SIM GC/MS LV		
AK102	DRO Low V	′olume (W)		
AK101	Gasoline Ra	ange Organics (W)	
SW8260D	Volatile Org	anic Compounds	(W)	

Volatile Organic Compounds (W) FULL

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Detectable Results Summary

Client Sample ID: MW1-0822			
Lab Sample ID: 1225201001	Parameter	Result	<u>Units</u>
Polynuclear Aromatics GC/MS	2-Methylnaphthalene	0.0183J	ug/L
	Naphthalene	0.0386J	ug/L
	Phenanthrene	0.0357J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.349J	mg/L
Volatile Fuels	Gasoline Range Organics	0.0846J	mg/L
Volatile GC/MS	Benzene	15.3	ug/L
Client Sample ID: MW2-0822			
Lab Sample ID: 1225201002	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.474	ug/L
-	2-Methylnaphthalene	0.203	ug/L
	Acenaphthene	0.0475J	ug/L
	Fluorene	0.0313J	ug/L
	Naphthalene	3.49	ug/L
	Phenanthrene	0.0580J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	1.87	mg/L
Volatile Fuels	Gasoline Range Organics	1.78	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	28.6	ug/L
	1,3,5-Trimethylbenzene	3.38	ug/L
	Benzene	26.2	ug/L
	Chloromethane	1.04	ug/L
	Dichlorodifluoromethane	0.658J	ug/L
	Ethylbenzene	12.1	ug/L
	Isopropylbenzene (Cumene)	7.92	ug/L
	Naphthalene	1.40	ug/L
	n-Butylbenzene	0.836J	ug/L
	n-Propylbenzene	9.77	ug/L
	o-Xylene	37.6	ug/L
	P & M -Xylene	78.2	ug/L
	sec-Butylbenzene	1.92	ug/L
	Toluene	3.18	ug/L
	Xylenes (total)	116	ug/L

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Detectable Results Summary

ab Sample ID: 1225201003.	Parameter	Result	<u>Units</u>
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.447	ug/L
-	2-Methylnaphthalene	0.184	ug/L
	Acenaphthene	0.0376J	ug/L
	Fluorene	0.0243J	ug/L
	Naphthalene	3.20	ug/L
/olatile Fuels	Gasoline Range Organics	1.75	mg/L
/olatile GC/MS	1,2,4-Trimethylbenzene	21.4	ug/L
	1,3,5-Trimethylbenzene	2.81	ug/L
	Benzene	30.2	ug/L
	Dichlorodifluoromethane	0.538J	ug/L
	Ethylbenzene	10.2	ug/L
	Isopropylbenzene (Cumene)	6.18	ug/L
	Naphthalene	4.30	ug/L
	n-Butylbenzene	0.662J	ug/L
	n-Propylbenzene	6.84	ug/L
	o-Xylene	30.1	ug/L
	P & M -Xylene	66.3	ug/L
	sec-Butylbenzene	1.36	ug/L
	Toluene	3.30	ug/L
	Xylenes (total)	96.4	ug/L
Client Sample ID: MW3-0822			
ab Sample ID: 1225201004	<u>Parameter</u>	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	1.79	ug/L
orginuclear Aromatics GC/MS	2-Methylnaphthalene	1.05	ug/L
	Acenaphthene	0.0562	ug/L
	Fluorene	0.140	ug/L
	Naphthalene	2.08	ug/L
	Phenanthrene	0.0596J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	2.57	mg/L
/olatile Fuels	Gasoline Range Organics	0.0459J	mg/L
/olatile GC/MS	1,2,4-Trimethylbenzene	4.64	ug/L
	1,3,5-Trimethylbenzene	3.70	ug/L
	4-Isopropyltoluene	0.334J	ug/L
	Ethylbenzene	0.659J	ug/L
	Isopropylbenzene (Cumene)	0.438J	ug/L
	Naphthalene	4.20	ug/L
	n-Propylbenzene	0.516J	ug/L
	o-Xylene	2.04	ug/L
	P & M -Xylene	4.05	ug/L
	Xylenes (total)	6.09	ug/L

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Results of MW1-0822

Client Sample ID: **MW1-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201001 Lab Project ID: 1225201 Collection Date: 08/26/22 15:30 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Polynuclear Aromatics GC/MS

						Allowable
<u>Parameter</u>	<u>Result Qual</u>	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Limits Date Analyzed
1-Methylnaphthalene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
2-Methylnaphthalene	0.0183 J	0.0521	0.0156	ug/L	1	09/02/22 21:08
Acenaphthene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Acenaphthylene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Anthracene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Benzo(a)Anthracene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Benzo[a]pyrene	0.0104 U	0.0208	0.00646	ug/L	1	09/02/22 21:08
Benzo[b]Fluoranthene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Benzo[g,h,i]perylene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Benzo[k]fluoranthene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Chrysene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Dibenzo[a,h]anthracene	0.0104 U	0.0208	0.00646	ug/L	1	09/02/22 21:08
Fluoranthene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Fluorene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Indeno[1,2,3-c,d] pyrene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Naphthalene	0.0386 J	0.104	0.0323	ug/L	1	09/02/22 21:08
Phenanthrene	0.0357 J	0.104	0.0323	ug/L	1	09/02/22 21:08
Pyrene	0.0261 U	0.0521	0.0156	ug/L	1	09/02/22 21:08
Surrogates						
2-Methylnaphthalene-d10 (surr)	64.6	42-86		%	1	09/02/22 21:08
Fluoranthene-d10 (surr)	68.7	50-97		%	1	09/02/22 21:08

Batch Information

Analytical Batch: XMS13328 Analytical Method: 8270D SIM LV (PAH) Analyst: NGG Analytical Date/Time: 09/02/22 21:08 Container ID: 1225201001-I Prep Batch: XXX46913 Prep Method: SW3535A Prep Date/Time: 09/01/22 10:04 Prep Initial Wt./Vol.: 240 mL Prep Extract Vol: 1 mL

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Results of MW1-0822							
Client Sample ID: MW1-0822		С	I.				
Client Project ID: Kobuk Feed and F	uel	Received Date: 08/30/22 09:55					
Lab Sample ID: 1225201001		Matrix: Water (Surface, Eff., Grou				und)	
Lab Project ID: 1225201			olids (%):				
		L	ocation:				
Results by Semivolatile Organic Fue	ls						
						Allowable	
Devenueter	DesultQual			Linite			Data Analı
Parameter Discol Pango Organico	Result Qual	LOQ/CL	<u>DL</u> 0.106	<u>Units</u>	DF 1	<u>Limits</u>	Date Analy
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.349 J	<u>LOQ/CL</u> 0.588	<u>DL</u> 0.196	<u>Units</u> mg/L	<u>DF</u> 1		<u>Date Analy</u> 09/09/22 2
Diesel Range Organics							09/09/22 2
Diesel Range Organics Surrogates 5a Androstane (surr)	0.349 J	0.588		mg/L	1		09/09/22 2
Diesel Range Organics Surrogates	0.349 J	0.588		mg/L	1		09/09/22 2
Diesel Range Organics Surrogates 5a Androstane (surr) Batch Information Analytical Batch: XFC16336	0.349 J	0.588	0.196 Prep Batch:	mg/L % XXX46949	1		09/09/22 2
Diesel Range Organics Surrogates 5a Androstane (surr) Batch Information Analytical Batch: XFC16336 Analytical Method: AK102	0.349 J	0.588	0.196 Prep Batch: Prep Method	mg/L % XXX46949 SW35200	1		09/09/22 2
Diesel Range Organics Surrogates 5a Androstane (surr) Batch Information Analytical Batch: XFC16336	0.349 J	0.588	0.196 Prep Batch:	mg/L % XXX46949 I: SW35200 me: 09/08/2	1 1 22 16:13		

Print Date: 09/29/2022 11:13:07AM

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Results of MW1-0822							
Client Sample ID: MW1-0822 Client Project ID: Kobuk Feed and Fu Lab Sample ID: 1225201001 Lab Project ID: 1225201	Collection Date: 08/26/22 15:30 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Volatile Fuels							
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0846 J	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0450	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyze</u> 09/07/22 04:2
urrogates							
4-Bromofluorobenzene (surr)	87.7	50-150		%	1		09/07/22 04:2
Batch Information							
Analytical Batch: VFC16244 Analytical Method: AK101 Analyst: PHK Analytical Date/Time: 09/07/22 04:21 Container ID: 1225201001-A			Prep Batch: ` Prep Method: Prep Date/Tir Prep Initial W Prep Extract `	: SW5030B me: 09/06/2 't./Vol.: 5 m	22 06:00		

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Results of MW1-0822

Client Sample ID: **MW1-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201001 Lab Project ID: 1225201

Collection Date: 08/26/22 15:30 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

						Allowable	
<u>Parameter</u>	<u>Result Qual</u>	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Benzene	15.3	0.400	0.120	ug/L	1		09/08/22 22:56
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 22:56
o-Xylene	0.500 U	1.00	0.310	ug/L	1		09/08/22 22:56
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		09/08/22 22:56
Toluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 22:56
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		09/08/22 22:56
Surrogates							
1,2-Dichloroethane-D4 (surr)	95.4	81-118		%	1		09/08/22 22:56
4-Bromofluorobenzene (surr)	104	85-114		%	1		09/08/22 22:56
Toluene-d8 (surr)	99.4	89-112		%	1		09/08/22 22:56

Batch Information

Analytical Batch: VMS21948 Analytical Method: SW8260D Analyst: NRB Analytical Date/Time: 09/08/22 22:56 Container ID: 1225201001-B Prep Batch: VXX39140 Prep Method: SW5030B Prep Date/Time: 09/08/22 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of MW2-0822

Client Sample ID: **MW2-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201002 Lab Project ID: 1225201 Collection Date: 08/26/22 17:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Polynuclear Aromatics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF		Date Analyzed
1-Methylnaphthalene	0.474	0.0510	0.0153	ug/L	1		09/02/22 21:28
2-Methylnaphthalene	0.203	0.0510	0.0153	ug/L	1		09/02/22 21:28
Acenaphthene	0.0475 J	0.0510	0.0153	ug/L	1		09/02/22 21:28
Acenaphthylene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Anthracene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Benzo(a)Anthracene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Benzo[a]pyrene	0.0102 U	0.0204	0.00633	ug/L	1		09/02/22 21:28
Benzo[b]Fluoranthene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Benzo[g,h,i]perylene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Benzo[k]fluoranthene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Chrysene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Dibenzo[a,h]anthracene	0.0102 U	0.0204	0.00633	ug/L	1		09/02/22 21:28
Fluoranthene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Fluorene	0.0313 J	0.0510	0.0153	ug/L	1		09/02/22 21:28
Indeno[1,2,3-c,d] pyrene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Naphthalene	3.49	0.102	0.0316	ug/L	1		09/02/22 21:28
Phenanthrene	0.0580 J	0.102	0.0316	ug/L	1		09/02/22 21:28
Pyrene	0.0255 U	0.0510	0.0153	ug/L	1		09/02/22 21:28
Surrogates							
2-Methylnaphthalene-d10 (surr)	63	42-86		%	1		09/02/22 21:28
Fluoranthene-d10 (surr)	61.3	50-97		%	1		09/02/22 21:28

Batch Information

Analytical Batch: XMS13328 Analytical Method: 8270D SIM LV (PAH) Analyst: NGG Analytical Date/Time: 09/02/22 21:28 Container ID: 1225201002-I Prep Batch: XXX46913 Prep Method: SW3535A Prep Date/Time: 09/01/22 10:04 Prep Initial Wt./Vol.: 245 mL Prep Extract Vol: 1 mL

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Results of MW2-0822 Client Sample ID: MW2-0822 Client Project ID: Kobuk Feed and Fuel Lab Sample ID: 1225201002 Lab Project ID: 1225201							
		R M S	ollection Date: 08/26/22 17:00 eceived Date: 08/30/22 09:55 atrix: Water (Surface, Eff., Grou olids (%): cation:			und)	
Results by Semivolatile Organic Fuels	5		<u> </u>				
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 1.87	<u>LOQ/CL</u> 0.612	<u>DL</u> 0.204	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzec</u> 09/09/22 20:50
Surrogates							
5a Androstane (surr)	78.5	50-150		%	1		09/09/22 20:5
Batch Information							
Analytical Batch: XFC16336 Analytical Method: AK102 Analyst: HMW Analytical Date/Time: 09/09/22 20:50			Prep Batch: Prep Method Prep Date/Ti Prep Initial V	: SW3520C me: 09/08/2	22 16:13		

Print Date: 09/29/2022 11:13:07AM

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Results of MW2-0822								
Client Sample ID: MW2-0822 Client Project ID: Kobuk Feed and Fuel Lab Sample ID: 1225201002 Lab Project ID: 1225201			Collection Date: 08/26/22 17:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Volatile Fuels				_				
<u>Parameter</u>	<u>Result</u> C	lual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyze
Gasoline Range Organics	1.78		0.100	0.0450	mg/L	1		09/07/22 04:3
urrogates								
4-Bromofluorobenzene (surr)	184	*	50-150		%	1		09/07/22 04:3
Batch Information								
Analytical Batch: VFC16244			F	Prep Batch:	VXX39127			
Analytical Method: AK101			Prep Method: SW5030B					
Analyst: PHK Analytical Date/Time: 09/07/22 0/:39			Prep Date/Time: 09/06/22 06:00 Prep Initial Wt./Vol.: 5 mL					
Analytical Date/Time: 09/07/22 04:39 Container ID: 1225201002-C				Prep Extract				

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Results of MW2-0822

Client Sample ID: **MW2-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201002 Lab Project ID: 1225201 Collection Date: 08/26/22 17:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 20:11
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 20:11
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		09/08/22 20:11
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,2,4-Trimethylbenzene	28.6	1.00	0.310	ug/L	1		09/08/22 20:11
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		09/08/22 20:11
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		09/08/22 20:11
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,2-Dichloroethane	0.250 U	0.500	0.200	ug/L	1		09/08/22 20:11
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,3,5-Trimethylbenzene	3.38	1.00	0.310	ug/L	1		09/08/22 20:11
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		09/08/22 20:11
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		09/08/22 20:11
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		09/08/22 20:11
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		09/08/22 20:11
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		09/08/22 20:11
Benzene	26.2	0.400	0.120	ug/L	1		09/08/22 20:11
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 20:11
Bromoform	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Bromomethane	3.00 U	6.00	3.00	ug/L	1		09/08/22 20:11
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		09/08/22 20:11
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		09/08/22 20:11
Chloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11

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Results of MW2-0822

Client Sample ID: **MW2-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201002 Lab Project ID: 1225201

Collection Date: 08/26/22 17:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

						Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Limits	Date Analyzed
Chloroform	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Chloromethane	1.04	1.00	0.310	ug/L	1		09/08/22 20:11
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		09/08/22 20:11
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 20:11
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Dichlorodifluoromethane	0.658 J	1.00	0.310	ug/L	1		09/08/22 20:11
Ethylbenzene	12.1	1.00	0.310	ug/L	1		09/08/22 20:11
Freon-113	5.00 U	10.0	3.10	ug/L	1		09/08/22 20:11
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Isopropylbenzene (Cumene)	7.92	1.00	0.310	ug/L	1		09/08/22 20:11
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		09/08/22 20:11
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		09/08/22 20:11
Naphthalene	1.40	1.00	0.310	ug/L	1		09/09/22 19:25
n-Butylbenzene	0.836 J	1.00	0.310	ug/L	1		09/08/22 20:11
n-Propylbenzene	9.77	1.00	0.310	ug/L	1		09/08/22 20:11
o-Xylene	37.6	1.00	0.310	ug/L	1		09/08/22 20:11
P & M -Xylene	78.2	2.00	0.620	ug/L	1		09/08/22 20:11
sec-Butylbenzene	1.92	1.00	0.310	ug/L	1		09/08/22 20:11
Styrene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Toluene	3.18	1.00	0.310	ug/L	1		09/08/22 20:11
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 20:11
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		09/08/22 20:11
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		09/08/22 20:11
Xylenes (total)	116	3.00	1.00	ug/L	1		09/08/22 20:11
Surrogates							
1,2-Dichloroethane-D4 (surr)	98.9	81-118		%	1		09/08/22 20:11
4-Bromofluorobenzene (surr)	105	85-114		%	1		09/08/22 20:11
Toluene-d8 (surr)	97.5	89-112		%	1		09/08/22 20:11

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Results of MW2-0822

Client Sample ID: **MW2-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201002 Lab Project ID: 1225201

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21951 Analytical Method: SW8260D Analyst: NRB Analytical Date/Time: 09/09/22 19:25 Container ID: 1225201002-D

Analytical Batch: VMS21948 Analytical Method: SW8260D Analyst: NRB Analytical Date/Time: 09/08/22 20:11 Container ID: 1225201002-F Collection Date: 08/26/22 17:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Prep Batch: VXX39146 Prep Method: SW5030B Prep Date/Time: 09/09/22 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

Prep Batch: VXX39140 Prep Method: SW5030B Prep Date/Time: 09/08/22 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of MW12-0822

Client Sample ID: **MW12-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201003 Lab Project ID: 1225201 Collection Date: 08/26/22 17:15 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Polynuclear Aromatics GC/MS

					Allowable	
Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Limits	Date Analyzed
0.447	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.184	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0376 J	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0104 U	0.0208	0.00646	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0104 U	0.0208	0.00646	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0243 J	0.0521	0.0156	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
3.20	0.104	0.0323	ug/L	1		09/02/22 21:49
0.0520 U	0.104	0.0323	ug/L	1		09/02/22 21:49
0.0261 U	0.0521	0.0156	ug/L	1		09/02/22 21:49
58.8	42-86		%	1		09/02/22 21:49
60	50-97		%	1		09/02/22 21:49
	0.447 0.184 0.0376 J 0.0261 U 0.0261 U 3.20 0.0520 U 0.0261 U 58.8	0.447 0.0521 0.184 0.0521 0.0376 J 0.0521 0.0261 U 0.0521 3.20 0.104 0.0520 U 0.104 0.0261 U 0.0521 58.8 42-86	0.447 0.0521 0.0156 0.184 0.0521 0.0156 0.0376 J 0.0521 0.0156 0.0261 U 0.0521 0.0156	0.447 0.0521 0.0156 ug/L 0.184 0.0521 0.0156 ug/L 0.0376 J 0.0521 0.0156 ug/L 0.0261 U 0.0521 0.0156	0.447 0.0521 0.0156 ug/L 1 0.184 0.0521 0.0156 ug/L 1 0.0376 J 0.0521 0.0156 ug/L 1 0.0261 U 0.0521 0.0156 ug/L 1 3.20 0.104	Result Qual LOQ/CL DL Units DE Limits 0.447 0.0521 0.0156 ug/L 1 0.184 0.0521 0.0156 ug/L 1 0.0376 J 0.0521 0.0156 ug/L 1 0.0261 U 0.0521 0.0156 ug/L 1

Batch Information

Analytical Batch: XMS13328 Analytical Method: 8270D SIM LV (PAH) Analyst: NGG Analytical Date/Time: 09/02/22 21:49 Container ID: 1225201003-I Prep Batch: XXX46913 Prep Method: SW3535A Prep Date/Time: 09/01/22 10:04 Prep Initial Wt./Vol.: 240 mL Prep Extract Vol: 1 mL

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Results of MW12-0822							
Client Sample ID: MW12-0822		С	ollection Da	te: 08/26/	22 17:15		
Client Project ID: Kobuk Feed and Fu	el		eceived Dat				
Lab Sample ID: 1225201003			latrix: Water	(Surface,	Eff., Grou	und)	
Lab Project ID: 1225201			olids (%):				
		L	ocation:				
Results by Volatile Fuels							
						Allowable	
Parameter	<u>Result Qual</u>	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyze
Gasoline Range Organics	1.75	0.100	0.0450	mg/L	1		09/07/22 04:
Surrogates							
4-Bromofluorobenzene (surr)	143	50-150		%	1		09/07/22 04:
Batch Information							
			Prep Batch: \	0/0/00/07			
Analytical Batch: VFC16244 Analytical Method: AK101							
5			Prep Method: Prep Date/Tir				
		Prep Date/Time: 09/06/22 06:00 Prep Initial Wt./Vol.: 5 mL					
Analyst: PHK Analytical Date/Time: 09/07/22 04:58			Prep Initial W	t./Vol.: 5 m	L		

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Results of MW12-0822

Client Sample ID: **MW12-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201003 Lab Project ID: 1225201 Collection Date: 08/26/22 17:15 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Allowable</u> <u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:25
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:25
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		09/08/22 23:25
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,2,4-Trimethylbenzene	21.4	1.00	0.310	ug/L	1		09/08/22 23:25
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:25
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		09/08/22 23:25
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,2-Dichloroethane	0.250 U	0.500	0.200	ug/L	1		09/08/22 23:25
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,3,5-Trimethylbenzene	2.81	1.00	0.310	ug/L	1		09/08/22 23:25
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:25
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:25
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:25
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:25
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:25
Benzene	30.2	0.400	0.120	ug/L	1		09/08/22 23:25
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:25
Bromoform	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Bromomethane	3.00 U	6.00	3.00	ug/L	1		09/08/22 23:25
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:25
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:25
Chloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25

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Results of MW12-0822

Client Sample ID: **MW12-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201003 Lab Project ID: 1225201 Collection Date: 08/26/22 17:15 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

						Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Chloroform	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Chloromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:25
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:25
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Dichlorodifluoromethane	0.538 J	1.00	0.310	ug/L	1		09/08/22 23:25
Ethylbenzene	10.2	1.00	0.310	ug/L	1		09/08/22 23:25
Freon-113	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:25
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Isopropylbenzene (Cumene)	6.18	1.00	0.310	ug/L	1		09/08/22 23:25
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:25
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:25
Naphthalene	4.30	1.00	0.310	ug/L	1		09/08/22 23:25
n-Butylbenzene	0.662 J	1.00	0.310	ug/L	1		09/08/22 23:25
n-Propylbenzene	6.84	1.00	0.310	ug/L	1		09/08/22 23:25
o-Xylene	30.1	1.00	0.310	ug/L	1		09/08/22 23:25
P & M -Xylene	66.3	2.00	0.620	ug/L	1		09/08/22 23:25
sec-Butylbenzene	1.36	1.00	0.310	ug/L	1		09/08/22 23:25
Styrene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Toluene	3.30	1.00	0.310	ug/L	1		09/08/22 23:25
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:25
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:25
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		09/08/22 23:25
Xylenes (total)	96.4	3.00	1.00	ug/L	1		09/08/22 23:25
Surrogates							
1,2-Dichloroethane-D4 (surr)	96.6	81-118		%	1		09/08/22 23:25
4-Bromofluorobenzene (surr)	100	85-114		%	1		09/08/22 23:25
Toluene-d8 (surr)	99	89-112		%	1		09/08/22 23:25

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Results of MW12-0822

Client Sample ID: **MW12-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201003 Lab Project ID: 1225201

Collection Date: 08/26/22 17:15 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21948 Analytical Method: SW8260D Analyst: NRB Analytical Date/Time: 09/08/22 23:25 Container ID: 1225201003-E Prep Batch: VXX39140 Prep Method: SW5030B Prep Date/Time: 09/08/22 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

Print Date: 09/29/2022 11:13:07AM

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Results of MW3-0822

Client Sample ID: **MW3-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201004 Lab Project ID: 1225201 Collection Date: 08/26/22 18:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Polynuclear Aromatics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Limits	Date Analyzed
1-Methylnaphthalene	1.79	0.0556	0.0167	ug/L	1		09/02/22 22:10
2-Methylnaphthalene	1.05	0.0556	0.0167	ug/L	1		09/02/22 22:10
Acenaphthene	0.0562	0.0556	0.0167	ug/L	1		09/02/22 22:10
Acenaphthylene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Anthracene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Benzo(a)Anthracene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Benzo[a]pyrene	0.0111 U	0.0222	0.00689	ug/L	1		09/02/22 22:10
Benzo[b]Fluoranthene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Benzo[g,h,i]perylene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Benzo[k]fluoranthene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Chrysene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Dibenzo[a,h]anthracene	0.0111 U	0.0222	0.00689	ug/L	1		09/02/22 22:10
Fluoranthene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Fluorene	0.140	0.0556	0.0167	ug/L	1		09/02/22 22:10
Indeno[1,2,3-c,d] pyrene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Naphthalene	2.08	0.111	0.0344	ug/L	1		09/02/22 22:10
Phenanthrene	0.0596 J	0.111	0.0344	ug/L	1		09/02/22 22:10
Pyrene	0.0278 U	0.0556	0.0167	ug/L	1		09/02/22 22:10
Surrogates							
2-Methylnaphthalene-d10 (surr)	59	42-86		%	1		09/02/22 22:10
Fluoranthene-d10 (surr)	64.4	50-97		%	1		09/02/22 22:10

Batch Information

Analytical Batch: XMS13328 Analytical Method: 8270D SIM LV (PAH) Analyst: NGG Analytical Date/Time: 09/02/22 22:10 Container ID: 1225201004-I Prep Batch: XXX46913 Prep Method: SW3535A Prep Date/Time: 09/01/22 10:04 Prep Initial Wt./Vol.: 225 mL Prep Extract Vol: 1 mL

Print Date: 09/29/2022 11:13:07AM

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Results of MW3-0822							
Client Sample ID: MW3-0822 Client Project ID: Kobuk Feed and Fu Lab Sample ID: 1225201004 Lab Project ID: 1225201	el	F	Collection Da Received Da Aatrix: Wate Solids (%): .ocation:	te: 08/30/2	22 09:55		
Results by Semivolatile Organic Fuels	S						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 2.57	<u>LOQ/CL</u> 0.667	<u>DL</u> 0.222	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/09/22 21:00
urrogates							
5a Androstane (surr)	64.7	50-150		%	1		09/09/22 21:0
Batch Information							
Analytical Batch: XFC16336 Analytical Method: AK102 Analyst: HMW			Prep Batch: Prep Method Prep Date/Ti	: SW3520C	22 16:13		

Print Date: 09/29/2022 11:13:07AM

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Results of MW3-0822	b							
Client Sample ID: MW3-0822 Client Project ID: Kobuk Feed and Fu Lab Sample ID: 1225201004 Lab Project ID: 1225201	el	Collection Date: 08/26/22 18:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Volatile Fuels			_					
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> Limits	Date Analyze	
Gasoline Range Organics	0.0459 J	0.100	0.0450	mg/L	1		09/07/22 05:1	
urrogates								
4-Bromofluorobenzene (surr)	82.6	50-150		%	1		09/07/22 05:1	
Batch Information								
Analytical Batch: VFC16244 Analytical Method: AK101 Analyst: PHK			Prep Batch: N Prep Method: Prep Date/Tir	SW5030B				
Analyst: PHK Analytical Date/Time: 09/07/22 05:16			Prep Date/Th Prep Initial W					
Container ID: 1225201004-D			، ۲ep Extract					

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Results of MW3-0822

Client Sample ID: MW3-0822 Client Project ID: Kobuk Feed and Fuel Lab Sample ID: 1225201004 Lab Project ID: 1225201

Collection Date: 08/26/22 18:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Allowable</u> <u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:10
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:10
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		09/08/22 23:10
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,2,4-Trimethylbenzene	4.64	1.00	0.310	ug/L	1		09/08/22 23:10
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:10
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		09/08/22 23:10
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,2-Dichloroethane	0.250 U	0.500	0.200	ug/L	1		09/08/22 23:10
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,3,5-Trimethylbenzene	3.70	1.00	0.310	ug/L	1		09/08/22 23:10
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:10
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:10
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:10
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:10
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
4-Isopropyltoluene	0.334 J	1.00	0.310	ug/L	1		09/08/22 23:10
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:10
Benzene	0.200 U	0.400	0.120	ug/L	1		09/08/22 23:10
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:10
Bromoform	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Bromomethane	3.00 U	6.00	3.00	ug/L	1		09/08/22 23:10
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:10
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:10
Chloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10

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Results of MW3-0822

Client Sample ID: **MW3-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201004 Lab Project ID: 1225201

Collection Date: 08/26/22 18:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Re-						Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Limits	Date Analyzed
Chloroform	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Chloromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:10
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 23:10
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Ethylbenzene	0.659 J	1.00	0.310	ug/L	1		09/08/22 23:10
Freon-113	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:10
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Isopropylbenzene (Cumene)	0.438 J	1.00	0.310	ug/L	1		09/08/22 23:10
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:10
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:10
Naphthalene	4.20	1.00	0.310	ug/L	1		09/08/22 23:10
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
n-Propylbenzene	0.516 J	1.00	0.310	ug/L	1		09/08/22 23:10
o-Xylene	2.04	1.00	0.310	ug/L	1		09/08/22 23:10
P & M -Xylene	4.05	2.00	0.620	ug/L	1		09/08/22 23:10
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Styrene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Toluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 23:10
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		09/08/22 23:10
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		09/08/22 23:10
Xylenes (total)	6.09	3.00	1.00	ug/L	1		09/08/22 23:10
Surrogates							
1,2-Dichloroethane-D4 (surr)	110	81-118		%	1		09/08/22 23:10
4-Bromofluorobenzene (surr)	99.4	85-114		%	1		09/08/22 23:10
Toluene-d8 (surr)	98.3	89-112		%	1		09/08/22 23:10

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Results of MW3-0822

Client Sample ID: **MW3-0822** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201004 Lab Project ID: 1225201

Collection Date: 08/26/22 18:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21948 Analytical Method: SW8260D Analyst: NRB Analytical Date/Time: 09/08/22 23:10 Container ID: 1225201004-F Prep Batch: VXX39140 Prep Method: SW5030B Prep Date/Time: 09/08/22 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of Trip Blank							
Client Sample ID: Trip Blank Client Project ID: Kobuk Feed and Fu Lab Sample ID: 1225201005 Lab Project ID: 1225201	lel	R M S	ollection Da eceived Da latrix: Water olids (%): ocation:	te: 08/30/	22 09:55	und)	
Results by Volatile Fuels			_				
Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0450	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyze</u> 09/06/22 22:5
urrogates							
4-Bromofluorobenzene (surr)	76	50-150		%	1		09/06/22 22:5
Batch Information							
Analytical Batch: VFC16244 Analytical Method: AK101 Analyst: PHK Analytical Date/Time: 09/06/22 22:53 Container ID: 1225201005-B		I I	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	: SW5030E me: 09/06/2 ′t./Vol.: 5 m	22 06:00		

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Results of Trip Blank

Client Sample ID: **Trip Blank** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201005 Lab Project ID: 1225201 Collection Date: 08/26/22 08:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 18:27
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 18:27
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		09/08/22 18:27
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		09/08/22 18:27
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		09/08/22 18:27
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,2-Dichloroethane	0.250 U	0.500	0.200	ug/L	1		09/08/22 18:27
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		09/08/22 18:27
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		09/08/22 18:27
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		09/08/22 18:27
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		09/08/22 18:27
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		09/08/22 18:27
Benzene	0.200 U	0.400	0.120	ug/L	1		09/08/22 18:27
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 18:27
Bromoform	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Bromomethane	3.00 U	6.00	3.00	ug/L	1		09/08/22 18:27
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		09/08/22 18:27
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		09/08/22 18:27
Chloroethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27

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Results of Trip Blank

Client Sample ID: **Trip Blank** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201005 Lab Project ID: 1225201 Collection Date: 08/26/22 08:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

						Allowable	
<u>Parameter</u>	<u>Result Qual</u>	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Chloroform	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Chloromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		09/08/22 18:27
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		09/08/22 18:27
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Freon-113	5.00 U	10.0	3.10	ug/L	1		09/08/22 18:27
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		09/08/22 18:27
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		09/08/22 18:27
Naphthalene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
o-Xylene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		09/08/22 18:27
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Styrene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Toluene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		09/08/22 18:27
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		09/08/22 18:27
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		09/08/22 18:27
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		09/08/22 18:27
Surrogates							
1,2-Dichloroethane-D4 (surr)	105	81-118		%	1		09/08/22 18:27
4-Bromofluorobenzene (surr)	102	85-114		%	1		09/08/22 18:27
Toluene-d8 (surr)	98.6	89-112		%	1		09/08/22 18:27

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Results of Trip Blank

Client Sample ID: **Trip Blank** Client Project ID: **Kobuk Feed and Fuel** Lab Sample ID: 1225201005 Lab Project ID: 1225201

Collection Date: 08/26/22 08:00 Received Date: 08/30/22 09:55 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS21948 Analytical Method: SW8260D Analyst: NRB Analytical Date/Time: 09/08/22 18:27 Container ID: 1225201005-A Prep Batch: VXX39140 Prep Method: SW5030B Prep Date/Time: 09/08/22 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

Print Date: 09/29/2022 11:13:07AM

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Method Blank]			
Blank ID: MB for HBN 18428(Blank Lab ID: 1683988	02 [VXX/39126]	Matrix	: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1225201005					
Results by AK101)			
Parameter Gasoline Range Organics	<u>Results</u> 0.0500U	LOQ/CL 0.100	<u>DL</u> 0.0450	<u>Units</u> mg/L	
Surrogates 4-Bromofluorobenzene (surr)	79.2	50-150		%	
Batch Information					
Analytical Batch: VFC16244 Analytical Method: AK101 Instrument: Agilent 7890 PID Analyst: PHK		Prep Met Prep Dat Prep Initi	ch: VXX39126 thod: SW5030E e/Time: 9/6/202 al Wt./Vol.: 5 m	22 6:00:00AM	
Analyst: PHK Analytical Date/Time: 9/6/202	22 11:50:00AM		al Wt./Vol.: 5 m ract Vol: 5 mL		



Blank Spike ID: LCS for HBN 1225201 [VXX39126] Blank Spike Lab ID: 1683991 Date Analyzed: 09/06/2022 12:45 Spike Duplicate ID: LCSD for HBN 1225201 [VXX39126] Spike Duplicate Lab ID: 1683992 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225201005

Results by AK101									
		Blank Spike	e (mg/L)	S	pike Duplic	cate (mg/L)			
Parameter	Spike	Result	<u>Rec (%)</u>	Spike	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	1.05	105	1.00	1.08	108	(60-120)	2.80	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		93	0.0500		108	(50-150)	14.40	
Batch Information									
Analytical Batch: VFC16244				Prep	Batch: V	XX39126			
Analytical Method: AK101				Prep	Method:	SW5030B			
Instrument: Agilent 7890 PID	/FID					e: 09/06/202			
Analyst: PHK							mg/L Extra		
				Dup	e Init Wt./V	/ol.: 0.0500	mg/L Extrac	t Vol: 5 mL	

Print Date: 09/29/2022 11:13:11AM

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]			
03 [VXX/39127]	Matrix	: Water (Surfa	ce, Eff., Ground)	
5201003, 1225201004				
<u>Results</u> 0.0500U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0450	<u>Units</u> mg/L	
75.4	50-150		%	
D/FID 022 1:38:00AM	Prep Me Prep Da Prep Init	thod: SW5030E te/Time: 9/6/202	22 6:00:00AM	
	5201003, 1225201004 <u>Results</u> 0.0500U 75.4	5201003, 1225201004 <u>Results</u> 0.0500U 75.4 Prep Ba Prep Me Prep Da	End of the second se	End of the second se

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Blank Spike ID: LCS for HBN 1225201 [VXX39127] Blank Spike Lab ID: 1683994 Date Analyzed: 09/07/2022 01:19 Spike Duplicate ID: LCSD for HBN 1225201 [VXX39127] Spike Duplicate Lab ID: 1683995 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225201001, 1225201002, 1225201003, 1225201004

Results by AK101									
	I	Blank Spike	e (mg/L)	S	pike Duplic	cate (mg/L)			
Parameter	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	0.975	98	1.00	0.966	97	(60-120)	1.00	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		99	0.0500		88	(50-150)	11.50	
Batch Information									
Analytical Batch: VFC16244				Prep	Batch: V	XX39127			
Analytical Method: AK101					Method:				
Instrument: Agilent 7890 PID/	FID					e: 09/06/202			
Analyst: PHK							mg/L Extrac		
				Dup	e init VVt./V	01.: 0.0500	mg/L Extrac	t voi: 5 mL	

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Method Blank

Blank ID: MB for HBN 1842909 [VXX/39140] Blank Lab ID: 1684470 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1225201001, 1225201002, 1225201003, 1225201004, 1225201005

Results by SW8260D				
Parameter	Results	LOQ/CL	DL	Units
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.200	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	3.00U	6.00	3.00	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.310	ug/L

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Method Blank

Blank ID: MB for HBN 1842909 [VXX/39140] Blank Lab ID: 1684470 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1225201001, 1225201002, 1225201003, 1225201004, 1225201005

-	Results by SW8260D				
	<u>Parameter</u>	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>
	Chloromethane	0.500U	1.00	0.310	ug/L
	cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
	cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
	Dibromochloromethane	0.250U	0.500	0.150	ug/L
	Dibromomethane	0.500U	1.00	0.310	ug/L
	Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
	Ethylbenzene	0.500U	1.00	0.310	ug/L
	Freon-113	5.00U	10.0	3.10	ug/L
	Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
	Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
	Methylene chloride	5.00U	10.0	3.10	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
	n-Propylbenzene	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
	Styrene	0.500U	1.00	0.310	ug/L
	tert-Butylbenzene	0.500U	1.00	0.310	ug/L
	Tetrachloroethene	0.500U	1.00	0.310	ug/L
	Toluene	0.500U	1.00	0.310	ug/L
	trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
	trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
	Trichloroethene	0.500U	1.00	0.310	ug/L
	Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
	Vinyl acetate	5.00U	10.0	3.10	ug/L
	Vinyl chloride	0.0750U	0.150	0.0500	ug/L
	Xylenes (total)	1.50U	3.00	1.00	ug/L
	Surrogates				
	1,2-Dichloroethane-D4 (surr)	108	81-118		%
	4-Bromofluorobenzene (surr)	101	85-114		%
	Toluene-d8 (surr)	99.3	89-112		%

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Method Blank					
Blank ID: MB for HB Blank Lab ID: 16844	N 1842909 [VXX/39140] 70	Matr	ix: Water (Su	rface, Eff., Ground)	
QC for Samples: 1225201001, 1225201	002, 1225201003, 1225201004, 12	225201005			
	<u>ן</u>	1			
Results by SW8260E		_			
Results by SW8260L Parameter	Results	LOQ/CL	<u>DL</u>	<u>Units</u>	
<u>Parameter</u>		LOQ/CL	DL	<u>Units</u>	
Parameter Batch Information Analytical Batch: V	<u>Results</u> MS21948	Prep Ba	atch: VXX391	40	
Parameter Batch Information Analytical Batch: V Analytical Method:	Results MS21948 SW8260D	Prep B Prep M	atch: VXX391 ethod: SW503	40 30B	
Parameter Batch Information Analytical Batch: V	Results MS21948 SW8260D	Prep B. Prep M Prep D	atch: VXX391 ethod: SW503	40 30B 2022 6:00:00AM	

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Blank Spike ID: LCS for HBN 1225201 [VXX39140] Blank Spike Lab ID: 1684471 Date Analyzed: 09/08/2022 14:58 Spike Duplicate ID: LCSD for HBN 1225201 [VXX39140] Spike Duplicate Lab ID: 1684472 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225201001, 1225201002, 1225201003, 1225201004, 1225201005

Results by SW8260D

		Blank Spike	e (ug/L)	:	Spike Dupli	cate (ug/L)			
<u>Parameter</u>	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
1,1,1,2-Tetrachloroethane	30	29.2	97	30	28.6	95	(78-124)	2.00	(< 20)
1,1,1-Trichloroethane	30	31.5	105	30	31.1	104	(74-131)	1.20	(< 20)
1,1,2,2-Tetrachloroethane	30	28.3	94	30	28.3	94	(71-121)	0.03	(< 20)
1,1,2-Trichloroethane	30	29.3	98	30	28.8	96	(80-119)	1.60	(< 20)
1,1-Dichloroethane	30	29.9	100	30	30.0	100	(77-125)	0.23	(< 20)
1,1-Dichloroethene	30	31.6	105	30	31.0	103	(71-131)	2.10	(< 20)
1,1-Dichloropropene	30	32.3	108	30	31.6	105	(79-125)	2.20	(< 20)
1,2,3-Trichlorobenzene	30	27.1	90	30	30.1	100	(69-129)	10.60	(< 20)
1,2,3-Trichloropropane	30	28.1	94	30	28.2	94	(73-122)	0.23	(< 20)
1,2,4-Trichlorobenzene	30	28.2	94	30	29.4	98	(69-130)	4.10	(< 20)
1,2,4-Trimethylbenzene	30	30.9	103	30	31.0	103	(79-124)	0.18	(< 20)
1,2-Dibromo-3-chloropropane	30	27.9	93	30	28.6	95	(62-128)	2.30	(< 20)
1,2-Dibromoethane	30	27.3	91	30	26.7	89	(77-121)	2.20	(< 20)
1,2-Dichlorobenzene	30	29.3	98	30	29.4	98	(80-119)	0.16	(< 20)
1,2-Dichloroethane	30	27.8	93	30	28.2	94	(73-128)	1.40	(< 20)
1,2-Dichloropropane	30	29.5	98	30	29.7	99	(78-122)	0.66	(< 20)
1,3,5-Trimethylbenzene	30	31.2	104	30	31.0	103	(75-124)	0.52	(< 20)
1,3-Dichlorobenzene	30	30.2	101	30	30.3	101	(80-119)	0.21	(< 20)
1,3-Dichloropropane	30	29.3	98	30	28.8	96	(80-119)	1.80	(< 20)
1,4-Dichlorobenzene	30	30.4	101	30	30.5	102	(79-118)	0.20	(< 20)
2,2-Dichloropropane	30	33.9	113	30	33.6	112	(60-139)	0.88	(< 20)
2-Butanone (MEK)	90	76.7	85	90	84.9	94	(56-143)	10.20	(< 20)
2-Chlorotoluene	30	30.6	102	30	30.3	101	(79-122)	1.00	(< 20)
2-Hexanone	90	82.1	91	90	84.2	94	(57-139)	2.60	(< 20)
4-Chlorotoluene	30	29.9	100	30	30.3	101	(78-122)	1.30	(< 20)
4-Isopropyltoluene	30	31.8	106	30	31.5	105	(77-127)	0.95	(< 20)
4-Methyl-2-pentanone (MIBK)	90	81.6	91	90	85.4	95	(67-130)	4.50	(< 20)
Benzene	30	30.3	101	30	30.3	101	(79-120)	0.10	(< 20)
Bromobenzene	30	29.2	97	30	29.4	98	(80-120)	0.71	(< 20)
Bromochloromethane	30	28.4	95	30	28.8	96	(78-123)	1.30	(< 20)
Bromodichloromethane	30	28.7	96	30	29.1	97	(79-125)	1.40	(< 20)
Bromoform	30	27.2	91	30	26.5	88	(66-130)	2.70	(< 20)
Bromomethane	30	29.8	99	30	30.5	102	(53-141)	2.40	(< 20)
Carbon disulfide	45	47.5	106	45	46.3	103	(64-133)	2.60	(< 20)

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Blank Spike ID: LCS for HBN 1225201 [VXX39140] Blank Spike Lab ID: 1684471 Date Analyzed: 09/08/2022 14:58 Spike Duplicate ID: LCSD for HBN 1225201 [VXX39140] Spike Duplicate Lab ID: 1684472 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225201001, 1225201002, 1225201003, 1225201004, 1225201005

Results by SW8260D Blank Spike (ug/L) Spike Duplicate (ug/L) Parameter <u>Spike</u> Rec (%) <u>Spike</u> Rec (%) CL RPD (%) RPD CL Result Result Carbon tetrachloride 30 31.6 105 30 31.2 104 (72-136) 1.20 (< 20) Chlorobenzene 30 29.5 98 30 29.0 97 1.80 (82-118) (< 20) Chloroethane 30 31.0 103 30 31.4 105 (60-138) 1.10 (< 20) Chloroform 30 27.1 90 30 27.4 91 (79-124) 1.10 (< 20) Chloromethane 30 29.9 100 30 29.3 98 (50-139) 1.90 (< 20) cis-1,2-Dichloroethene 30 28.9 96 30 29.7 99 (78-123) 2.80 (< 20) cis-1,3-Dichloropropene (75-124) 0.79 30 30.2 101 30 30.4 101 (< 20)Dibromochloromethane 30 29.2 97 30 28.6 95 (74-126) 2.10 (< 20) Dibromomethane 30 28.3 94 30 28.7 96 (79-123) 1.30 (< 20) Dichlorodifluoromethane 30 30 32.1 3.20 33.1 110 107 (32-152) (< 20) Ethylbenzene 30 30.5 102 30 29.9 100 (79-121) 1.90 (< 20) Freon-113 45 48.3 107 45 47.1 105 (70-136) 2.50 (< 20) Hexachlorobutadiene 30 30.5 102 30 31.0 103 1.70 (66-134) (< 20) 31.6 105 30 30.7 102 2.90 Isopropylbenzene (Cumene) 30 (72-131) (< 20) Methylene chloride 30 29.0 97 30 29.4 98 (74-124) 1.40 (< 20) Methyl-t-butyl ether 45 44.1 98 45 44.6 99 (71-124) 1.10 (< 20) Naphthalene 30 24.6 82 30 27.4 91 (61-128) 11.00 (< 20) n-Butylbenzene 30 29.3 98 30 28.5 95 (75-128) 2.60 (< 20) 105 30 30.9 2.30 n-Propylbenzene 30 31.6 103 (76-126) (< 20) 30 o-Xylene 30 30.3 101 29.7 99 (78-122) 2.10 (< 20) P & M -Xylene 60 61.4 102 60 60.4 101 (80-121) 1.50 (< 20) sec-Butylbenzene 30 32.6 109 30 31.8 106 (77-126) 2.40 (< 20) 30 99 2.20 Styrene 30 29.8 29.2 97 (78-123) (< 20) tert-Butylbenzene 30 31.7 106 30 31.4 105 (78-124) 1.00 (< 20) Tetrachloroethene 30 31.6 105 30 30.1 100 (74-129) 4.80 (< 20) Toluene 30 29.4 98 30 28.5 3.10 95 (80-121) (< 20) trans-1.2-Dichloroethene 30 30.7 102 30 30.4 101 (75-124) 1.10 (< 20) 27.4 trans-1,3-Dichloropropene 30 27.8 93 30 91 (73-127) 1.60 (< 20) Trichloroethene 30 31.2 104 30 30.6 102 (79-123) 1.80 (< 20) Trichlorofluoromethane 30 31.6 105 30 30.8 103 (65-141) 2.70 (< 20) Vinyl acetate 30 99 30 30.3 101 (54-146) 2.00 297 (< 20) Vinyl chloride 30 32.6 109 30 31.7 106 (58-137) 2.80 (< 20) Xylenes (total) 90 91.7 102 90 90.1 100 (79-121) 1.70 (< 20)

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Blank Spike ID: LCS for HBN 1225201 [VXX39140] Blank Spike Lab ID: 1684471 Date Analyzed: 09/08/2022 14:58 Spike Duplicate ID: LCSD for HBN 1225201 [VXX39140] Spike Duplicate Lab ID: 1684472 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225201001, 1225201002, 1225201003, 1225201004, 1225201005

Results by SW8260D Blank Spike (%) Spike Duplicate (%) Parameter <u>Spike</u> <u>Rec (%)</u> <u>Spike</u> Result Rec (%) <u>CL</u> <u>RPD (%)</u> RPD CL Result Surrogates 1,2-Dichloroethane-D4 (surr) 30 96 30 98 (81-118) 1.70 4-Bromofluorobenzene (surr) 100 30 100 30 (85-114) 0.15 Toluene-d8 (surr) 30 99 30 98 (89-112) 1.10

Batch Information

Analytical Batch: VMS21948 Analytical Method: SW8260D Instrument: Agilent 7890-75MS Analyst: NRB Prep Batch: VXX39140 Prep Method: SW5030B Prep Date/Time: 09/08/2022 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: 09/29/2022 11:13:18AM

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Method Blank

Blank ID: MB for HBN 1843046 [VXX/39146] Blank Lab ID: 1684747

QC for Samples: 1225201002

Results by SW8260D

	0.500U	1.00	0.310	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	99.5	81-118		%
4-Bromofluorobenzene (surr)	102	85-114		%
Toluene-d8 (surr)	98.6	89-112		%

Batch Information

Analytical Batch: VMS21951 Analytical Method: SW8260D Instrument: VPA 780/5975 GC/MS Analyst: NRB Analytical Date/Time: 9/9/2022 4:28:00PM Prep Batch: VXX39146 Prep Method: SW5030B Prep Date/Time: 9/9/2022 6:00:00AM Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

Matrix: Water (Surface, Eff., Ground)

Print Date: 09/29/2022 11:13:21AM

Anti-Foam Blank				
ank ID: AFB for HBN ank Lab ID: 168475	V 1843046 [VXX/39146 D	Matri	x: Water (Surfa	ace, Eff., Ground)
C for Samples: 225201002				
tesults by SW8260D				
	<u>Results</u>	LOQ/CL	<u>DL</u> 0.310	<u>Units</u> ug/L
<u>arameter</u> laphthalene	0.500U	1.00	0.010	0
	0.500U	1.00	0.010	

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Blank Spike ID: LCS for HBN 1225201 [VXX39146] Blank Spike Lab ID: 1684748 Date Analyzed: 09/09/2022 16:43 Spike Duplicate ID: LCSD for HBN 1225201 [VXX39146] Spike Duplicate Lab ID: 1684749 Matrix: Water (Surface, Eff., Ground)

Spike Duplicate (ug/L)

Rec (%)

<u>CL</u>

<u>RPD (%)</u>

RPD CL

Result

QC for Samples: 1225201002

Results by SW8260D Blank Spike (ug/L) Parameter Spike Result Rec (%)

Naphthalene	30	32.5	108	30	33.1	110	(61-128)	1.90	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		96	30		97	(81-118)	1.40	
4-Bromofluorobenzene (surr)	30		100	30		100	(85-114)	0.08	
Toluene-d8 (surr)	30		99	30		99	(89-112)	0.73	

<u>Spike</u>

Batch Information

Analytical Batch: VMS21951 Analytical Method: SW8260D Instrument: VPA 780/5975 GC/MS Analyst: NRB Prep Batch: VXX39146 Prep Method: SW5030B Prep Date/Time: 09/09/2022 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: 09/29/2022 11:13:23AM



Method Blank

Blank ID: MB for HBN 1842574 [XXX/46913] Blank Lab ID: 1682978 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225201001, 1225201003, 1225201004

Results by 8270D SIM LV (PAH)

Parameter	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
1-Methylnaphthalene	0.0234J	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0315J	0.0500	0.0150	ug/L
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	0.0500U	0.100	0.0310	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	65.4	42-86		%
Fluoranthene-d10 (surr)	70.6	50-97		%

Batch Information

Analytical Batch: XMS13328 Analytical Method: 8270D SIM LV (PAH) Instrument: Agilent GC 7890B/5977A SWA Analyst: NGG Analytical Date/Time: 9/2/2022 7:25:00PM Prep Batch: XXX46913 Prep Method: SW3535A Prep Date/Time: 9/1/2022 10:04:14AM Prep Initial Wt./Vol.: 250 mL Prep Extract Vol: 1 mL

Print Date: 09/29/2022 11:13:25AM

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Blank Spike ID: LCS for HBN 1225201 [XXX46913] Blank Spike Lab ID: 1682979 Date Analyzed: 09/02/2022 19:45 Spike Duplicate ID: LCSD for HBN 1225201 [XXX46913] Spike Duplicate Lab ID: 1682980 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225201001, 1225201002, 1225201003, 1225201004

Results by 8270D SIM LV (PAH)

		Blank Spike	e (ug/L)		Spike Dupli	cate (ug/L)			
<u>Parameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
1-Methylnaphthalene	2	1.50	75	2	1.36	68	(41-115)	9.70	(< 20)
2-Methylnaphthalene	2	1.43	72	2	1.30	65	(39-114)	9.40	(< 20)
Acenaphthene	2	1.55	78	2	1.44	72	(48-114)	7.30	(< 20)
Acenaphthylene	2	1.61	81	2	1.50	75	(35-121)	7.10	(< 20)
Anthracene	2	1.67	83	2	1.53	77	(53-119)	8.40	(< 20)
Benzo(a)Anthracene	2	1.54	77	2	1.47	73	(59-120)	4.90	(< 20)
Benzo[a]pyrene	2	1.64	82	2	1.56	78	(53-120)	5.30	(< 20)
Benzo[b]Fluoranthene	2	1.67	84	2	1.50	75	(53-126)	10.60	(< 20)
Benzo[g,h,i]perylene	2	1.83	92	2	1.74	87	(44-128)	5.00	(< 20)
Benzo[k]fluoranthene	2	1.66	83	2	1.66	83	(54-125)	0.06	(< 20)
Chrysene	2	1.61	81	2	1.56	78	(57-120)	3.20	(< 20)
Dibenzo[a,h]anthracene	2	1.81	90	2	1.73	87	(44-131)	4.30	(< 20)
Fluoranthene	2	1.53	77	2	1.47	73	(58-120)	4.20	(< 20)
Fluorene	2	1.64	82	2	1.56	78	(50-118)	5.30	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.80	90	2	1.71	86	(48-130)	5.10	(< 20)
Naphthalene	2	1.45	73	2	1.34	67	(43-114)	7.70	(< 20)
Phenanthrene	2	1.74	87	2	1.66	83	(53-115)	4.90	(< 20)
Pyrene	2	1.54	77	2	1.49	74	(53-121)	3.80	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2		67	2		61	(42-86)	9.60	
Fluoranthene-d10 (surr)	2		70	2		68	(50-97)	2.80	

Batch Information

Analytical Batch: XMS13328 Analytical Method: 8270D SIM LV (PAH) Instrument: Agilent GC 7890B/5977A SWA Analyst: NGG Prep Batch: XXX46913 Prep Method: SW3535A Prep Date/Time: 09/01/2022 10:04 Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 09/29/2022 11:13:27AM

SGS North America Inc.

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

SGS	
the second se	

lank ID: MB for HBN 1842865	[XXX/46949]	Matri	x: Water (Surfa	ce, Eff., Ground)
Blank Lab ID: 1684237				
QC for Samples: 1225201001, 1225201002, 122520	1004			
Results by AK102				
Parameter	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.200	mg/L
Surrogates				
5a Androstane (surr)	66.4	60-120		%
Batch Information				
Analytical Batch: XFC16336		Prep Ba	tch: XXX46949	
Analytical Method: AK102			ethod: SW35200	
Instrument: Agilent 7890B R			ate/Time: 9/8/20	
Analyst: HMW Analytical Date/Time: 9/9/2022	7.20.000		tial Wt./Vol.: 250) mL
Analylical Dale/Time: 9/9/2022	7:30:00PIVI	Prep Ex	tract Vol: 1 mL	

Print Date: 09/29/2022 11:13:30AM



Blank Spike ID: LCS for HBN 1225201 [XXX46949] Blank Spike Lab ID: 1684238 Date Analyzed: 09/09/2022 19:40 Spike Duplicate ID: LCSD for HBN 1225201 [XXX46949] Spike Duplicate Lab ID: 1684239 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1225201001, 1225201002, 1225201004

Results by AK102									
		Blank Spike	: (mg/L)	Ś	Spike Duplic	cate (mg/L)			
<u>Parameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Diesel Range Organics	20	17.1	86	20	14.8	74	* (75-125)	14.80	(< 20)
Surrogates									
5a Androstane (surr)	0.4		85	0.4		73	(60-120)	15.70	
Batch Information									
Analytical Batch: XFC16336				Pre	p Batch: X	XX46949			
Analytical Method: AK102				Pre	p Method:	SW3520C			
Instrument: Agilent 7890B R					p Date/Tim				
Analyst: HMW							g/L Extract V		
				Dup	pe init Wt./V	ol.: 0.4 m	g/L Extract Vo	DI: 1 mL	

Print Date: 09/29/2022 11:13:31AM

Chain of Custody

Alaska Resources and Environmental Services

AR_E P.O. Box 83050, Fairbanks, Alaska 99708 Phone: 907.374.3226

12	25	52(01

1-201-200 -----

Work Order No.:

Project Manager:	Lyle Gresehover										Bill	to:			le Gre											
Client Name:	Alaska Resource	s and Environm	nental Servic	es]	Com	ipany	2	A	aska	Reso	urces	and Er	nvironn	nental	Servic	ces				
Address:	PO Box 83050										Add	ress:		P	О Вох	8305	50									
City, State ZIP:	Fairbanks, AK 99	708									City	Stat	e ZIP:		airban			08								
Email:	Lyle@ak-res.con	1		Phone:	907	.374	1.322	26			Ema	10. 10 all 1			/le@a		<u>com</u>									
Project Name:	Kobuk Feed and	Fuel										REC	QUEST	ED /	ANAL	YSIS						ТАТ				
Project Number:							1															X Routine				
P.O. Number:	Date 8-26-2022	·																				Same Day				
Sampler's Name:	Josh Klynstra																					Next Day '	***			
	SAMPLE	RECEIPT					ľ															5 Day				
Temperature (°C):		Temp Bla	ink Present																			7 Day				
Received Intact:	Yes	No N/A	Wet Ice /	Blue Ice				ł																		
Cooler Custody Seal	ls: Yes	No N/A	Total Con		1																	*** Please ca				
Sample Custody Sea		No N/A		<u>a an an</u>	- Sa																				availabilit	ty
Sample Identifi		x Date Sampled	Time Sampled	Lab ID	No. of Containers	VOCs 8260	GRO by AK101	DRO by AK102	BTEX 8260C	PAH 8270D SIM												Due Date	_			
MW1-0822	w	8/26/2022	1530	IAJ	8	-	x		X	X					+											
MW2-0822		8/26/2022	1700	2AJ	10	x	X	X		x																
MW12-0822		8/26/2022	1715	3AJ	10	-			\square	X	_					1				1						
MW3-0822		8/26/2022	1800	YAJ	6	x			\mathbf{t}		1					+	1			+						
Trip Blank		8/26/2022	0800	SAC.	6	x	X	1		1						1										
Dissolved		Ag, Al, As, B,																		Ado		al Methods Avai	ilable			
Total		Ag, Al, As, B,		d, Co, Cr	, Cu,	Fe, K	, Li, N	/lg, M	n, Mo	o, Na	ι, Ni, P	, Pb,	Sb, Se,	Si, Sr	n, Sr, 1	ri, v, z					<u> </u>	Upon Request				
		RELINQUISH	HED BY														REC	EIVE	D BY							
Print N	Name	S	Signature			Da	ate/1	Fime				F	rint N	ame				. ^	Signa	ture	,	Date/Tim	ne			
loch Kl	ynstra	Idan		<u>an in stand in the</u>	8-2	9-22	2 (0830)	14	low	12.1.10	ala	hust	mil	we		K) a	- and	1	$\overline{\mathcal{D}}$	8/29/22 83	30 (
J0311 KI	,											10000	10 03													

	e-Sample Re	eceipt F	orm FBK							
563 •	GS Workorder #:		ARE	S			AF	RE	ES	
Review Criteria	۲	ondition (Yes,	No, N/A	Ex	ception	is No	ted be	elo	W	
Chain of Custody / T	emperature Requirer	nents	Y	es Exemption p	permitted	if sam	pler har	nd d	carries/deliv	ers.
	Seals intact? Note # & loca									
	COC accompanied samp									
DOD: Were samples received										
	**Exemption permitted if chi	and the second		·····					and the first sector of the	DES
Temperature blank comp	oliant* (i.e., 0-6 °C after C	CF)? Yes		1		@	3.6		Therm. ID:	D53
	the "applet temperature" will be		Cooler ID:			@			Therm. ID:	
If samples received without a temperature blank, mented instead & "COOLER TEMP" will be noted	to the right. "ambient" or "chilled	d" will	Cooler ID:			0			Therm. ID: Therm. ID:	
be noted if neither is ava	ailable.		Cooler ID:			@		Ч	Them. ID.	
*/f>6°C woro same	les collected <8 hours ag	202								
	100 001100100 50 110013 02	,v. L	Ĭ							
lf <0°C were	sample containers ice fr	ee?								
Note: Identify containers received at	non-compliant temperat	ure .								
	029 if more space is nee									
Holding Time / Documentation				er to form F-083	"Sample	Guide	" for spe	ecif	ic holding ti	mes.
Do samples match COC** (i.e.,sampl			ll ll							
**Note: If times differ <1hr, recor										
ote: If sample information on containers differs fro										
Were samples in good condition	(no leaks/cracks/breaka	ge)? Yes								
ere analytical requests clear? (i.e., me	thod is specified for anal	vses								
with multiple option fo	r analysis (Ex: BTEX, Me	etals)								
		Yes				-				
Were Trip Blanks (i.e., VOAs, LI										
Were all water VOA vials free of head	space (i.e., bubbles S on d extracted with MeOH+E									
For Rush/Short Hold Time, was										
				and propoduros	and move	impool	t data	ual	tv.	
Note to Client: Any "No", a	nswer above indicates non-	compliance	e with standa	ard procedures	anu may l	inpaci	i uata qi	uall	uy.	
	Additional I	notes (if	applicable	»):						
		 6		33	3464	46				
	Additional I		applicable		3464	46		:		

303	SGS Workorder #:	122520)1 1225201
Revi	ew Criteria	Condition (Yes, No, N/A	Exceptions Noted below
Chain of Custody	/ Temperature Requirements	Note: Temper	ature and COC seal information is found on the chain of custody form
DOD only: Did all sam	ple coolers have a corresponding	COC? N/A	
lf	<0°C, were sample containers ice	e free? N/A	
	Note containers receive	ed with ice:	
	iners received at non-compliant te (Use form FS-0029 if more space		
	-		form F-083 "Sample Guide" for specific holding times and sample contain
	received within analytical holding		
Do sample lab	bels match COC? Record discrepa ntainers differs from COC, default differ <1hr, record details & login	to COC Will be ran	0 containers for sample 1 instead of 8 mentioned on ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3 for trip blank instead of 6 that were mentioned on CC
Do sample lab	els match COC? Record discrepa	to COC per COC.	ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3
Do sample lab Note: If information on con information for login. If times	els match COC? Record discrepa ntainers differs from COC, default differ <1hr, record details & login	to COC per COC. Clear? Yes	ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3
Do sample lab Note: If information on con information for login. If times e. method is specified for a (Eg, BTEX 8021 vs	els match COC? Record discrepa ntainers differs from COC, default differ <1hr, record details & login Were analytical requests analyses with multiple option for m	No Received 1 to COC COC.Rece per COC. Will be ran clear? Yes vethod Ves	ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3
Do sample lab Note: If information on con- formation for login. If times e. method is specified for a (Eg, BTEX 8021 vs Were proper containers	els match COC? Record discrepa ntainers differs from COC, default differ <1hr, record details & login Were analytical requests analyses with multiple option for m s 8260, Metals 6020 vs 200.8)	ancies. No Received 1 to COC per COC. Will be ran containers clear? Yes bethod used? Yes	ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3
Do sample lab Note: If information on con- formation for login. If times e. method is specified for a (Eg, BTEX 8021 vs Were proper containers Note: Exemption for m	els match COC? Record discrepa ntainers differs from COC, default differ <1hr, record details & login Were analytical requests analyses with multiple option for m \$ 8260, Metals 6020 vs 200.8) (type/mass/volume/preservative)	ancies. No Received 1 to COC COC. COC.Rece Will be ran containers clear? Yes lethod used? Yes ater.	ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3
Do sample lab Note: If information on con formation for login. If times e. method is specified for a (Eg, BTEX 8021 vs Were proper containers Note: Exemption for m Volatile Analysis Req	els match COC? Record discrepa ntainers differs from COC, default differ <1hr, record details & login Were analytical requests analyses with multiple option for m s 8260, Metals 6020 vs 200.8) (type/mass/volume/preservative)u etals analysis by 200.8/6020 in wa	ancies. No Received 1 to COC per COC. Containers clear? Yes bethod used? Yes ater. g, etc.)	ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3
Do sample lab Note: If information on con formation for login. If times e. method is specified for a (Eg, BTEX 8021 vs Were proper containers Note: Exemption for m Volatile Analysis Req re all soil VOAs received w	els match COC? Record discrepa ntainers differs from COC, default differ <1hr, record details & login Were analytical requests analyses with multiple option for m \$ 8260, Metals 6020 vs 200.8) (type/mass/volume/preservative)u etals analysis by 200.8/6020 in wa uirements (VOC, GRO, LL-Hg	ancies. No Received 1 to COC per COC. COC.Rece Will be ran containers clear? Yes ater. g, etc.) ainer? N/A	ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3
Do sample lab Note: If information on con formation for login. If times e. method is specified for a (Eg, BTEX 8021 vs Were proper containers Note: Exemption for m Volatile Analysis Req re all soil VOAs received w Were Trip Blanks (e.g. Vere all water VOA vials fre	eels match COC? Record discrepa ntainers differs from COC, default a differ <1hr, record details & login Were analytical requests analyses with multiple option for m s 8260, Metals 6020 vs 200.8) (type/mass/volume/preservative)u etals analysis by 200.8/6020 in wa uirements (VOC, GRO, LL-Hg vith a corresponding % solids conta ., VOAs, LL-Hg) in cooler with same ee of headspace (e.g., bubbles ≤ 6	ancies. No Received 1 to COC per COC. Containers clear? Yes ater. Yes	ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3
Do sample lab Note: If information on con- formation for login. If times e. method is specified for a (Eg, BTEX 8021 vs) Were proper containers Note: Exemption for m Volatile Analysis Req ere all soil VOAs received w Were Trip Blanks (e.g. Were all water VOA vials fre Were all soil VO	els match COC? Record discrepa ntainers differs from COC, default a differ <1hr, record details & login Were analytical requests analyses with multiple option for m s 8260, Metals 6020 vs 200.8) (type/mass/volume/preservative)u etals analysis by 200.8/6020 in wa uirements (VOC, GRO, LL-Hg vith a corresponding % solids conta ., VOAs, LL-Hg) in cooler with same ee of headspace (e.g., bubbles ≤ 6 DAs field extracted with Methanol+	ancies. No Received 1 to COC per COC. COC.Rece Will be ran containers clear? Yes ater. Yes ater. Yes ater. VIA ainer? N/A pples? Yes Somm)? Yes BFB? N/A	ived containers for DRO & PAH analysis for sample per client although not noted on COC. Received 3

-



Sample Containers and Preservatives

<u>Container Id</u>	Preservative	<u>Container</u> Condition	<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> <u>Condition</u>
1225201001-A	HCL to pH < 2	OK			
1225201001-B	HCL to $pH < 2$	OK			
1225201001-C	HCL to $pH < 2$	OK			
1225201001-D	HCL to $pH < 2$	OK			
1225201001-E	HCL to $pH < 2$	OK			
1225201001-F	HCL to $pH < 2$	OK			
1225201001-G	HCL to $pH < 2$	OK			
1225201001-H	HCL to $pH < 2$	OK			
1225201001-I	No Preservative Required	OK			
1225201001 I	No Preservative Required	OK			
1225201001 J	HCL to $pH < 2$	OK			
1225201002-B	HCL to $pH < 2$	OK			
1225201002-C	HCL to $pH < 2$	OK			
1225201002-D	HCL to $pH < 2$	OK			
1225201002-E	HCL to $pH < 2$	OK			
1225201002 E	HCL to $pH < 2$	OK			
1225201002 T	HCL to $pH < 2$	OK			
1225201002 G	HCL to $pH < 2$	OK			
1225201002-I	No Preservative Required	OK			
1225201002-J	No Preservative Required	OK			
1225201002 J	HCL to $pH < 2$	OK			
1225201003-В	HCL to $pH < 2$	OK			
1225201005 B	HCL to $pH < 2$	OK			
1225201003-D	HCL to $pH < 2$	OK			
1225201003-E	HCL to $pH < 2$	OK			
1225201003-F	HCL to $pH < 2$	OK			
1225201003 G	HCL to $pH < 2$	OK			
1225201003-H	HCL to $pH < 2$	OK			
1225201003-I	No Preservative Required	OK			
1225201003-J	No Preservative Required	OK			
1225201005 J	HCL to $pH < 2$	OK			
1225201004-B	HCL to $pH < 2$	OK			
1225201004-C	HCL to $pH < 2$	OK			
1225201004-D	HCL to $pH < 2$	OK			
1225201004-E	HCL to $pH < 2$	OK			
1225201004-F	HCL to $pH < 2$	OK			
1225201004-G	HCL to $pH < 2$	OK			
1225201004-H	HCL to $pH < 2$	OK			
1225201004-I	No Preservative Required	OK			
1225201004-J	No Preservative Required	OK			
1225201005-A	HCL to pH < 2	OK			
1225201005-B	HCL to $pH < 2$	OK			
1225201005-C	HCL to $pH < 2$	OK			
1225201005-D	HCL to $pH < 2$	OK			
1225201005-E	HCL to $pH < 2$	OK			
1225201005-F	HCL to $pH < 2$	OK			
		-			

Container Id

<u>Preservative</u>

<u>Container</u> <u>Condition</u> Container Id

<u>Preservative</u>

Container Condition

Container Condition Glossary

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

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

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.

Laboratory Data Review Checklist

Completed By:

Josh Klynstra

Title:

Environmental Chemist

Date:

11-16-2022

Consultant Firm:

Alaska Resources and Environmental Services

Laboratory Name:

SGS North America Inc.

Laboratory Report Number:

1225201

Laboratory Report Date:

9-29-2022

CS Site Name:

Kobuk Feed and Fuel

ADEC File Number:

Hazard Identification Number:

Laboratory Report Date:

9-29-2022

CS Site Name:

Kobuk Feed and Fuel

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?

SGS North America is an ADEC CS approved laboratory.

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 \square No \square N/A \boxtimes Comments:

No samples were sub-contracted.

- 2. Chain of Custody (CoC)
 - a. CoC information completed, signed, and dated (including released/received by)?

|--|

b. Correct analyses requested?

Yes \square No \boxtimes N/A \square Comments:

The laboratory received 10 containers for sample 1 instead of 8 mentioned on COC. Received containers for DRO & PAH analysis for sample 4. Will be ran per client although not noted on COC. Received 3 containers for trip blank instead of 6 that were mentioned on COC.

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

Yes \boxtimes No \square N/A \square Comments:

Cooler temperature upon receipt in Anchorage was 3.6° C.

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

Yes \boxtimes No \square N/A \square Comments:

Five (5) sample consisting of four (4) groundwater samples (including one duplicate) and one (1) trip blank were received by SGS on August 20, 2022. The samples arrived in good condition and were property preserved.

Labora	atory Report Date:
	29-2022
CS Site	e Name:
Ko	buk Feed and Fuel
	c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)? Yes \boxtimes No \square N/A \square Comments:
	Samples arrived in good condition.
	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 \boxtimes No \square N/A \square Comments:
]	No discrepancies noted in the case narrative.
(e. Data quality or usability affected?
	Comments:
]	Data not affected.
4.	Case Narrative
	a. Present and understandable?
	Yes \boxtimes No \square N/A \square Comments:
L	b. Discrepancies, errors, or QC failures identified by the lab?
	Yes \boxtimes No \square N/A \square Comments:
	AK102 - Sample MW12-0822 was lost due to lab error. Sample was not re-extracted due to insufficient remaining sample volume.
	c. Were all corrective actions documented?
Г	Yes \square No \square N/A \boxtimes Comments:
	d. What is the effect on data quality/usability according to the case narrative?
	Comments:

AK102 – No sample data is reported for MW12-0822 due to lab error.

Laboratory Report Date:

9-29-2022

CS Site Name:

Kobuk Feed and Fuel

5. <u>Samples Results</u>

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

Yes \boxtimes No \square N/A \square Comments:

b. All applicable holding times met?

Yes⊠	No□	$N/A\square$	Comments:
------	-----	--------------	-----------

c. All soils reported on a dry weight basis?

Yes \square No \square N/A \boxtimes Comments:

Sample matrix for this project is groundwater.

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

Yes \square No \boxtimes N/A \square Comments:

8260 – 1,2,3-Trichloropropane has a detection limit that exceeds ADEC CUL's in one or more samples.

e. Data quality or usability affected?

Data quality is affected. Analytes with elevated detection limits could be present at concentrations that exceed ADEC cleanup levels. Data is still usable. Sample results with detection limits that exceed ADEC CUL's are highlighted in blue in the analytical summary table.

6. <u>QC Samples</u>

- a. Method Blank
 - i. One method blank reported per matrix, analysis and 20 samples?

Yes \boxtimes No \square N/A \square Comments:

Laboratory Report Date:

9-29-2022

CS Site Name:

Kobuk Feed and Fuel

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

Yes \square No \boxtimes N/A \square Comments:

8270 – 1-Methylnaphthalene and 2-Methylnaphthalene were detected in MB 1682978 at concentrations (0.0234 ug/L and 0.0315 ug/L) that were above the method detection limit but below the LOQ (0.0250 ug/L). Data quality is affected. Analytes detected in both the sample and the blank are considered high biased estimates and are qualified with the B data flag. 1-Methylnaphthalene and 2-Methylnaphthalene were detected in associated samples at concentrations below ADEC CULs. Data usability is not affected.

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

Samples MW1-0822, MW2-0822, MW12-0822 and MW3-0822 are associated.

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

Yes \boxtimes No \square N/A \square Comments:

Affected results are qualified with B data flags.

v. Data quality or usability affected?

Comments:

See note 6.a.ii

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 \boxtimes No \square N/A \square Comments:

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

Yes \square No \square N/A \boxtimes Comments:

Metals/inorganics were not requested for this sampling event.

Laboratory Report Date:

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CS Site Name:

Kobuk Feed and Fuel

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 \square No \boxtimes N/A \square Comments:

AK102 – The LCSD for batch 1684238 recovered below acceptance criteria for DRO. Data quality is affected. Associated detected results for DRO in samples MW1-0822, MW2-0822 and MW3-0822 are considered low biased estimates and are qualified with the QL data flag. The associated low biased detected results are significantly above or below ADEC CLs and remain usable.

 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 \boxtimes No \square N/A \square Comments:

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

Samples MW1-0822, MW2-0822 and MW3-0822 are associated.

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

Yes \boxtimes No \square N/A \square Comments:

Affected results are qualified with QL data flags.

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

Comments:

See note 6.b.iii

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 \square No \square N/A \boxtimes Comments:

MS/MSD not required for this project.

Laboratory Report Date:

9-29-2022

CS Site Name:

Kobuk Feed and Fuel

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

Yes \square No \square N/A \boxtimes Comments:

Metals/inorganics were not requested for this sampling event.

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 \square No \square N/A \boxtimes 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 \square No \square N/A \boxtimes 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 \square No \square N/A \boxtimes Comments:

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

Comments:

N/A

- 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 \boxtimes No \square N/A \square Comments:

Laboratory Report Date:

9-29-2022

CS Site Name:

Kobuk Feed and Fuel

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 \square No \boxtimes N/A \square Comments:

AK101 – Surrogate 4-Bromofluorobenzene exceeded acceptance criteria for sample MW2-0822 for Analysis Batch VFC16244. Data quality is affected. Detected results may be biased high and are qualified with QH data flags in the associated samples. Non-detect results are not affected. Associated detected results for GRO were significantly below ADEC cleanup levels and remain usable.

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

Yes \boxtimes No \square N/A \square Comments:

See note 6.d.ii.

iv. Data quality or usability affected?

Comments:

See note 6.d.ii.

e. Trip Blanks

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

Yes \boxtimes No \square N/A \square 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 \boxtimes No \square N/A \square Comments:

All samples delivered to the laboratory in a single cooler.

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

Yes \boxtimes No \square N/A \square Comments:

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

N/A

v. Data quality or usability affected?

Comments:

N/A

- f. Field Duplicate
 - i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes \boxtimes No \square N/A \square Comments:

Sample MW12-0822 is a blind field duplicate of sample MW2-0822.

ii. Submitted blind to lab?

Yes \boxtimes No \square N/A \square Comments:

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

RPD (%) = Absolute value of: $(R_1-R_2)/((R_1+R_2)/2)$ x 100

Where $R_1 =$ Sample Concentration $R_2 =$ Field Duplicate Concentration

Yes \square No \boxtimes N/A \square Comments:

8260 – The following analyte had an RPDs above recommended limits for samples MW2-0822 and MW12-0822: Naphthalene (101.8%), Chloromethane (70.1%), n-Propylbenzene (35.3%), sec-Butylbenzene (34.1%)

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

Data quality for the analytes with RPDs exceeding control limits are affected. Associated results are considered estimated with an unknown bias and are qualified with the "QN" data flag. All associated results are less than ADEC CULs. Data remains usable.

Laboratory Report Date:

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

Yes \square No \square N/A \boxtimes Comments:

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

Yes \square No \square N/A \boxtimes Comments:

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 \boxtimes No \square N/A \square Comments:

Appendix D: Analytical Results Summary Tables

Appendix D-1:

2019 Analytical Results Summary Table: 580-89500-1

			Sample ID Location ID Collection Date/Time Lab Sample ID Matrix Description	Kobuk-MW1-919 Kobuk-MW1-919 9/23/2019 1330 580-89500-1 Water Primary	Kobuk-MW2-919 Kobuk-MW2-919 9/23/2019 1230 580-89500-2 Water Primary	Kobuk-MW3-919 Kobuk-MW3-919 9/23/2019 1030 580-89500-3 Water Primary	Kobuk-MW12-919 Kobuk-MW12-919 9/23/2019 1245 580-89500-4 Water Duplicate to MW-2-919
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]
AK 101	μg/L	GRO	2200	ND [100]	360 [100]	180 [100] J	210 [100] J
AK 102	μg/L	DRO	1500	ND [9.8]	360 [9.8]	1700 [100]	380 [100]
		_					
8260C 8260C	μg/L	Benzene	4.6 15	ND [0.53] ND [0.5]			
8260C 8260C	μg/L μg/L	Ethylbenzene m-Xylene & p-Xylene	15	ND [0.5] ND [0.75]			
8260C	μg/L μg/L	o-Xylene	190	ND [0.75] ND [0.39]			
8260C	μg/L	Toluene	1100	ND [0.39]			
EPA 8270D SIM	μg/L	1-Methylnaphthalene	11		0.62 [0.023]	16 [0.029]	0.56 [0.023]
EPA 8270D SIM	μg/L	2-Methylnaphthalene	36		0.24 [0.044]	14 [0.056]	0.19 [0.044]
EPA 8270D SIM EPA 8270D SIM	μg/L ug/I	Acenaphthene	530 260		0.022 [0.022] J ND [0.016]	0.41 [0.028] 0.089 [0.02] J	ND [0.022] ND [0.016]
EPA 8270D SIM EPA 8270D SIM	μg/L μg/L	Acenaphthylene Anthracene	43		ND [0.016] ND [0.025]	0.089 [0.02] J 0.046 [0.032] J	ND [0.016] ND [0.025]
EPA 8270D SIM	μg/L μg/L	Benzo[a]anthracene	0.30		ND [0.023]	ND [0.015]	ND [0.025]
EPA 8270D SIM	μg/L	Benzo[a]pyrene	0.25		ND [0.012]	ND [0.015]	ND [0.012]
EPA 8270D SIM	μg/L	Benzo[b]fluoranthene	2.5		ND [0.011]	ND [0.014]	ND [0.011]
EPA 8270D SIM	μg/L	Benzo[g,h,i]perylene	0.26		ND [0.021]	ND [0.027]	ND [0.021]
EPA 8270D SIM	μg/L	Benzo[k]fluoranthene	0.80		ND [0.015]	ND [0.019]	ND [0.015]
EPA 8270D SIM	μg/L	Chrysene	2.0		ND [0.01]	ND [0.013]	ND [0.01]
EPA 8270D SIM EPA 8270D SIM	μg/L μg/I	Dibenz(a,h)anthracene Fluoranthene	0.25 260		ND [0.013] ND [0.017]	ND [0.017] ND [0.022]	ND [0.013] ND [0.017]
EPA 8270D SIM EPA 8270D SIM	μg/L μg/L	Fluorene	290		0.023 [0.016] J	1.1 [0.022]	0.022 [0.016] J
EPA 8270D SIM	μg/L μg/L	Indeno[1,2,3-cd]pyrene	0.19		ND [0.022]	ND [0.028]	ND [0.022]
EPA 8270D SIM	μg/E μg/L	Naphthalene	1.7		4.1 [0.053]	14 [0.068]	3.7 [0.053]
EPA 8270D SIM	μg/L	Phenanthrene	170		ND [0.056]	0.35 [0.071]	ND [0.056]
EPA 8270D SIM	μg/L	Pyrene	120		ND [0.026]	ND [0.033]	ND [0.026]
00100	~		0000			NE (0.001	
8260C 8260C	μg/L	1,1,1-Trichloroethane 1.1-Dichloroethane	8000 28		ND [0.39] ND [0.22]	ND [0.39] ND [0.22]	ND [0.39] ND [0.22]
8260C 8260C	μg/L μg/L	1,1-Dichloropropene	28 NS		ND [0.22] ND [0.29]	ND [0.22] ND [0.29]	ND [0.22] ND [0.29]
8260C	μg/L μg/L	1,2,3-Trichlorobenzene	7.0		ND [0.25]	ND [1.1]	ND [0.27]
8260C	μg/E μg/L	1,2,3-Trichloropropane	0.0075		ND [0.41]	ND [0.41]	ND [0.41]
8260C	μg/L	1,2,4-Trichlorobenzene	4.0		ND [0.33]	ND [0.33]	ND [0.33]
8260C	μg/L	1,2,4-Trimethylbenzene	56		7.1 [0.61]	48 [0.61]	7.1 [0.61]
8260C	μg/L	1,2-Dibromo-3-Chloropropane	NS		ND [1.8]	ND [1.8]	ND [1.8]
8260C 8260C	μg/L	1,2-Dichlorobenzene 1,2-Dichloropropane	300 4.4		ND [0.46] ND [0.18]	ND [0.46] ND [0.18]	ND [0.46] ND [0.18]
8260C	μg/L μg/L	1,3,5-Trimethylbenzene	4.4		2.7 [0.55] J	23 [0.55]	2.8 [0.55] J
8260C	μg/L μg/L	1,3-Dichlorobenzene	300		ND [0.18]	ND [0.18]	ND [0.18]
8260C	μg/L	1,3-Dichloropropane	NS		ND [0.35]	ND [0.35]	ND [0.35]
8260C	μg/L	2,2-Dichloropropane	NS		ND [0.32]	ND [0.32]	ND [0.32]
8260C	μg/L	2-Chlorotoluene	NS		ND [0.51]	ND [0.51]	ND [0.51]
8260C	μg/L	4-Chlorotoluene	NS		ND [0.51]	ND [0.51]	ND [0.51]
8260C 8260C	μg/L ug/I	4-Isopropyltoluene Bromobenzene	NS 62		ND [0.28] ND [0.43]	3 [0.28] ND [0.43]	0.62 [0.28] J ND [0.43]
8260C 8260C	μg/L μg/L	Bromobenzene Bromochloromethane	62 NS		ND [0.43] ND [0.29]	ND [0.43] ND [0.29]	ND [0.43] ND [0.29]
8260C	μg/L μg/L	Carbon tetrachloride	4.6		ND [0.29]	ND [0.29]	ND [0.29] ND [0.3]
8260C	μg/L	Chlorobenzene	78		ND [0.44]	ND [0.44]	ND [0.44]
8260C	μg/L	Chloroethane	21000		ND [1.1]	ND [1.1]	ND [1.1]
8260C	μg/L	Chloromethane	190		ND [5.4]	ND [5.4]	ND [5.4]
8260C	μg/L	cis-1,2-Dichloroethene	36		ND [0.69]	ND [0.69]	ND [0.69]
8260C 8260C	μg/L	Dichlorodifluoromethane	200		ND [2.3]	ND [2.3]	ND [2.3]
	μg/L	Ethylbenzene	15 450		9.8 [0.5]	9.3 [0.5]	9.2 [0.5]
8260C 8260C	μg/L	Isopropylbenzene Methyl tert-butyl ether	450 140		1.9 [0.51] J ND [0.44]	6.6 [0.51] ND [0.44]	2.1 [0.51] ND [0.44]
8260C 8260C	μg/L μg/L	Methyl tert-butyl ether Methylene Chloride	140		ND [0.44] ND [1.4]	ND [0.44] ND [1.4]	ND [0.44] ND [1.4]
8260C	μg/L μg/L	m-Xylene & p-Xylene	190		31 [0.75]	38 [0.75]	31 [0.75]
8260C	μg/L	n-Butylbenzene	1000		ND [0.44]	ND [0.44]	0.48 [0.44] J
8260C	μg/L	N-Propylbenzene	660		2 [0.5] J	9.7 [0.5]	2.1 [0.5] J

Former Kobuk Feed and Fuel 2019 Groundwater Analytical Results Summary Table, 580-895001-1

Table Notes and Data Flags are defined at the end of the table Blue shade indicates ND result has LOD that exceeds ADEC cleanup level Gray shade indicates ADEC cleanup level exceedance

			Sample ID Location ID	Kobuk-MW1-919 Kobuk-MW1-919	Kobuk-MW2-919 Kobuk-MW2-919	Kobuk-MW3-919 Kobuk-MW3-919	Kobuk-MW12-919 Kobuk-MW12-919
			Collection Date/Time	9/23/2019 1330	9/23/2019 1230	9/23/2019 1030	9/23/2019 1245
			Lab Sample ID	580-89500-1	580-89500-2	580-89500-3	580-89500-4
			Matrix	Water	Water	Water	Water
			Description	Primary	Primary	Primary	Duplicate to MW-2-919
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]
8260C	μg/L	o-Xylene	190		6.7 [0.39]	12 [0.39]	6.5 [0.39]
8260C	μg/L	sec-Butylbenzene	2000		ND [0.49]	2.2 [0.49] J	ND [0.49]
8260C	μg/L	Styrene	1200		ND [1]	ND [1]	ND [1]
8260C	μg/L	t-Butylbenzene	690		ND [0.58]	ND [0.58]	ND [0.58]
8260C	μg/L	Toluene	1100		1.5 [0.39] J	0.79 [0.39] J	1.8 [0.39] J
8260C	μg/L	trans-1,2-Dichloroethene	360		ND [0.39]	ND [0.39]	ND [0.39]
8260C	μg/L	Trichlorofluoromethane	5200		ND [0.63]	ND [0.63]	ND [0.63]
8260C	μg/L	Xylenes Total	190		37.7 [1.14]	50.0 [1.14]	37.5 [1.14]
8260C SIM	μg/L	1,1,1,2-Tetrachloroethane	5.7		ND [0.009]	ND [0.009]	ND [0.009]
8260C SIM	μg/L	1,1,2,2-Tetrachloroethane	0.76		ND [0.049]	ND [0.049]	ND [0.049]
8260C SIM	μg/L	1,1,2-Trichloroethane	0.41		ND [0.017]	ND [0.017]	ND [0.017]
8260C SIM	μg/L	1,1-Dichloroethene	280		0.12 [0.014] J	ND [0.014]	0.11 [0.014] J
8260C SIM	μg/L	1,2-Dibromoethane	0.075		ND [0.014]	ND [0.014]	ND [0.014]
8260C SIM	μg/L	1,2-Dichloroethane	1.7		ND [0.024]	ND [0.024]	0.17 [0.024] J
8260C SIM	μg/L	1,4-Dichlorobenzene	4.8		ND [0.014]	ND [0.014]	ND [0.014]
8260C SIM	μg/L	2-Hexanone	38		ND [0.098]	ND [0.098]	ND [0.098]
8260C SIM	μg/L	Benzene	4.6		13 [0.009]	0.17 [0.009] J	14 [0.009]
8260C SIM	μg/L	Bromodichloromethane	1.3		ND [0.006]	ND [0.006]	ND [0.006]
8260C SIM	μg/L	Bromoform	33		ND [0.013]	ND [0.013]	ND [0.013]
8260C SIM	μg/L	Bromomethane	7.5		ND [0.012]	ND [0.012]	ND [0.012]
8260C SIM	μg/L	Chloroform	2.2		ND [0.009]	ND [0.009]	ND [0.009]
8260C SIM	μg/L	cis-1,3-Dichloropropene	NS		ND [0.026]	ND [0.026]	ND [0.026]
8260C SIM	μg/L	Dibromochloromethane	8.7		ND [0.016]	ND [0.016]	ND [0.016]
8260C SIM	μg/L	Dibromomethane	8.3		ND [0.017]	ND [0.017]	ND [0.017]
8260C SIM	μg/L	Hexachlorobutadiene	1.4		ND [0.026]	ND [0.026]	ND [0.026]
8260C SIM	μg/L	Naphthalene	1.7		6.8 [0.013] B	35 [0.013] B	8 [0.013] B
8260C SIM	μg/L	Tetrachloroethene	41		0.15 [0.017] J	ND [0.017]	0.15 [0.017] J
8260C SIM	μg/L	trans-1,3-Dichloropropene	NS		ND [0.027]	ND [0.027]	ND [0.027]
8260C SIM	μg/L	Trichloroethene	2.8		ND [0.009]	ND [0.009]	ND [0.009]
8260C SIM	μg/L	Vinyl chloride	0.19		ND [0.013]	ND [0.013]	ND [0.013]

Former Kobuk Feed and Fuel 2019 Groundwater Analytical Results Summary Table, 580-895001-1

			Sample ID Location ID Collection Date/Time Lab Sample ID Matrix Description	Trip Blank Trip Blank 9/23/2019 0800 580-89500-5 Other Trip Blank
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]
AK 101	μg/L	GRO	2200	ND [100]
AK 102	μg/L	DRO	1500	
00/00	~	D	1.6	
8260C 8260C	μg/L ug/L	Benzene Ethylbenzene	4.6	
8260C	μg/L	m-Xylene & p-Xylene	190	
8260C	μg/L	o-Xylene	190	
8260C	µg/L	Toluene	1100	
EPA 8270D SIM	μg/L	1-Methylnaphthalene	11	
EPA 8270D SIM	μg/L	2-Methylnaphthalene	36	
EPA 8270D SIM EPA 8270D SIM	μg/L μg/L	Acenaphthene Acenaphthylene	530 260	
EPA 8270D SIM EPA 8270D SIM	μg/L μg/L	Anthracene	43	
EPA 8270D SIM	μg/L	Benzo[a]anthracene	0.30	
EPA 8270D SIM	μg/L	Benzo[a]pyrene	0.25	
EPA 8270D SIM EPA 8270D SIM	μg/L μg/L	Benzo[b]fluoranthene Benzo[g,h,i]perylene	2.5 0.26	
EPA 8270D SIM	μg/L μg/L	Benzo[k]fluoranthene	0.20	
EPA 8270D SIM	μg/L	Chrysene	2.0	
EPA 8270D SIM	μg/L	Dibenz(a,h)anthracene	0.25 260	
EPA 8270D SIM EPA 8270D SIM	μg/L μg/L	Fluoranthene Fluorene	290	
EPA 8270D SIM	μg/L	Indeno[1,2,3-cd]pyrene	0.19	
EPA 8270D SIM	μg/L	Naphthalene	1.7	
EPA 8270D SIM EPA 8270D SIM	μg/L μg/L	Phenanthrene Pyrene	170 120	
EI / 02/0D 510	μ ₆ /12	1 yrone	120	
8260C	μg/L	1,1,1-Trichloroethane	8000	ND [0.39]
8260C 8260C	μg/L μg/L	1,1-Dichloroethane	28 NS	ND [0.22] ND [0.29]
8260C	μg/L μg/L	1,1-Dichloropropene 1,2,3-Trichlorobenzene	7.0	ND [0.29]
8260C	μg/L	1,2,3-Trichloropropane	0.0075	ND [0.41]
8260C	μg/L	1,2,4-Trichlorobenzene	4.0	ND [0.33]
8260C 8260C	μg/L μg/L	1,2,4-Trimethylbenzene 1,2-Dibromo-3-Chloropropane	56 NS	ND [0.61] ND [1.8]
8260C	μg/L	1,2-Dichlorobenzene	300	ND [0.46]
8260C	μg/L	1,2-Dichloropropane	4.4	ND [0.18]
8260C 8260C	μg/L μg/L	1,3,5-Trimethylbenzene 1,3-Dichlorobenzene	120 300	ND [0.55] ND [0.18]
8260C	μg/L μg/L	1,3-Dichloropropane	NS	ND [0.18] ND [0.35]
8260C	μg/L	2,2-Dichloropropane	NS	ND [0.32]
8260C	µg/L	2-Chlorotoluene	NS	ND [0.51]
8260C 8260C	μg/L μg/L	4-Chlorotoluene 4-Isopropyltoluene	NS NS	ND [0.51] ND [0.28]
8260C	μg/L μg/L	Bromobenzene	62	ND [0.43]
8260C	μg/L	Bromochloromethane	NS	ND [0.29]
8260C 8260C	µg/L µg/I	Carbon tetrachloride Chlorobenzene	4.6 78	ND [0.3] ND [0.44]
8260C 8260C	μg/L μg/L	Chloroethane	21000	ND [0.44] ND [1.1]
8260C	μg/L	Chloromethane	190	ND [5.4]
8260C	µg/L	cis-1,2-Dichloroethene	36	ND [0.69]
8260C 8260C	μg/L μg/L	Dichlorodifluoromethane Ethylbenzene	200 15	ND [2.3] ND [0.5]
8260C	μg/L μg/L	Isopropylbenzene	450	ND [0.51]
8260C	μg/L	Methyl tert-butyl ether	140	ND [0.44]
8260C	µg/L	Methylene Chloride	110	ND [1.4]
8260C 8260C	μg/L ug/L	m-Xylene & p-Xylene n-Butylbenzene	190 1000	ND [0.75] ND [0.44]
8260C 8260C	μg/L μg/L	N-Propylbenzene	660	ND [0.44]

Table Notes and Data Flags are defined at the end of the table Blue shade indicates ND result has LOD that exceeds ADEC cleanup level Gray shade indicates ADEC cleanup level exceedance

			Sample ID Location ID Collection Date/Time Lab Sample ID Matrix Description	Trip Blank Trip Blank 9/23/2019 0800 580-89500-5 Other Trip Blank
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]
8260C	μg/L	o-Xylene	190	ND [0.39]
8260C	μg/L	sec-Butylbenzene	2000	ND [0.49]
8260C	μg/L	Styrene	1200	ND [1]
8260C	μg/L	t-Butylbenzene	690	ND [0.58]
8260C	μg/L	Toluene	1100	ND [0.39]
8260C	μg/L	trans-1,2-Dichloroethene	360	ND [0.39]
8260C	μg/L	Trichlorofluoromethane	5200	ND [0.63]
8260C	µg/L	Xylenes Total	190	ND [1.14]
8260C SIM	µg/L	1,1,1,2-Tetrachloroethane	5.7	ND [0.009]
8260C SIM	μg/L	1,1,2,2-Tetrachloroethane	0.76	ND [0.049]
8260C SIM	μg/L	1,1,2-Trichloroethane	0.41	ND [0.017]
8260C SIM	μg/L	1,1-Dichloroethene	280	ND [0.014]
8260C SIM	μg/L	1,2-Dibromoethane	0.075	ND [0.014]
8260C SIM	μg/L	1,2-Dichloroethane	1.7	ND [0.024]
8260C SIM	μg/L	1.4-Dichlorobenzene	4.8	ND [0.014]
8260C SIM	μg/L	2-Hexanone	38	ND [0.098]
8260C SIM	μg/L	Benzene	4.6	ND [0.009]
8260C SIM	µg/L	Bromodichloromethane	1.3	ND [0.006]
8260C SIM	μg/L	Bromoform	33	ND [0.013]
8260C SIM	μg/L	Bromomethane	7.5	ND [0.012]
8260C SIM	μg/L	Chloroform	2.2	ND [0.009]
8260C SIM	μg/L	cis-1,3-Dichloropropene	NS	ND [0.026]
8260C SIM	µg/L	Dibromochloromethane	8.7	ND [0.016]
8260C SIM	µg/L	Dibromomethane	8.3	ND [0.017]
8260C SIM	μg/L	Hexachlorobutadiene	1.4	ND [0.026]
8260C SIM	μg/L	Naphthalene	1.7	0.12 [0.013] J B
8260C SIM	μg/L	Tetrachloroethene	41	ND [0.017]
8260C SIM	μg/L	trans-1,3-Dichloropropene	NS	ND [0.027]
8260C SIM	μg/L	Trichloroethene	2.8	ND [0.009]
8260C SIM	μg/L	Vinyl chloride	0.19	ND [0.013]

Former Kobuk Feed and Fuel 2019 Groundwater Analytical Results Summary Table, 580-89500-1

Data Flag / Abbreviation	Definition
В	Analyte result is considered a high estimated value due to contamination present in the method, trip, or equipment blank. ND results are not flagged.
D	The reported value is from a dilution.
DL	Detection Limit
Н	Analyte result is considered a low estimate due to a hold time exceedance.
J	Analyte result is considered an estimated value because the level is below the laboratory LOQ but above the DL
LL	(Low Level) Analysis with lower reporting limits than standard methanol preservative analysis.
LOD	Limit of Detection
LOQ	Limit of Quantitation (equivalent to Method Reporting Limit)
M	Manual integrated compound.
ND	(Not Detected) Analyte not detected above the Method Detection Limit.
NS	(Not Stipulated) Cleanup level not stipulated by ADEC.
NA	Not Analyzed
QH, QL, QN	Analyte result is considered an estimated value biased (high, low, uncertain) due to a quality control failure.
R	Analyte result is rejected; the result is not usable. Note that "R" replaces the chemical result (no result shall be reported with an "R" flag).
RL	Reporting Limit
*	RPD of the LCS/LCSD Exceeds Control Limits

Notes

ADEC regulatory limits / cleanup levels for soil samples are the most stringent of 18 AAC 75.341 Method 2 Table B1 and B2 Cleanup Level for under 40 Inches. 18 AAC 75.341 Revison Dated February 2023. Results column consists of the results if the compound is detected above the method detection limit. Otherwise it gives the ND symbol. The number in brackets is the LOD.

Appendix D-2:

2020 Analytical Results Summary Table: 580-96236-1

Former Kobuk Feed Fuel, 2020 Analytical Groundwater Results Summary Table, 580-96236-1

		(Sample ID Location ID Collection Date/Time Lab Sample ID	Kobuk-MW1-0720 MW-1 7/22/2020 12:30:00 PM 580-96236-1	Kobuk-MW2-0720 MW-2 7/22/2020 1:45:00 PM 580-96236-2	Kobuk-MW12-0720 MW-12 7/22/2020 2:00:00 PM 580-96236-3	Trip Blank Trip Blank 7/22/2020 12:00:00 PM 580-96236-4
			Matrix Description	Water	Water Primary	Water Duplicate ov MW-2	Other Trip Blook
Mathad	Unito	Analyta	ADEC Cleanup	Primary	-		Trip Blank
Method	Units	Analyte	Level	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]
AK101	ug/L	Gasoline Range Organics (GRO)-C6-C10	2200	ND [250]	2100 [250]	2100 [250]	ND [250]
AK102	ug/L	Diesel Range Organics (DRO) (C10-C25)	1500	380 [120]	1800 [120]	1900 [120]	
8260D	ug/L	1,1,1,2-Tetrachloroethane	5.7		ND [2]	ND [2]	ND [2]
8260D	ug/L	1,1,1-Trichloroethane	8000		ND [3]	ND [3]	ND [3]
8260D	ug/L	1,1,2,2-Tetrachloroethane	0.76		ND [3]	ND [3]	ND [3]
8260D 8260D	ug/L ug/L	1,1,2-Trichloroethane 1,1-Dichloroethane	0.41 28		ND [1] ND [2]	ND [1] ND [2]	ND [1] ND [2]
8260D	ug/L	1,1-Dichloroethene	280		ND [4]	ND [4]	ND [4]
8260D	ug/L	1,1-Dichloropropene	NS		ND [3]	ND [3]	ND [3]
8260D	ug/L	1,2,3-Trichlorobenzene	7.0		ND [5]	ND [5]	ND [5]
8260D 8260D	ug/L ug/L	1,2,3-Trichloropropane 1,2,4-Trichlorobenzene	0.0075 4.0		ND [2] ND [2]	ND [2] ND [2]	ND [2] ND [2]
8260D 8260D	ug/L ug/L	1,2,4-Trimethylbenzene	4.0		ND [2] 15 [3]	ND [2] 15 [3]	ND [2] ND [3]
8260D	ug/L ug/L	1,2-Dibromo-3-Chloropropane	NS		ND [10]	ND [10]	ND [5]
8260D	ug/L	1,2-Dibromoethane	0.075		ND [2]	ND [2]	ND [2]
8260D	ug/L	1,2-Dichlorobenzene	300		ND [2]	ND [2]	ND [2]
8260D 8260D	ug/L ug/L	1,2-Dichloroethane 1,2-Dichloropropane	1.7 8.2		ND [2] QN ND [1]	0.61 [2] J QN ND [1]	ND [2] ND [1]
8260D	ug/L ug/L	1,3,5-Trimethylbenzene	60		5.5 [3]	6[3]	ND [1]
8260D	ug/L	1,3-Dichlorobenzene	300		ND [2]	ND [2]	ND [2]
8260D	ug/L	1,3-Dichloropropane	NS		ND [2]	ND [2]	ND [2]
8260D 8260D	ug/L	1,4-Dichlorobenzene 2,2-Dichloropropane	4.8		ND [4] ND [3]	ND [4] ND [3]	ND [4] ND [3]
8260D	ug/L ug/L	2-Butanone	NS 5600		ND [3] ND [20]	ND [5] ND [20]	ND [3] ND [20]
8260D	ug/L	2-Chlorotoluene	NS		ND [3]	ND [3]	ND [3]
8260D	ug/L	2-Hexanone	38		ND [20]	ND [20]	ND [20]
8260D	ug/L	4-Chlorotoluene	NS		ND [2]	ND [2]	ND [2]
8260D 8260D	ug/L ug/L	4-Isopropyltoluene 4-Methyl-2-pentanone	NS 6300		ND [3] ND [15]	ND [3] ND [15]	ND [3] ND [15]
8260D	ug/L ug/L	Acetone	14000		ND [13] ND [50]	52 [50] B	18 [50] J B
8260D	ug/L	Benzene	4.6	6.7 [3]	90 [3]	88 [3]	ND [3]
8260D	ug/L	Bromobenzene	62		ND [2]	ND [2]	ND [2]
8260D 8260D	ug/L	Bromochloromethane	NS		ND [2]	ND [2]	ND [2] ND [2]
8260D 8260D	ug/L ug/L	Bromodichloromethane Bromoform	1.3 33		ND [2] ND [3]	ND [2] ND [3]	ND [2] ND [3]
8260D	ug/L	Bromomethane	7.5		ND [6]	ND [6]	ND [6]
8260D	ug/L	Carbon disulfide	810		ND [3]	ND [3]	ND [3]
8260D	ug/L	Carbon tetrachloride	4.6		ND [3]	ND [3]	ND [3]
8260D 8260D	ug/L ug/L	Chloroethane	78 21000		ND [2] ND [5]	ND [2] ND [5]	ND [2] ND [5]
8260D	ug/L ug/L	Chloroform	2.2		ND [5]	ND [5]	ND [5]
8260D	ug/L	Chloromethane	190		ND [20] *	ND [20] *	ND [20]
8260D	ug/L	cis-1,2-Dichloroethene	36		ND [3]	ND [3]	ND [3]
8260D 8260D	ug/L ug/L	cis-1,3-Dichloropropene Dibromochloromethane	NS 8.7		ND [1] ND [2]	ND [1] ND [2]	ND [1] ND [2]
8260D 8260D	ug/L ug/L	Dibromochioromethane	8.3		ND [2] ND [2]	ND [2] ND [2]	ND [2]
8260D	ug/L ug/L	Dichlorodifluoromethane	200		ND [10] *	ND [10] *	ND [10] *
8260D	ug/L	Ethylbenzene	15	ND [3]	22 [3]	22 [3]	ND [3]
8260D	ug/L	Hexachlorobutadiene	1.4		ND [6]	ND [6]	ND [6]
8260D 8260D	ug/L ug/L	Isopropylbenzene Methyl tert-butyl ether	450 140		4.5 [2] ND [2]	4.5 [2] ND [2]	ND [2] ND [2]
8260D	ug/L ug/L	Methylene Chloride	110		ND [2]	ND [2] ND [5]	ND [2] ND [5]
8260D	ug/L ug/L	m-Xylene & p-Xylene	190	ND [3]	59 [3]	60 [3]	ND [3]
8260D	ug/L	Naphthalene	1.7		7.2 [4]	7.1 [4]	ND [4]
8260D	ug/L	n-Butylbenzene	1000		ND [3]	ND [3]	ND [3]
8260D 8260D	ug/L	N-Propylbenzene	660 190	NID [2]	4 [3]	4.5 [3]	ND [3]
8260D 8260D	ug/L ug/L	o-Xylene sec-Butylbenzene	2000	ND [2]	18 [2] 0.7 [3] J	19 [2] 0.76 [3] J	ND [2] ND [3]
8260D	ug/L ug/L	Styrene	1200		ND [5]	ND [5]	ND [5]

Former Kobuk Feed Fuel, 2020 Analytical Groundwater Results Summary Table, 580-96236-1

			Sample ID Location ID Collection Date/Time Lab Sample ID Matrix Description	Kobuk-MW1-0720 MW-1 7/22/2020 12:30:00 PM 580-96236-1 Water Primary	Kobuk-MW2-0720 MW-2 7/22/2020 1:45:00 PM 580-96236-2 Water Primary	Kobuk-MW12-0720 MW-12 7/22/2020 2:00:00 PM 580-96236-3 Water Duplicate ov MW-2	Trip Blank Trip Blank 7/22/2020 12:00:00 PM 580-96236-4 Other Trip Blank
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]
8260D	ug/L	t-Butylbenzene	690		ND [3]	ND [3]	ND [3]
8260D	ug/L	Tetrachloroethene	41		ND [3]	ND [3]	ND [3]
8260D	ug/L	Toluene	1100	ND [2]	4 [2]	4 [2]	ND [2]
8260D	ug/L	trans-1,2-Dichloroethene	360		ND [3]	ND [3]	ND [3]
8260D	ug/L	trans-1,3-Dichloropropene	NS		ND [1]	ND [1]	ND [1]
8260D	ug/L	Trichloroethene	2.8		ND [3]	ND [3]	ND [3]
8260D	ug/L	Trichlorofluoromethane	5200		ND [3]	ND [3]	ND [3]
8260D	ug/L	Vinyl chloride	0.19		ND [1]	ND [1]	ND [1]
8270E SIM	ug/L	1-Methylnaphthalene	11		0.52 [0.11]	0.48 [0.12]	
8270E SIM	ug/L	2-Methylnaphthalene	36		0.29 [0.22]	0.22 [0.23] J	
8270E SIM	ug/L	Acenaphthene	530		ND [0.11]	ND [0.12]	
8270E SIM	ug/L	Acenaphthylene	260		ND [0.056]	ND [0.058]	
8270E SIM	ug/L	Anthracene	43		ND [0.11]	ND [0.12]	
8270E SIM	ug/L	Benzo[a]anthracene	0.30		ND [0.056]	ND [0.058]	
8270E SIM	ug/L	Benzo[a]pyrene	0.25		ND [0.11]	ND [0.12]	
8270E SIM	ug/L	Benzo[b]fluoranthene	2.5		ND [0.056]	ND [0.058]	
8270E SIM	ug/L	Benzo[g,h,i]perylene	0.26		ND [0.056]	ND [0.058]	
8270E SIM	ug/L	Benzo[k]fluoranthene	0.80		ND [0.056]	ND [0.058]	
8270E SIM	ug/L	Chrysene	2.0		ND [0.11]	ND [0.12]	
8270E SIM	ug/L	Dibenz(a,h)anthracene	0.25		ND [0.11]	ND [0.12]	
8270E SIM	ug/L	Fluoranthene	260		ND [0.22]	ND [0.23]	
8270E SIM	ug/L	Fluorene	290		ND [0.11]	ND [0.12]	
8270E SIM	ug/L	Indeno[1,2,3-cd]pyrene	0.19		ND [0.056]	ND [0.058]	
8270E SIM	ug/L	Naphthalene	1.7		3.6 [0.11]	3.3 [0.12]	
8270E SIM	ug/L	Phenanthrene	170		ND [0.11]	ND [0.12]	
8270E SIM	ug/L	Pyrene	120		ND [0.11]	ND [0.12]	

Former Kobuk Feed Fuel, 2020 Analytical Groundwater Results Summary Table, 580-96236-1

Data Flag / Abbreviation	Definition
В	Analyte result is considered a high estimated value due to contamination present in the method, trip, or equipment blank. ND results are not flagged.
D	The reported value is from a dilution.
DL	Detection Limit
Н	Analyte result is considered a low estimate due to a hold time exceedance.
J	Analyte result is considered an estimated value because the level is below the laboratory LOQ but above the DL
LL	(Low Level) Analysis with lower reporting limits than standard methanol preservative analysis.
LOD	Limit of Detection
LOQ	Limit of Quantitation (equivalent to Method Reporting Limit)
М	Manual integrated compound.
ND	(Not Detected) Analyte not detected above the Method Detection Limit.
NS	(Not Stipulated) Cleanup level not stipulated by ADEC.
NA	Not Analyzed
QH, QL, QN	Analyte result is considered an estimated value biased (high, low, uncertain) due to a quality control failure.
R	Analyte result is rejected; the result is not usable. Note that "R" replaces the chemical result (no result shall be reported with an "R" flag).
RL	Reporting Limit
*	RPD of the LCS/LCSD Exceeds Control Limits

Notes

ADEC regulatory limits / cleanup levels for soil samples are the most stringent of 18 AAC 75.341 Method 2 Table B1 and B2 Cleanup Level for under 40 Inches. 18 AAC 75.341 Revison Dated February 2023. Results column consists of the results if the compound is detected above the method detection limit. Otherwise it gives the ND symbol. The number in brackets is the LOD.

Appendix D-3:

2021 Analytical Results Summary Table: 1216322-1

			Sample ID Location ID Collection Date/Time	MW1-0921 MW-1 9/24/2021 11:10 AM	MW2-0921 MW-2 9/24/2021 9:30 AM	MW12-0921 MW-2 9/24/2021 9:45 AM	Trip Blank Trip Blank 9/24/2021 8:00 AM
			Lab Sample ID Matrix	9/24/2021 11:10 AM 1216322001 Water	9/24/2021 9:30 AM 1216322002 Water	9/24/2021 9:45 AM 1216322003 Water	9/24/2021 8:00 AM 1216322004 Other
			Description	Primary	Primary	Duplicate of MW2-0921	Trip Blank
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]
AK101	ug/L	Gasoline Range Organics	2200	58.1 [45.0] J	991 [45.0]	842 [45.0]	ND [50.0]
AK102 LV	ug/L	Diesel Range Organics	1500	537 [208.0] J	1330 [200]	1290 [200]	
8270D SIM LV (PAH)	ug/L	1-Methylnaphthalene	11		0.34 [0.0150]	0.317 [0.0150]	
8270D SIM LV (PAH)	ug/L ug/L	2-Methylnaphthalene	36		0.101 [0.0150] B	0.0972 [0.0150] B	
8270D SIM LV (PAH)	ug/L	Acenaphthene	530		ND [0.0250]	ND [0.0255]	
8270D SIM LV (PAH)	ug/L	Acenaphthylene	260		ND [0.0250]	ND [0.0255]	
8270D SIM LV (PAH) 8270D SIM LV (PAH)	ug/L	Anthracene Benzo(a)Anthracene	43 0.30		ND [0.0250] ND [0.0250]	ND [0.0255] ND [0.0255]	
8270D SIM LV (PAH) 8270D SIM LV (PAH)	ug/L ug/L	Benzo[a]pyrene	0.30		ND [0.0230] ND [0.0100]	ND [0.0233] ND [0.0102]	
8270D SIM LV (PAH)	ug/L	Benzo[b]Fluoranthene	2.5		ND [0.0250]	ND [0.0255]	
8270D SIM LV (PAH)	ug/L	Benzo[g,h,i]perylene	0.26		ND [0.0250]	ND [0.0255]	
8270D SIM LV (PAH)	ug/L	Benzo[k]fluoranthene	0.80		ND [0.0250]	ND [0.0255]	
8270D SIM LV (PAH)	ug/L	Chrysene	2.0		ND [0.0250]	ND [0.0255]	
8270D SIM LV (PAH) 8270D SIM LV (PAH)	ug/L ug/L	Dibenzo[a,h]anthracene Fluoranthene	0.25 260		ND [0.0100] ND [0.0250]	ND [0.0102] ND [0.0255]	
8270D SIM LV (PAH) 8270D SIM LV (PAH)	ug/L ug/L	Fluorantiene	290		0.0200 [0.0150] J	0.0232 [0.0150] J	
8270D SIM LV (PAH)	ug/L	Indeno[1,2,3-c,d] pyrene	0.19		ND [0.0250]	ND [0.0255]	
8270D SIM LV (PAH)	ug/L	Naphthalene	1.7		2.57 [0.0310]	2.4 [0.0310]	
8270D SIM LV (PAH)	ug/L	Phenanthrene	170		ND [0.0250]	0.0292 [0.0150] J B	
8270D SIM LV (PAH)	ug/L	Pyrene	120		ND [0.0250]	ND [0.0255]	
SW8260D	ug/L	1,1,1,2-Tetrachloroethane	5.7		ND [0.250]	ND [0.250]	ND [0.250]
SW8260D	ug/L	1,1,1-Trichloroethane	8000		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	1,1,2,2-Tetrachloroethane	0.76		ND [0.250]	ND [0.250]	ND [0.250]
SW8260D	ug/L	1,1,2-Trichloroethane	0.41		ND [0.200]	ND [0.200]	ND [0.200]
SW8260D	ug/L	1,1-Dichloroethane	28		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D SW8260D	ug/L ug/L	1,1-Dichloroethene 1,1-Dichloropropene	280 NS		ND [0.500] ND [0.500]	ND [0.500] ND [0.500]	ND [0.500] ND [0.500]
SW8260D	ug/L ug/L	1,2,3-Trichlorobenzene	7.0		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	1,2,3-Trichloropropane	0.0075		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	1,2,4-Trichlorobenzene	4.0		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	1,2,4-Trimethylbenzene	56		9.81 [0.310]	10 [0.310]	ND [0.500]
SW8260D SW8260D	ug/L	1,2-Dibromo-3-chloropropane 1,2-Dibromoethane	NS 0.075		ND [5.00] ND [0.0375]	ND [5.00] ND [0.0375]	ND [5.00] ND [0.0375]
SW8260D SW8260D	ug/L ug/L	1,2-Dioromoetnane	300		ND [0.0373] ND [0.500]	ND [0.0375] ND [0.500]	ND [0.0375] ND [0.500]
SW8260D	ug/L ug/L	1,2-Dichloroethane	1.7		ND [0.250]	ND [0.250]	ND [0.250]
SW8260D	ug/L	1,2-Dichloropropane	8.2		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	1,3,5-Trimethylbenzene	60		2.02 [0.310]	2.04 [0.310]	ND [0.500]
SW8260D	ug/L	1,3-Dichlorobenzene	300		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D SW8260D	ug/L ug/L	1,3-Dichloropropane 1,4-Dichlorobenzene	NS 4.8		ND [0.250] ND [0.250]	ND [0.250] ND [0.250]	ND [0.250] ND [0.250]
SW8260D	ug/L ug/L	2,2-Dichloropropane	4.8 NS		ND [0.230]	ND [0.230] ND [0.500]	ND [0.230]
SW8260D	ug/L ug/L	2-Butanone (MEK)	5600		ND [5.00]	ND [5.00]	ND [5.00]
SW8260D	ug/L	2-Chlorotoluene	NS		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	2-Hexanone	38		ND [5.00]	ND [5.00]	ND [5.00]
SW8260D	ug/L	4-Chlorotoluene	NS		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D SW8260D	ug/L ug/L	4-Isopropyltoluene 4-Methyl-2-pentanone (MIBK)	NS 6300		0.450 [0.310] J ND [5.00]	0.470 [0.310] J ND [5.00]	ND [0.500] ND [5.00]
SW8260D	ug/L ug/L	Benzene	4.6	10.6 [0.120]	31.9 [0.120]	31 [0.120]	ND [5:00] ND [0.200]
SW8260D	ug/L	Bromobenzene	62		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Bromochloromethane	NS		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Bromodichloromethane	1.3		ND [0.250]	ND [0.250]	ND [0.250]
SW8260D	ug/L	Bromoform	33		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D SW8260D	ug/L	Bromomethane Carbon disulfide	7.5 810		ND [3.00] ND [5.00]	ND [3.00] ND [5.00]	ND [3.00] ND [5.00]
SW8260D SW8260D	ug/L ug/L	Carbon disulfide Carbon tetrachloride	4.6		ND [5.00] ND [0.500]	ND [5.00] ND [0.500]	ND [5.00] ND [0.500]
SW8260D	ug/L ug/L	Chlorobenzene	78		ND [0.250]	ND [0.500]	ND [0.250]
SW8260D	ug/L	Chloroethane	21000		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Chloroform	2.2		ND [0.500]	ND [0.500]	ND [0.500]

Former Kobuk Feed and Fuel, 2021 Analytical Groundwater Results Summary Table, 1216322

Table Notes and Data Flags are defined at the end of the table Blue shade indicates ND result has LOD that exceeds ADEC cleanup level Gray shade indicates ADEC cleanup level exceedance

			Sample ID Location ID	MW1-0921 MW-1	MW2-0921 MW-2	MW12-0921 MW-2	Trip Blank Trip Blank
		С	ollection Date/Time	9/24/2021 11:10 AM	9/24/2021 9:30 AM	9/24/2021 9:45 AM	9/24/2021 8:00 AM
			Lab Sample ID	1216322001	1216322002	1216322003	1216322004
			Matrix	Water	Water	Water	Other
			Description	Primary	Primary	Duplicate of MW2-0921	Trip Blank
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]
SW8260D	ug/L	Chloromethane	190		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	cis-1,2-Dichloroethene	36		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	cis-1,3-Dichloropropene	NS		ND [0.250]	ND [0.250]	ND [0.250]
SW8260D	ug/L	Dibromochloromethane	8.7		ND [0.250]	ND [0.250]	ND [0.250]
SW8260D	ug/L	Dibromomethane	8.3		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Dichlorodifluoromethane	200		0.460 [0.310] J	0.490 [0.310] J	ND [0.500]
SW8260D	ug/L	Ethylbenzene	15	ND [0.500]	9.21 [0.310]	9.21 [0.310]	ND [0.500]
SW8260D	ug/L	Freon-113	10000		ND [5.00]	ND [5.00]	ND [5.00]
SW8260D	ug/L	Hexachlorobutadiene	1.4		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Isopropylbenzene (Cumene)	450		3 [0.310]	3.17 [0.310]	ND [0.500]
SW8260D	ug/L	Methylene chloride	110		ND [5.00]	ND [5.00]	ND [5.00]
SW8260D	ug/L	Methyl-t-butyl ether	140		ND [5.00]	ND [5.00]	ND [5.00]
SW8260D	ug/L	Naphthalene	1.7		6.36 [0.310]	5.84 [0.310]	ND [0.500]
SW8260D	ug/L	n-Butylbenzene	1000		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	n-Propylbenzene	660		2.8 [0.310]	3.06 [0.310]	ND [0.500]
SW8260D	ug/L	o-Xylene	190	ND [0.500]	10.3 [0.310]	10.6 [0.310]	ND [0.500]
SW8260D	ug/L	P & M -Xylene	190	ND [1.00]	40.9 [0.620]	41.1 [0.620]	ND [1.00]
SW8260D	ug/L	sec-Butylbenzene	2000		0.540 [0.310] J	0.580 [0.310] J	ND [0.500]
SW8260D	ug/L	Styrene	1200		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	tert-Butylbenzene	690		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Tetrachloroethene	41		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Toluene	1100	ND [0.500]	1.75 [0.310]	1.83 [0.310]	ND [0.500]
SW8260D	ug/L	trans-1,2-Dichloroethene	360		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	trans-1,3-Dichloropropene	NS		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Trichloroethene	2.8		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Trichlorofluoromethane	5200		ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	ug/L	Vinyl acetate	410		ND [5.00]	ND [5.00]	ND [5.00]
SW8260D	ug/L	Vinyl chloride	0.19		ND [0.0750]	ND [0.0750]	ND [0.0750]
SW8260D	ug/L	Xylenes (total)	190	ND [1.50]	51.2 [1.00]	51.7 [1.00]	ND [1.50]

Former Kobuk Feed and Fuel, 2021 Analytical Groundwater Results Summary Table, 1216322

Former Kobuk Feed and Fuel, 2021 Analytical Groundwater Results Summary Table, 1216322

Data Flag / Abbreviation	Definition
В	Analyte result is considered a high estimated value due to contamination present in the method, trip, or equipment blank. ND results are not flagged.
D	The reported value is from a dilution.
DL	Detection Limit
Н	Analyte result is considered a low estimate due to a hold time exceedance.
J	Analyte result is considered an estimated value because the level is below the laboratory LOQ but above the DL
LL	(Low Level) Analysis with lower reporting limits than standard methanol preservative analysis.
LOD	Limit of Detection
LOQ	Limit of Quantitation (equivalent to Method Reporting Limit)
M	Manual integrated compound.
ND	(Not Detected) Analyte not detected above the Method Detection Limit.
NS	(Not Stipulated) Cleanup level not stipulated by ADEC.
NA	Not Analyzed
QH, QL, QN	Analyte result is considered an estimated value biased (high, low, uncertain) due to a quality control failure.
R	Analyte result is rejected; the result is not usable. Note that "R" replaces the chemical result (no result shall be reported with an "R" flag).
RL	Reporting Limit
*	RPD of the LCS/LCSD Exceeds Control Limits

Notes

ADEC regulatory limits / cleanup levels for soil samples are the most stringent of 18 AAC 75.341 Method 2 Table B1 and B2 Cleanup Level for under 40 Inches. 18 AAC 75.341 Revison Dated February 2023. Results column consists of the results if the compound is detected above the method detection limit. Otherwise it gives the ND symbol. The number in brackets is the LOD.

Appendix D-4:

2022 Analytical Results Summary Table: 1225201-1

			Sample ID Location ID Collection Date/Time Lab Sample ID Matrix Description	MW1-0822 MW1-0822 8/26/2022 3:30 PM 1225201001 Water Field Sample	MW2-0822 MW2-0822 8/26/2022 5:00 PM 1225201002 Water Field Sample	MW12-0822 MW12-0822 8/26/2022 5:15 PM 1225201003 Water Duplicate sample to MW2
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]
AK101	ug/L	Gasoline Range Organics (GRO)-C6-C10	2200	84.6 [50.0] J	1780 [50.0] QH	1750 [50.0]
AK102	ug/L	Diesel Range Organics (DRO) (C10-C25)	1500	349 [294] J QL	1870 [294] QL	
8270D SIM LV (PAH)	ug/L	1-Methylnaphthalene	11	ND [0.0261]	0.474 [0.0255] B	0.447 [0.0261] B
8270D SIM LV (PAH)	ug/L	2-Methylnaphthalene	36	0.0183 [0.0261] J B	0.203 [0.0255] B	0.184 [0.0261] B
8270D SIM LV (PAH)	ug/L	Acenaphthene	530	ND [0.0261]	0.0475 [0.0255] J	0.0376 [0.0261] J
8270D SIM LV (PAH)	ug/L	Acenaphthylene	260	ND [0.0261]	ND [0.0255]	ND [0.0261]
8270D SIM LV (PAH)	ug/L	Anthracene	43	ND [0.0261]	ND [0.0255]	ND [0.0261]
8270D SIM LV (PAH)	ug/L	Benzo(a)Anthracene	0.3	ND [0.0261]	ND [0.0255]	ND [0.0261]
8270D SIM LV (PAH)	ug/L	Benzo[a]pyrene	0.25	ND [0.0104]	ND [0.0102]	ND [0.0104]
8270D SIM LV (PAH)	ug/L	Benzo[b]Fluoranthene	2.5	ND [0.0261]	ND [0.0255]	ND [0.0261]
8270D SIM LV (PAH)	ug/L	Benzo[g,h,i]perylene	0.26	ND [0.0261]	ND [0.0255]	ND [0.0261]
8270D SIM LV (PAH)	ug/L	Benzo[k]fluoranthene	0.8	ND [0.0261]	ND [0.0255]	ND [0.0261]
8270D SIM LV (PAH)	ug/L	Chrysene	2	ND [0.0261]	ND [0.0255]	ND [0.0261]
8270D SIM LV (PAH)	ug/L	Dibenzo[a,h]anthracene	0.25	ND [0.0104]	ND [0.0102]	ND [0.0104]
8270D SIM LV (PAH)	ug/L	Fluoranthene	260	ND [0.0261]	ND [0.0255]	ND [0.0261]
8270D SIM LV (PAH)	ug/L	Fluorene	290	ND [0.0261]	0.0313 [0.0255] J	0.0243 [0.0261] J
8270D SIM LV (PAH)	ug/L	Indeno[1,2,3-c,d] pyrene	0.19	ND [0.0261]	ND [0.0255]	ND [0.0261]
8270D SIM LV (PAH)	ug/L	Naphthalene	1.7	0.0386 [0.0521] J	3.49 [0.0510]	3.2 [0.0521]
8270D SIM LV (PAH)	ug/L	Phenanthrene	170	0.0357 [0.0521] J	0.0580 [0.0510] J	ND [0.0520]
8270D SIM LV (PAH)	ug/L	Pyrene	120	ND [0.0261]	ND [0.0255]	ND [0.0261]
	-					
SW8260D	ug/L	1,1,1,2-Tetrachloroethane	5.7		ND [0.250]	ND [0.250]
SW8260D	ug/L	1,1,1-Trichloroethane	8000		ND [0.500]	ND [0.500]
SW8260D	ug/L	1,1,2,2-Tetrachloroethane	0.76		ND [0.250]	ND [0.250]
SW8260D	ug/L	1,1,2-Trichloroethane	0.41		ND [0.200]	ND [0.200]
SW8260D	ug/L	1,1-Dichloroethane	28		ND [0.500]	ND [0.500]
SW8260D	ug/L	1,1-Dichloroethene	280		ND [0.500]	ND [0.500]
SW8260D	ug/L	1,1-Dichloropropene	NS 7		ND [0.500]	ND [0.500]
SW8260D SW8260D	ug/L	1,2,3-Trichlorobenzene	,		ND [0.500]	ND [0.500]
SW8260D SW8260D	ug/L	1,2,3-Trichloropropane	0.0075		ND [0.500]	ND [0.500]
SW8260D SW8260D	ug/L	1,2,4-Trichlorobenzene			ND [0.500]	ND [0.500]
SW8260D SW8260D	ug/L	1,2,4-Trimethylbenzene 1,2-Dibromo-3-chloropropane	56		28.6 [5.0]	21.4 [0.500] ND [5.00]
SW8260D SW8260D	ug/L	1,2-Dibromo-3-chloropropane	NS 0.075		ND [5.00] ND [0.0375]	ND [5.00] ND [0.0375]
SW8260D SW8260D	ug/L ug/L	/	300		ND [0.0375] ND [0.500]	ND [0.0375] ND [0.500]
SW8260D SW8260D	U	1,2-Dichlorobenzene 1.2-Dichloroethane	300		ND [0.500] ND [0.250]	ND [0.500] ND [0.250]
SW8260D SW8260D	ug/L ug/L	,	8.2		ND [0.250] ND [0.500]	ND [0.250] ND [0.500]
SW8260D SW8260D	ug/L ug/L	1,2-Dichloropropane 1,3,5-Trimethylbenzene	<u>8.2</u> 60		3.38 [0.50]	2.81 [0.500]
SW8260D SW8260D	ug/L ug/L	1,3,5-1 rimethyloenzene	300		ND [0.500]	ND [0.500]
SW8260D SW8260D	ug/L ug/L	1,3-Dichloropropane	300 NS		ND [0.500] ND [0.250]	ND [0.500] ND [0.250]
SW8260D SW8260D	ug/L ug/L	1,3-Dichloropropane	4.8		ND [0.250] ND [0.250]	ND [0.250] ND [0.250]
SW8260D SW8260D	ug/L ug/L	2,2-Dichloropropane	4.8 NS		ND [0.250]	ND [0.230] ND [0.500]
SW8260D SW8260D	ug/L ug/L	2-Butanone (MEK)	5600		ND [0.500] ND [5.00]	ND [0.500] ND [5.00]
SW8260D SW8260D	ug/L ug/L	2-Butanone (MEK) 2-Chlorotoluene	NS		ND [5.00] ND [0.500]	ND [5.00] ND [0.500]
		z-cinorotomene	INO		IND 10.2001	

			Sample ID Location ID Collection Date/Time Lab Sample ID Matrix Description	MW1-0822 MW1-0822 8/26/2022 3:30 PM 1225201001 Water Field Sample	MW2-0822 MW2-0822 8/26/2022 5:00 PM 1225201002 Water Field Sample	MW12-0822 MW12-0822 8/26/2022 5:15 PM 1225201003 Water Duplicate sample to MW2
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]	Analytical Results [LOD]	Analytical Results [LOD]
SW8260D	ug/L	4-Chlorotoluene	NS		ND [0.500]	ND [0.500]
SW8260D	ug/L	4-Isopropyltoluene	NS		ND [0.500]	ND [0.500]
SW8260D	ug/L	4-Methyl-2-pentanone (MIBK)	6300		ND [5.00]	ND [5.00]
SW8260D	ug/L	Benzene	4.6	15.3 [0.200]	26.2 [0.200]	30.2 [0.200]
SW8260D	ug/L	Bromobenzene	62		ND [0.500]	ND [0.500]
SW8260D	ug/L	Bromochloromethane	NS		ND [0.500]	ND [0.500]
SW8260D	ug/L	Bromodichloromethane	1.3		ND [0.250]	ND [0.250]
SW8260D	ug/L	Bromoform	33		ND [0.500]	ND [0.500]
SW8260D	ug/L	Bromomethane	7.5		ND [3.00]	ND [3.00]
SW8260D	ug/L	Carbon disulfide	810		ND [5.00]	ND [5.00]
SW8260D	ug/L	Carbon tetrachloride	4.6		ND [0.500]	ND [0.500]
SW8260D	ug/L	Chlorobenzene	78		ND [0.250]	ND [0.250]
SW8260D	ug/L	Chloroethane	21000		ND [0.500]	ND [0.500]
SW8260D	ug/L	Chloroform	2.2		ND [0.500]	ND [0.500]
SW8260D	ug/L	Chloromethane	190		1.04 [0.500] QN	ND [0.500] QN
SW8260D	ug/L	Dibromochloromethane	8.7		ND [0.250]	ND [0.250]
SW8260D	ug/L	Dibromomethane	8.3		ND [0.500]	ND [0.500]
SW8260D	ug/L	Dichlorodifluoromethane	200		0.658 [0.500] J	0.538 [0.500] J
SW8260D	ug/L	Ethylbenzene	15	ND [0.500]	12.1 [0.500]	10.2 [0.500]
SW8260D	ug/L	Freon-113	10000		ND [5.00]	ND [5.00]
SW8260D	ug/L	Hexachlorobutadiene	1.4		ND [0.500]	ND [0.500]
SW8260D	ug/L	Isopropylbenzene (Cumene)	450		7.92 [0.500]	6.18 [0.500]
SW8260D	ug/L	Methyl-t-butyl ether	140		ND [5.00]	ND [5.00]
SW8260D	ug/L	Methylene chloride	110		ND [5.00]	ND [5.00]
SW8260D	ug/L	Naphthalene	1.7		1.40 [0.500] QN	4.3 [0.500] QN
SW8260D	ug/L	P & M -Xylene	190	ND [1.00]	78.2 [1.00]	66.3 [1.00]
SW8260D	ug/L	Styrene	1200		ND [0.500]	ND [0.500]
SW8260D	ug/L	Tetrachloroethene	41		ND [0.500]	ND [0.500]
SW8260D	ug/L	Toluene	1100	ND [0.500]	3.18 0.500]	3.30 [0.500]
SW8260D	ug/L	Trichloroethene	2.8		ND [0.500]	ND [0.500]
SW8260D	ug/L	Trichlorofluoromethane	5200		ND [0.500]	ND [0.500]
SW8260D	ug/L	Vinyl acetate	410		ND [5.00]	ND [5.00]
SW8260D	ug/L	Vinyl chloride	0.19		ND [0.0750]	ND [0.0750]
SW8260D	ug/L	Xylenes (total)	190	ND [1.50]	116 [1.50]	96.4 [1.50]
SW8260D	ug/L	cis-1,2-Dichloroethene	36		ND [0.500]	ND [0.500]
SW8260D	ug/L	cis-1,3-Dichloropropene	NS		ND [0.250]	ND [0.250]
SW8260D	ug/L	n-Butylbenzene	1000		0.836 [0.500] J	0.662 [0.500] J
SW8260D	ug/L	n-Propylbenzene	660		9.77 [0.500] QN	6.84 [0.500] QN
SW8260D	ug/L	o-Xylene	190	ND [0.500]	37.6 [0.500]	30.1 [0.500]
SW8260D	ug/L	sec-Butylbenzene	2000		1.92 [0.500] QN	1.36 [0.500] QN
SW8260D	ug/L	tert-Butylbenzene	690		ND [0.500]	ND [0.500]
SW8260D	ug/L	trans-1,2-Dichloroethene	360		ND [0.500]	ND [0.500]
SW8260D	ug/L	trans-1,3-Dichloropropene	NS		ND [0.500]	ND [0.500]

Method Units Analytic AbBC Cleanup Level Analytical Results [LOD] Analytical Results [LOD] AK101 ug1. Gasoline Range Organics (GRO)-CG-C10 2200 459 [50.0] J ND [0.0500] 270D SIM LV (PAH) ug1. Instructure of a processing of a procesing of a processing of a pro				Sample ID Location ID Collection Date/Time Lab Sample ID Matrix Description	MW3-0822 MW3-0822 8/26/2022 6:00 PM 1225201004 Water Field Sample	Trip Blank Trip Blank 8/26/2022 8:00 AM 1225201005 Other Trip Blank
AK102 1021 Diesel Range Organics (DRO) (C10-C25) 1500 2270 [294] QL 100007 8270D SIM LV (PAH) ugL 1 1 129 0.0278] B 100007 8270D SIM LV (PAH) ugL 2. Methylnaphthalene 36 116 [1000078] B 1000078] 8270D SIM LV (PAH) ugL Accempthilene 200 ND [0.0278] 1000078] 82700 SIM LV (PAH) ugL Accempthilene 200 ND [0.0278] 1000078] 82700 SIM LV (PAH) ugL Benzo(a)Antracene 0.3 ND [0.0278] 1000078] 82700 SIM LV (PAH) ugL Benzo(a)Pyrene 2.5 ND [0.0278] 1000078] 82700 SIM LV (PAH) ugL Benzo(b)Pirone 0.25 ND [0.0278] 1000278] 82700 SIM LV (PAH) ugL Diteorof(c) A)Jercylene 0.25 ND [0.0278] 1000278] 82700 SIM LV (PAH) ugL Diteorof(c) A)Jercylene 0.25 ND [0.0278] 1000278] 82700 SIM LV (PAH) ugL Diteorof(c) A)Jercylene 0.25 ND [0.0278] 100027	Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]	Analytical Results [LOD]
S2700 SIM LV (PAH) ugL 1-Methylauphthalene 11 L79 0.0278] B 82700 SIM LV (PAH) ugL 2-Methylauphthalene 36 L165 (0.0278] 82700 SIM LV (PAH) ugL Acenaphthylene 260 ND [0.0278] 82700 SIM LV (PAH) ugL Acenaphthylene 260 ND [0.0278] 82700 SIM LV (PAH) ugL Benzoi().Antracene 0.3 ND [0.0278] 82700 SIM LV (PAH) ugL Benzoi().Antracene 0.3 ND [0.0278] 82700 SIM LV (PAH) ugL Benzoi().Antracene 0.25 ND [0.0278] 82700 SIM LV (PAH) ugL Benzoi().Antracene 0.26 ND [0.0278] 82700 SIM LV (PAH) ugL Benzoi().Antracene 0.26 ND [0.0278] 82700 SIM LV (PAH) ugL Dibenzi().Antracene 0.25 ND [0.0278] 82700 SIM LV (PAH) ugL Dibenzi().Antracene 0.26 ND [0.0278] 82700 SIM LV (PAH) ugL Dibenzi().Antracene 0.25 ND [0.0278] 82700 SIM LV (PAH) ugL Dibenzi().Antrace	AK101	ug/L	Gasoline Range Organics (GRO)-C6-C10	2200	45.9 [50.0] J	ND [0.0500]
3270D SIM LV (PAB) ug1. 2-Methylanphthalene 36 1.65 [0.0278] B 3270D SIM LV (PAB) ug1. Accmaphthylene 260 ND [0.0278] 3270D SIM LV (PAB) ug1. Accmaphthylene 260 ND [0.0278] 3270D SIM LV (PAB) ug1. Accmaphthylene 0.3 ND [0.0278] 3270D SIM LV (PAB) ug1. Benzolajprone 0.25 ND [0.0278] 3270D SIM LV (PAB) ug1. Benzolajprone 0.25 ND [0.0278] 3270D SIM LV (PAB) ug1. Benzolajprone 0.26 ND [0.0278] 3270D SIM LV (PAB) ug1. Benzolajprone 0.26 ND [0.0278] 3270D SIM LV (PAB) ug1. Chrysene 2 ND [0.0278] 3270D SIM LV (PAB) ug1. Floorene 260 ND [0.0278] 3270D SIM LV (PAB) ug1. Floorene 200 0.14 [0.0278] 3270D SIM LV (PAB) ug1. Floorene 200 0.14 [0.278] 3270D SIM LV (PAB) ug1. Prene 100 0.0556] <	AK102	ug/L	Diesel Range Organics (DRO) (C10-C25)	1500	2570 [294] QL	
3270D SIM LV (PAB) ug1. 2-Methylanphthalene 36 1.65 [0.0278] B 3270D SIM LV (PAB) ug1. Accmaphthylene 260 ND [0.0278] 3270D SIM LV (PAB) ug1. Accmaphthylene 260 ND [0.0278] 3270D SIM LV (PAB) ug1. Accmaphthylene 0.3 ND [0.0278] 3270D SIM LV (PAB) ug1. Benzolajprone 0.25 ND [0.0278] 3270D SIM LV (PAB) ug1. Benzolajprone 0.25 ND [0.0278] 3270D SIM LV (PAB) ug1. Benzolajprone 0.26 ND [0.0278] 3270D SIM LV (PAB) ug1. Benzolajprone 0.26 ND [0.0278] 3270D SIM LV (PAB) ug1. Chrysene 2 ND [0.0278] 3270D SIM LV (PAB) ug1. Floorene 260 ND [0.0278] 3270D SIM LV (PAB) ug1. Floorene 200 0.14 [0.0278] 3270D SIM LV (PAB) ug1. Floorene 200 0.14 [0.278] 3270D SIM LV (PAB) ug1. Prene 100 0.0556] <	8270D SIM I V (PAH)	ng/I	1 Methylnanhthalene	11	1 70 0 02781 B	
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SW8260D ug/L 2-Hexanone 38 ND [5.00] ND [5.00]	SW8260D SW8260D		2-Chlorotoluene 2-Hexanone		ND [0.500] ND [5.00]	ND [0.500] ND [5.00]

			Sample ID Location ID Collection Date/Time Lab Sample ID	MW3-0822 MW3-0822 8/26/2022 6:00 PM 1225201004	Trip Blank Trip Blank 8/26/2022 8:00 AM 1225201005
			Lab Sample ID Matrix	Water	Other
			Description	Field Sample	Trip Blank
			Description	Field Sample	
Method	Units	Analyte	ADEC Cleanup Level	Analytical Results [LOD]	Analytical Results [LOD]
SW8260D	ug/L	4-Chlorotoluene	NS	ND [0.500]	ND [0.500]
SW8260D	ug/L	4-Isopropyltoluene	NS	0.334 [0.500] J	ND [0.500]
SW8260D	ug/L	4-Methyl-2-pentanone (MIBK)	6300	ND [5.00]	ND [5.00]
SW8260D	ug/L	Benzene	4.6	ND [0.200]	ND [0.200]
SW8260D	ug/L	Bromobenzene	62	ND [0.500]	ND [0.500]
SW8260D	ug/L	Bromochloromethane	NS	ND [0.500]	ND [0.500]
SW8260D	ug/L	Bromodichloromethane	1.3	ND [0.250]	ND [0.250]
SW8260D	ug/L	Bromoform	33	ND [0.500]	ND [0.500]
SW8260D	ug/L	Bromomethane	7.5	ND [3.00]	ND [3.00]
SW8260D	ug/L	Carbon disulfide	810	ND [5.00]	ND [5.00]
SW8260D	ug/L	Carbon tetrachloride	4.6	ND [0.500]	ND [0.500]
SW8260D	ug/L	Chlorobenzene	78	ND [0.250]	ND [0.250]
SW8260D	ug/L	Chloroethane	21000	ND [0.500]	ND [0.500]
SW8260D	ug/L	Chloroform	2.2	ND [0.500]	ND [0.500]
SW8260D	ug/L	Chloromethane	190	ND [0.500]	ND [0.500]
SW8260D	ug/L	Dibromochloromethane	8.7	ND [0.250]	ND [0.250]
SW8260D	ug/L	Dibromomethane	8.3	ND [0.500]	ND [0.500]
SW8260D	ug/L	Dichlorodifluoromethane	200	ND [0.500]	ND [0.500]
SW8260D	ug/L	Ethylbenzene	15	0.659 [0.500] J	ND [0.500]
SW8260D	ug/L	Freon-113	10000	ND [5.00]	ND [5.00]
SW8260D	ug/L	Hexachlorobutadiene	1.4	ND [0.500]	ND [0.500]
SW8260D	ug/L	Isopropylbenzene (Cumene)	450	0.438 [0.500] J	ND [0.500]
SW8260D	ug/L	Methyl-t-butyl ether	140	ND [5.00]	ND [5.00]
SW8260D	ug/L	Methylene chloride	110	ND [5.00]	ND [5.00]
SW8260D	ug/L	Naphthalene	1.7	4.2 [0.500]	ND [0.500]
SW8260D	ug/L	P & M -Xylene	190	4.05 [1.00]	ND [1.00]
SW8260D	ug/L	Styrene	1200	ND [0.500]	ND [0.500]
SW8260D	ug/L	Tetrachloroethene	41	ND [0.500]	ND [0.500]
SW8260D	ug/L ug/L	Toluene	1100	ND [0.500]	ND [0.500]
SW8260D	ug/L ug/L	Trichloroethene	2.8	ND [0.500]	ND [0.500]
SW8260D	ug/L ug/L	Trichlorofluoromethane	5200	ND [0.500]	ND [0.500]
SW8260D	ug/L ug/L	Vinyl acetate	410	ND [0.300]	ND [0.300]
SW8260D	ug/L ug/L	Vinyl acetate Vinyl chloride	0.19	ND [3.00] ND [0.0750]	ND [0.0750]
SW8260D	ug/L ug/L	Xylenes (total)	190	6.09 [1.50]	ND [1.50]
SW8260D SW8260D	5	cis-1.2-Dichloroethene	36	ND [0.500]	ND [1.50] ND [0.500]
SW8260D SW8260D	ug/L		36 NS		ND [0.500] ND [0.250]
SW8260D SW8260D	ug/L	cis-1,3-Dichloropropene n-Butylbenzene	1000	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]
	ug/L				
SW8260D	ug/L	n-Propylbenzene	660	0.516 [0.500] J	ND [0.500]
SW8260D	ug/L	o-Xylene	190	2.04 [0.500]	ND [0.500]
SW8260D	ug/L	sec-Butylbenzene	2000	ND [0.500]	ND [0.500]
SW8260D	ug/L	tert-Butylbenzene	690	ND [0.500]	ND [0.500]
SW8260D	ug/L	trans-1,2-Dichloroethene	360	ND [0.500]	ND [0.500]
SW8260D	ug/L	trans-1,3-Dichloropropene	NS	ND [0.500]	ND [0.500]

Former Kobuk Feed and Fuel, 2022 Analytical Groundwater Results Summary Table, 1225201

Data Flag / Abbreviation	Definition
В	Analyte result is considered a high estimated value due to contamination present in the method, trip, or equipment blank. ND results are not flagged.
D	The reported value is from a dilution.
DL	Detection Limit
Н	Analyte result is considered a low estimate due to a hold time exceedance.
J	Analyte result is considered an estimated value because the level is below the laboratory LOQ but above the DL
LL	(Low Level) Analysis with lower reporting limits than standard methanol preservative analysis.
LOD	Limit of Detection
LOQ	Limit of Quantitation (equivalent to Method Reporting Limit)
М	Manual integrated compound.
ND	(Not Detected) Analyte not detected above the Method Detection Limit.
NS	(Not Stipulated) Cleanup level not stipulated by ADEC.
NA	Not Analyzed
QH, QL, QN	Analyte result is considered an estimated value biased (high, low, uncertain) due to a quality control failure.
R	Analyte result is rejected; the result is not usable. Note that "R" replaces the chemical result (no result shall be reported with an "R" flag).
RL	Reporting Limit
*	RPD of the LCS/LCSD Exceeds Control Limits

Notes

ADEC regulatory limits / cleanup levels for soil samples are the most stringent of 18 AAC 75.341 Method 2 Table B1 and B2 Cleanup Level for under 40 Inches. 18 AAC 75.341 Revison Dated February 2023. Results column consists of the results if the compound is detected above the method detection limit. Otherwise it gives the ND symbol. The number in brackets is the LOD.

Appendix D-5:

Historical Analytical Results Summary Tables

MW1 Historical Results

Sample Location	Sample ID	Date Sampled		EPA Method 8	021B or 8260B		Alaska Method AK 101	Alaska Method AK 102
			Benzene in µg/L*	Toluene in µg/L*	Ethylbenzene in µg/L*	Total xylenes in in μg/L*	GRO in µg/L*	DRO in µg/L*
	MW1-K- 1008	10/22/2008	ND	ND	ND	ND	ND	ND
	MW1-K- 0809	8/20/2009	ND	ND	ND	ND	N/A	480
	MW1-911	9/14/2011	1.24	ND	ND	ND	ND	ND
	MW1-1012	10/17/2012	1.77	ND	ND	ND	ND	ND
MW-1	MW1-K- 0713	7/22/2013	0.772	ND	ND	ND	ND	ND
IVI VV - I	MW1-K- 0814	8/13/2014	ND	ND	ND	ND	68 B	38 B
	MW1-K- 0915	9/22/2015	3.92	ND	5.20 J	2.23 J	40.0 J	439 J
	MW1-1016	10/25/2016	1.69	ND	ND	ND	ND	283
	MW1-0817	8/16/2017	ND	ND	ND	ND	ND	270
	MW1-718	7/20/2018	ND [3.0]	ND [2.0]	ND [3.0]	ND [5.0]	100 J QH	ND [250]
	Kobuk- MW1-919	9/23/2019	ND [0.53]	ND [0.39]	ND [0.5]	ND [1.14]	ND [100]	ND [9.8]
	Kobuk-MW- 0720	7/22/2020	6.7 [3]	ND [2]	ND [3]	ND [5.0]	ND [250]	380 [120]
	MW1-0921	9/24/2021	10.6 [0.120]	ND [0.500]	ND [0.500]	ND [1.5]	58.1 [45.0] J	537 [208.0] J
	MW1-0822	8/26/2022	15.3 [0.200]	ND [0.500]	ND [0.500]	ND [1.5]	84.6 [50.0] J	349 [294] J QL
ADE	EC Cleanup Lev	el	4.6	1100	15	190	2200	1500

MW-2 Historical Results

Method	Analyte	ADEC CULs (µg/L)	MW2-K- 1008 (2008)	DUP-K-1008 (2008)	MW2-K- 0809 (2009)	MW2-911 (2011)	DUP1-911 (2011)	MW2- MW2-K 1012 0713 (2012) (2013)	MW2-K- 0814 (2014)	MW2-K- 0915 (2015)	MW2- 1016 (2016)	MW2- 0817 (2017)	DUP- 0817 (2017)	MW2-718 Kobuk-MW2-919 (2018) (2019)	Kobuk-MW12-919 (2019)	Kobuk-MW2-0720 (2020)	Kobuk-MW12-0720 (2020)	MW2-0921 (2021)	MW12-0921 (2021)	MW2-0822 (2022)	MW12-0822 (2022)
AK 101 AK 102	GRO DRO	2200	5410 1310	5020 1670	N/A 460	1930 444	2160 549	2830 1500 631 859	2200 B 1200 B		656 2750	840 J 940		790 H 360 [100] 460 QN 360 [9.8]	210 [100] J 380 [100]	2100 [250] 1800 [120]	2100 [250] 1900 [120]	991 [45.0] 1330 [200]	842 [45.0] 1290 [200]	1780 [50.0] QH 1870 [294] QL	1750 [50.0]
EPA 8270D SIM	1-Methylnaphthalene	11												0.62 [0.023]	0.56 [0.023]	0.52 [0.11]	0.48 [0.12]	0.34 [0.0150]	0.317 [0.0150]	0.474 [0.0255] B	0.447 [0.0261] B
EPA 8270D SIM EPA 8270D SIM	2-Methylnaphthalene Acenaphthene	36 530								_				0.24 [0.044] 0.022 [0.022] J	0.19 [0.044] ND [0.022]	0.29 [0.22] ND [0.11]	0.22 [0.23] J ND [0.12]	0.101 [0.0150] B	0.0972 [0.0150] B ND [0.0255]	0.203 [0.0255] B 0.0475 [0.0255] J	0.184 [0.0261] B 0.0376 [0.0261] J
EPA 8270D SIM	Acenaphthylene	260												ND [0.016]	ND [0.016]	ND [0.056]	ND [0.058]	ND [0.0250]	ND [0.0255]	ND [0.0255]	ND [0.0261]
EPA 8270D SIM EPA 8270D SIM	Anthracene Benzo[a]anthracene	43 0.30												ND [0.025] ND [0.012]	ND [0.025] ND [0.012]	ND [0.11] ND [0.056]	ND [0.12] ND [0.058]	ND [0.0250] ND [0.0250]	ND [0.0255] ND [0.0255]	ND [0.0255] ND [0.0255]	ND [0.0261] ND [0.0261]
EPA 8270D SIM	Benzo[a]antnracene Benzo[a]pyrene	0.30												ND [0.012]	ND [0.012]	ND [0.056]	ND [0.058] ND [0.12]	ND [0.0250] ND [0.0100]	ND [0.0255] ND [0.0102]	ND [0.0255] ND [0.0102]	ND [0.0261] ND [0.0104]
EPA 8270D SIM	Benzo[b]fluoranthene	2.5												ND [0.011]	ND [0.011]	ND [0.056]	ND [0.058]	ND [0.0250]	ND [0.0255]	ND [0.0255]	ND [0.0261]
EPA 8270D SIM EPA 8270D SIM	Benzo[g,h,i]perylene Benzo[k]fluoranthene	0.26												ND [0.021] ND [0.015]	ND [0.021] ND [0.015]	ND [0.056] ND [0.056]	ND [0.058] ND [0.058]	ND [0.0250] ND [0.0250]	ND [0.0255] ND [0.0255]	ND [0.0255] ND [0.0255]	ND [0.0261] ND [0.0261]
EPA 8270D SIM	Chrysene	2.0												ND [0.01]	ND [0.01]	ND [0.11]	ND [0.12]	ND [0.0250]	ND [0.0255]	ND [0.0255]	ND [0.0261]
EPA 8270D SIM	Dibenz(a,h)anthracene	0.25												ND [0.013]	ND [0.013]	ND [0.11]	ND [0.12]	ND [0.0100]	ND [0.0102]	ND [0.0102]	ND [0.0104]
EPA 8270D SIM EPA 8270D SIM	Fluoranthene Fluorene	260 290												ND [0.017] 0.023 [0.016] J	ND [0.017] 0.022 [0.016] J	ND [0.22] ND [0.11]	ND [0.23] ND [0.12]	ND [0.0250] 0.0200 [0.0150] J	ND [0.0255] 0.0232 [0.0150] J	ND [0.0255] 0.0313 [0.0255] J	ND [0.0261] 0.0243 [0.0261] J
EPA 8270D SIM	Indeno[1,2,3-cd]pyrene	0.19												ND [0.022]	ND [0.022]	ND [0.056]	ND [0.058]	ND [0.0250]	ND [0.0255]	ND [0.0255]	ND [0.0261]
EPA 8270D SIM EPA 8270D SIM	Naphthalene Phenanthrene	1.7												4.1 [0.053] ND [0.056]	3.7 [0.053] ND [0.056]	3.6 [0.11] ND [0.11]	3.3 [0.12] ND [0.12]	2.57 [0.0310] ND [0.0250]	2.4 [0.0310]	3.49 [0.0510]	3.2 [0.0521] ND [0.0520]
EPA 8270D SIM	Pyrene	1/0												ND [0.056] ND [0.026]	ND [0.056] ND [0.026]	ND [0.11] ND [0.11]	ND [0.12] ND [0.12]	ND [0.0250]	0.0292 [0.0150] J B ND [0.0255]	0.0580 [0.0510] J ND [0.0255]	ND [0.0520] ND [0.0261]
SW8260D SW8260D	1,1,1,2-Tetrachloroethane 1.1.1-Trichloroethane	5.7 8000							-					ND [0.009] ND [0.39]	ND [0.009] ND [0.39]	ND [2] ND [3]	ND [2] ND [3]	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]
SW8260D	1.1.2.2-Tetrachloroethane	0.76												ND [0.049]	ND [0.049]	ND [3]	ND [3]	ND [0.250]	ND [0.250]	ND [0.250]	ND [0.250]
SW8260D	1,1,2-Trichloroethane	0.41												ND [0.017]	ND [0.017]	ND [1]	ND [1]	ND [0.200]	ND [0.200]	ND [0.200]	ND [0.200]
SW8260D SW8260D	1,1-Dichloroethane 1 1-Dichloroethene	28						<u>├ </u>	-					ND [0.22]	ND [0.22] 0.11 [0.014] I	ND [2] ND [4]	ND [2] ND [4]	ND [0.500] ND [0.500]	ND [0.500] ND [0.500]	ND [0.500] ND [0.500]	ND [0.500] ND [0.500]
SW8260D	1,1-Dichloropropene	NS												ND [0.29]	ND [0.29]	ND [3]	ND [3]	ND [0.500]	ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	1,2,3-Trichlorobenzene	7												ND [1.1]	ND [1.1]	ND [5]	ND [5]	ND [0.500]	ND [0.500]	ND [0.500]	ND [0.500]
SW8260D SW8260D	1,2,3-Trichloropropane 1,2,4-Trichlorobenzene	0.0075												ND [0.41] ND [0.33]	ND [0.41] ND [0.33]	ND [2] ND [2]	ND [2] ND [2]	ND [0.500] ND [0.500]	ND [0.500] ND [0.500]	ND [0.500] ND [0.500]	ND [0.500] ND [0.500]
SW8260D	1,2,4-Trimethylbenzene	56												7.1 [0.61]	7.1 [0.61]	15 [3]	15 [3]	9.81 [0.310]	10 [0.310]	28.6 [5.0]	21.4 [0.500]
SW8260D	1,2-Dibromo-3-chloropropane	NS												ND [1.8]	ND [1.8]	ND [10]	ND [10]	ND [5.00]	ND [5.00]	ND [5.00]	ND [5.00]
SW8260D SW8260D	1,2-Dibromoethane 1,2-Dichlorobenzene	0.075												ND [0.014]	ND [0.014]	ND [2] ND [2]	ND [2] ND [2]	ND [0.0375] ND [0.500]	ND [0.0375] ND [0.500]	ND [0.0375] ND [0.500]	ND [0.0375] ND [0.500]
SW8260D	1,2-Dichloroethane	1.7												ND [0.024]	0.17 [0.024] J	ND [2] QN	0.61 [2] J QN	ND [0.250]	ND [0.250]	ND [0.250]	ND [0.250]
SW8260D	1,2-Dichloropropane	8.2												ND [0.18]	ND [0.18]	ND [1]	ND [1]	ND [0.500]	ND [0.500]	ND [0.500]	ND [0.500]
SW8260D SW8260D	1,3,5-Trimethylbenzene 1.3-Dichlorobenzene	60 300												2.7 [0.55] J ND [0.18]	2.8 [0.55] J ND [0.18]	5.5 [3] ND [2]	6 [3] ND [2]	2.02 [0.310] ND [0.500]	2.04 [0.310] ND [0.500]	3.38 [0.50] ND [0.500]	2.81 [0.500] ND [0.500]
SW8260D	1,3-Dichloropropane	NS												ND [0.35]	ND [0.35]	ND [2]	ND [2]	ND [0.250]	ND [0.250]	ND [0.250]	ND [0.250]
SW8260D SW8260D	1,4-Dichlorobenzene 2,2-Dichloropropane	4.8 NS												ND [0.014] ND [0.32]	ND [0.014] ND [0.32]	ND [4] ND [3]	ND [4] ND [3]	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]
SW8260D SW8260D	2-Butanone (MEK)	5600												ND [0.32]	ND [0.32]	ND [20]	ND [3] ND [20]	ND [0.500] ND [5.00]	ND [0.500] ND [5.00]	ND [0.500] ND [5.00]	ND [0.500] ND [5.00]
SW8260D	2-Chlorotoluene	NS												ND [0.51]	ND [0.51]	ND [3]	ND [3]	ND [0.500]	ND [0.500]	ND [0.500]	ND [0.500]
SW8260D SW8260D	2-Hexanone 4-Chlorotoluene	38 NS												ND [0.098] ND [0.51]	ND [0.098] ND [0.51]	ND [20] ND [2]	ND [20] ND [2]	ND [5.00] ND [0.500]	ND [5.00] ND [0.5001	ND [5.00] ND [0.500]	ND [5.00] ND [0.500]
SW8260D	4-Isopropyltoluene	NS												ND [0.28]	0.62 [0.28] J	ND [3]	ND [3]	0.450 [0.310] J	0.470 [0.310] J	ND [0.500]	ND [0.500]
SW8260D	4-Methyl-2-pentanone (MIBK)	6300														ND [15]	ND [15]	ND [5.00]	ND [5.00]	ND [5.00]	ND [5.00]
SW8260D SW8260D	Acetone Benzene	14000 4.6	96.4	93.2	98.6	32.2	34.1	31.4 51.2	21	21.1	24.7	23 H	22 H	20 13 [0.009]	14 [0.009]	ND [50] 90 [3]	52 [50] B 88 [3]	31.9 [0.120]	31 [0.120]	26.2 [0.200]	30.2 [0.200]
SW8260D	Bromobenzene	62	20.4	33.2	50.0	JLIL	34.4	51.4 51.2			24.0	2.511		ND [0.43]	ND [0.43]	ND [2]	ND [2]	ND [0.500]	ND [0.500]	ND [0.500]	ND [0.500]
SW8260D	Bromochloromethane	NS												ND [0.29]	ND [0.29]	ND [2]	ND [2]	ND [0.500]	ND [0.500]	ND [0.500]	ND [0.500]
SW8260D SW8260D	Bromodichloromethane Bromoform	1.3												ND [0.006] ND [0.013]	ND [0.006] ND [0.013]	ND [2] ND [3]	ND [2] ND [3]	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]	ND [0.250] ND [0.500]
SW8260D	Bromomethane	7.5												ND [0.012]	ND [0.012]	ND [6]	ND [6]	ND [3.00]	ND [3.00]	ND [3.00]	ND [3.00]
SW8260D	Carbon disulfide	810 4.6												10 (0.2)	10 (0.2)	ND [3]	ND [3]	ND [5.00]	ND [5.00]	ND [5.00]	ND [5.00]
SW8260D SW8260D	Carbon tetrachloride Chlorobenzene	4.6												ND [0.3] ND [0.44]	ND [0.3] ND [0.44]	ND [3] ND [2]	ND [3] ND [2]	ND [0.500] ND [0.250]	ND [0.500] ND [0.250]	ND [0.500] ND [0.250]	ND [0.500] ND [0.250]
SW8260D	Chloroethane	21000												ND [1.1]	ND [1.1]	ND [5]	ND [5]	ND [0.500]	ND [0.500]	ND [0.500]	ND [0.500]
SW8260D SW8260D	Chloroform Chloromethane	2.2						<u> </u>	-					ND [0.009] ND [5.4]	ND [0.009] ND [5.4]	ND [5] ND [20] *	ND [5] ND [20] *	ND [0.500] ND [0.500]	ND [0.500] ND [0.500]	ND [0.500] 1.04 [0.500] ON	ND [0.500] ND [0.500] QN
SW8260D SW8260D										-				ND [5.4] ND [0.69]	ND [5.4] ND [0.69]	ND [20] -	ND [20] -	ND [0.500]	ND [0.500]	1.04 [0.500] QN ND [0.500]	ND [0.500] QN ND [0.500]
	cis-1,2-Dichloroethene	36															ND [1]	ND [0.250]			ND [0.250]
SW8260D	cis-1,3-Dichloropropene	36 NS												ND [0.026]	ND [0.026]	ND [1]			ND [0.250]	ND [0.250]	
SW8260D	cis-1,3-Dichloropropene Dibromochloromethane	36 NS 8.7												ND [0.016]	ND [0.016]	ND [2]	ND [2]	ND [0.250]	ND [0.250]	ND [0.250]	ND [0.250]
SW8260D SW8260D SW8260D	cis-1,3-Dichloropropene Dibromochloromethane Dibromomethane Dichlorodifluoromethane	36 NS 8.7 8.3 200												ND [0.016] ND [0.017] ND [2.3]	ND [0.016] ND [0.017] ND [2.3]	ND [2] ND [2] ND [10] *	ND [2] ND [2] ND [10] *	ND [0.250] ND [0.500] 0.460 [0.310] J	ND [0.250] ND [0.500] 0.490 [0.310] J	ND [0.250] ND [0.500] 0.658 [0.500] J	ND [0.500] 0.538 [0.500] J
SW8260D SW8260D SW8260D SW8260D SW8260D	cis-1,3-Dichloropropene Dibromochloromethane Dibromomethane Dichlorodifluoromethane Ethylbenzene	36 NS 8.7 8.3 200 15	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND [0.016] ND [0.017]	ND [0.016] ND [0.017]	ND [2] ND [2]	ND [2] ND [2]	ND [0.250] ND [0.500] 0.460 [0.310] J 9.21 [0.310]	ND [0.250] ND [0.500] 0.490 [0.310] J 9.21 [0.310]	ND [0.250] ND [0.500] 0.658 [0.500] J 12.1 [0.500]	ND [0.500] 0.538 [0.500] J 10.2 [0.500]
SW8260D SW8260D SW8260D	cis-1,3-Dichloropropene Dibromochloromethane Dibromomethane Dichlorodifluoromethane	36 NS 8.7 8.3 200	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND [0.016] ND [0.017] ND [2.3]	ND [0.016] ND [0.017] ND [2.3]	ND [2] ND [2] ND [10] *	ND [2] ND [2] ND [10] *	ND [0.250] ND [0.500] 0.460 [0.310] J	ND [0.250] ND [0.500] 0.490 [0.310] J	ND [0.250] ND [0.500] 0.658 [0.500] J	ND [0.500] 0.538 [0.500] J
SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D	cis-1,3-Dichloropropene Dibromochloromethane Dibromothane Dichlorodifluoromethane Ethylbenzene Freon-113 Hexachlorobutadiene Isopropylbenzene (Cumene)	36 NS 8.7 8.3 200 15 10000 1.4 450	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND [0.016] ND [0.017] ND [2.3] 20 9.8 [0.5] ND [0.026] 1.9 [0.51] J	ND [0.016] ND [0.017] ND [2.3] 9.2 [0.5] ND [0.026] 2.1 [0.51]	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2]	ND [2] ND [10] * 22 [3] ND [6] 4.5 [2]	ND [0.250] ND [0.500] 0.460 [0.310] J 9.21 [0.310] ND [5.00] ND [0.500] 3 [0.310]	ND [0.250] ND [0.500] 0.490 [0.310] J 9.21 [0.310] ND [5.00] ND [0.500] 3.17 [0.310]	ND [0.250] ND [0.500] 0.658 [0.500] J 12.1 [0.500] ND [5.00] ND [0.500] 7.92 [0.500]	ND [0.500] 0.538 [0.500] J 10.2 [0.500] ND [5.00] ND [0.500] 6.18 [0.500]
SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D	cis-1,3-Dichloropropene Dibromechloromethane Dibrommethane Dichlorodifluoromethane Ethylbenzene Frecon-113 Hexachlorobutadiene Isopropylbenzene (Cumene) Methylene chloride	36 NS 8.7 8.3 200 15 10000 1.4 450 110	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND [0.016] ND [0.017] ND [2.3] 20 9.8 [0.5] ND [0.026] 1.9 [0.51] J ND [1.4]	ND [0.016] ND [0.017] ND [2.3] 9.2 [0.5] ND [0.026] 2.1 [0.51] ND [1.4]	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5]	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5]	ND [0.250] ND [0.500] 0.460 [0.310] J 9.21 [0.310] ND [5.00] ND [0.500] 3 [0.310] ND [5.00]	ND [0.250] ND [0.500] 0.490 [0.310] J 9.21 [0.310] ND [5.00] ND [5.00] 3.17 [0.310] ND [5.00]	ND [0.250] ND [0.500] 0.658 [0.500] J 12.1 [0.500] ND [5.00] ND [5.00] 7.92 [0.500] ND [5.00]	ND [0.500] 0.538 [0.500] J 10.2 [0.500] ND [5.00] ND [0.500] 6.18 [0.500] ND [5.00]
SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D	cis-1,3-Dichloropropene Dibromochloromethane Dibromothane Dichlorodifluoromethane Ethylbenzene Freon-113 Hexachlorobutadiene Isopropylbenzene (Cumene)	36 NS 8.7 8.3 200 15 10000 1.4 450	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND [0.016] ND [0.017] ND [2.3] 20 9.8 [0.5] ND [0.026] 1.9 [0.51] J	ND [0.016] ND [0.017] ND [2.3] 9.2 [0.5] ND [0.026] 2.1 [0.51]	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [2]	ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [2]	ND [0.250] ND [0.500] 0.460 [0.310] J 9.21 [0.310] ND [5.00] ND [0.500] 3 [0.310] ND [5.00] ND [5.00]	ND [0.250] ND [0.500] 9.21 [0.310] J 9.21 [0.310] ND [5.00] ND [0.500] ND [5.00] ND [5.00] ND [5.00]	ND [0.250] ND [0.500] 0.658 [0.500] J 12.1 [0.500] ND [5.00] ND [0.500] 7.92 [0.500]	ND [0.500] 0.538 [0.500] J 10.2 [0.500] ND [0.500] 6.18 [0.500] ND [5.00] ND [5.00] ND [5.00]
SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D	cis-1.3-Bichloroprogene Dibromochtoromethane Dibromochtoromethane Bichlorodituroomethane Ethylbenzene Frecon-113 Hexachlorobutadiene Isoprogubenzene (Lumene) Methyl-budyl ether Naphthalene n-Butylbenzene	36 NS 8.7 200 15 10000 1.4 450 110 140 1.7 1000	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND [0.016] ND [0.017] ND [2.3] 20 9.8 [0.5]	ND [0.016] ND [0.017] ND [2.3] 9.2 [0.5] ND [0.026] 2.1 [0.51] ND [1.4] ND [0.44] 8 [0.013] 8	ND [2] ND [10] * 22 (3) ND [6] 4.5 [2] ND [5] ND [5] ND [2] 7.2 (4] ND [3]	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [2] 7.1 [4] ND [3]	ND [0.250] ND [0.500] 0.460 [0.310] J 9.21 [0.310] ND [5.00] ND [0.500] 3 [0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00]	ND [0.250] ND [0.500] 0.490 [0.310] j 9.21 [0.310] ND [5.00] 3.17 [0.310] ND [5.00] ND [5.00] 5.84 [0.310] ND [5.00]	ND [0.250] ND [0.500] 12.1 [0.500] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 1.40 [0.500]QN 0.836 [0.500]J	ND [0.500] 0.538 [0.500] J 10.2 [0.500] ND [5.00] ND [0.500] 0.618 [0.500] ND [5.00] ND [5.00] ND [5.00] 4.3 [0.500] QN 0.662 [0.500] J
SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D	cis-1-3 Dichloropropene Disromochloromethane Disromochloromethane Edhlorodifuoromethane Edhlorodifuoromethane Edhlorotenita Inopropybenzene (Lumene) Methyl-t-buhl ether Neghthalene n-Buhlbenzene n-Porybenzene	36 NS 8.7 200 15 10000 1.4 450 110 140 1.7 1000 660	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND (0.016) ND (0.017) ND (2.3) 20 9.8 (0.5) 1.9 (0.51) ND (1.026) 1.9 (0.51) ND (0.026) 1.9 (0.51) ND (0.41) 6.8 (0.013) 8 ND (0.41) 2 (0.51)	ND [0.016] ND [0.017] ND [2.3] 9.2 [0.5] 2.1 [0.51] ND [0.4] 8 [0.013] 8 0.48 [0.44] J 2.1 [0.5] J	ND [2] ND [2] ND [10]* 22 [3] ND [6] 4.5 [2] ND [5] ND [5] ND [2] 7.2 [4] ND [3] 4 [3]	ND [2] ND [2] ND [30] * 22 [3] ND [6] 4.5 [2] ND [5] ND [2] 7.1 [4] ND [3] 4.5 [3]	ND [0.250] ND [0.500] 0.460 [0.310] J 9.21 [0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] A36 [0.310] ND [0.500] 2.8 (0.310]	ND [0.250] ND [0.500] 9.21 [0.310] J 9.21 [0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 0.54 [0.310] ND [5.00] 3.47 (0.310] ND [0.500] 3.66 (0.310]	ND [0.250] ND [0.500] 0.658 [0.500] 12.1 [0.500] ND [5.00] 7.92 [0.500] ND [5.00] ND [5.00] ND [5.00] 1.40 [0.500] QN 0.836 [0.500] J 9.77 [0.500] QN	ND [0.500] 0.538 [0.500] J 10.2 [0.500] ND [5.00] 0.500] 0.18 [0.500] ND [5.00] ND [5.00] 4.3 [0.500] QN 0.662 [0.500] J 6.84 [0.500] QN
SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D	cis-1.3-Bichloroprogene Dibromochtoromethane Dibromochtoromethane Bichlorodituroomethane Ethylbenzene Frecon-113 Hexachlorobutadiene Isoprogubenzene (Lumene) Methyl-budyl ether Naphthalene - Butylbenzene	36 NS 8.7 8.3 200 15 10000 1.4 450 110 140 1.7 1000 660 190	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND [0.016] ND [0.017] ND [2.3] 20 9.8 [0.5]	ND [0.016] ND [0.017] ND [2.3] 9.2 [0.5] ND [0.026] 2.1 [0.51] ND [1.4] ND [0.44] 8 [0.013] 8	ND [2] ND [10] * 22 (3) ND [6] 4.5 [2] ND [5] ND [2] 7.2 (4] ND [3]	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [2] 7.1 [4] ND [3]	ND [0.250] ND [0.500] 9.460 [0.310] J 9.21 [0.310] J ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 2.8 [0.310] 10.310]	ND [0.250] ND [0.500] 0.450 [0.310] J 9.21 [0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 15.60 [0.310] 10.6 [0.310]	ND [0.250] ND [0.500] 0.658 [0.500] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 0.836 [0.500] 9.77 [0.500] (M 37.6 [0.500]	ND [0.500] 0.538 [0.500] J 10.2 [0.500] ND [5.00] ND [0.500] 0.618 [0.500] ND [5.00] ND [5.00] ND [5.00] 4.3 [0.500] QN 0.662 [0.500] J
SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D	Cis-1.3 Dichloropropene Cis-1.3 Dichloropropene Disromoshikar annethane Disromoshikar annethane Disromoshikar annethane Ehrdordmissen Ehrdordmiss	36 NS 8.7 1000 15 1000 14 450 110 140 140 1660 190 190 190 2000	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND (0.016) ND (0.017) ND (2.31) 20 9.8 [0.51] 1.9 [0.51] ND [1.026] 1.9 [0.51] ND [0.41] ND [0.41] ND [0.41] ND [0.41] 0.10 [0.41] 2 [0.51] 1.6 (7.51) 3.1 [0.75] ND [0.43]	ND [0.016] ND [0.017] ND [2.3] 9.2 [0.5] ND [0.026] 2.1 [0.51] ND [0.44] 0.48 [0.41] 0.48 [0.41] 6.5 [0.39] 3.1 [0.75] ND [0.49]	ND [2] ND [2] ND [10] * 22 [3] ND [6] ND [5] ND [5] ND [2] ND [3] 4 [3] 18 [2] 59 [3] 0.7 [3] J	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [5] ND [2] 7.1 [4] ND [3] 19 [2] 60 [3] 0.76 [3] J	ND 10.2501 ND 10.500] 0.460 [0.310] J 9.21 [0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 0.30 [0.310] 10.3 [0.310]	ND [0.250] ND [0.500] 0.490 [0.310] J 9.21 (0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] S & 4 (0.310] ND [5.00] 3.06 (0.310] 4.1 (0.620] 0.500 [0.310] J	No 10 2501 No 10 5001 0.658 (0.5001 No 10.5001 No 10.5001 No 15.001 No 15.001 No 15.001 No 15.001 No 15.001 0.836 (0.5001 9.977 (0.5001 QN 37.6 (0.5001 7.82 (1.600) 7.82 (1.600)	ND [0.500] 0.338 (0.500] J 10.2 [0.500] ND [0.500] ND [0.500] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 0.652 (0.500] A 0.652 (0.500] A 0.652 (0.500] A 0.631 [0.500] 6.31 [0.500] 1.36 (0.500] A 0.500] A
SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600 SW82600		36 NS 8.7 8.3 200 15 1000 1.4 450 110 140 1.4 140 1.7 1000 660 190 190 190 2000 1200	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	N0 10.016 N1 10.017 ND 12.31 20 9.810.51 N0 10.2261 1.91 05.51 N0 10.2261 N0 10.24 N0 10.251 N0 10.24 N0 10.44 N0 10.45 N0 10.45 N0 10.46 N0 10.47 N0 10.41 N0 10.43 N0 10.45 N0 10.45	ND [0.016] ND [0.017] ND [0.23] 9.2 [0.5] ND [0.026] ND [0.4] 8 [0.013] 8 0.48 [0.44] J 2.1 [0.51] 6.5 [0.39] 6.5 [0.39] 31 [0.75] ND [0.49] J ND [0.49]	ND [2] ND [10] * 22 [3] ND [6] * 22 [3] ND [6] ND [6] ND [7] ND [7] ND [2] ND [2] ND [3] 4 [3] 29 [3] 9 [3] 0.7 [3] J ND [5]	ND [2] ND [2] ND [2] ND [3] ND [6] 4.5 [2] ND [5] ND [2] 7.1 [4] ND [3] 4.5 [3] 19 [2] 60 [3] 0.76 [3] J ND [5]	ND [0.250] ND [0.500] 0.460 [0.310] J 9.21 [0.310] 9.21 [0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 6.36 [0.310] ND [5.00] 6.36 [0.310] ND [5.00] 2.8 [0.310] 10.3 [0.410] 40.9 [0.620] 0.540 [0.310] ND [5.00]	ND [0.250] ND [0.500] 0.450 [0.310] J 9.21 [0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 5.84 [0.310] 10.6 [0.310] 10.6 [0.310] 4.11 [0.620] 0.500 [0.500]	ND [0.250] ND [0.500] 0.658 [0.500] 1 12.1 [0.500] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 1.40 [0.500] QN 0.836 [0.500] QN 37.6 [0.500] QN 37.6 [0.500] QN 37.6 [0.500] QN 1.500] QN 2.500] QN 2.50	ND [0.500] ND [0.500] 10.2 [0.500] ND [5.00] ND [5.
SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D SW8260D	Cis-1.3 Dichloropropene Cis-1.3 Dichloropropene Disromoshikar annethane Disromoshikar annethane Disromoshikar annethane Ehrdordmissen Ehrdordmiss	36 NS 8.7 1000 110 140 140 140 160 190 190 190 2000	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14	11	ND (0.016) ND (0.017) ND (2.31) 20 9.8 [0.51] 1.9 [0.51] ND [1.026] 1.9 [0.51] ND [0.41] ND [0.41] ND [0.41] ND [0.41] 0.10 [0.41] 2 [0.51] 1.6 (7.51) 3.1 [0.75] ND [0.43]	ND [0.016] ND [0.017] ND [2.3] 9.2 [0.5] ND [0.026] 2.1 [0.51] ND [0.44] 0.48 [0.41] 0.48 [0.41] 6.5 [0.39] 3.1 [0.75] ND [0.49]	ND [2] ND [2] ND [10] * 22 [3] ND [6] ND [5] ND [5] ND [2] ND [3] 4 [3] 18 [2] 59 [3] 0.7 [3] J	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [5] ND [2] 7.1 [4] ND [3] 19 [2] 60 [3] 0.76 [3] J	ND 10.2501 ND 10.500] 0.460 [0.310] J 9.21 [0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 0.30 [0.310] 10.3 [0.310]	ND [0.250] ND [0.500] 0.490 [0.310] J 9.21 (0.310] ND [5.00] ND [5.00] ND [5.00] ND [5.00] S & 4 (0.310] ND [5.00] 3.06 (0.310] 4.1 (0.620] 0.500 [0.310] J	No 10 2501 No 10 5001 0.658 (0.5001 No 10.5001 No 10.5001 No 15.001 No 15.001 No 15.001 No 15.001 No 15.001 0.836 (0.5001 9.977 (0.5001 QN 37.6 (0.5001 7.82 (1.600) 7.82 (1.600)	ND [0.500] 0.338 (0.500] J 10.2 [0.500] ND [0.500] ND [0.500] ND [5.00] ND [5.00] ND [5.00] ND [5.00] ND [5.00] 0.652 (0.500] A 0.652 (0.500] A 0.652 (0.500] A 0.631 [0.500] 6.31 [0.500] 1.36 (0.500] A 0.500] A
SW8260D	cb-3-20 Dichlorogrogene (cb-3-20 Dichlorogrogene Dichloroghthoromethane Dichloroghthoromethane Edwidensnete Freien-113 Dichloroghthoromethane Edwidensnete (Lunene) Methysken Edhorde Methysken Edhorde Methysken Edhorde Methysken Edhorde Neghthalene n-BurtyBenzene n-BurtyBenzene n-BurtyBenzene Di All Maylene Di All Maylene Di All Maylene Carlon Carlon Carlon Carlon Tetashkoroshtne Tetashkoroshtne Toluene	36 NS 8.7 8.3 200 15 10000 1.4 450 110 140 1.7 1000 660 190 190 2000 690 1200 690 41 1100	262	250	32.6	36	41.8	44.3 33.5	7.5	22.8	30	14		N0 [0.018] N0 [0.017] N0 [0.317] 20 9.4 [0.5] 10 [0.027] N0 [0.317] N0 [0.328] 1.9 [0.428] 4.9 [0.44] 4.9 [0.44] 4.9 [0.44] 4.1 [0.51] 3.1 [0.75]	ND 10 0161 ND 10 0171 ND 12 31 9.2 10.51 9.2 10.51 ND 10 0261 2.1 00.51 ND 10 0261 2.1 00.51 ND 10 0261 2.1 00.51 ND 10.44 8 (00.01) 8 0.48 (0.041) 2.1 (0.51) ND (0.49) ND (1.4) ND (1.5) ND (0.49) ND (0.58) 0.55 (0.371) 1.8 (0.391)	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [6] ND [5] ND [5] ND [5] ND [5] ND [5] ND [3] 4 [3] 95 [3] 0.7 [3] ND [5] ND [3] ND [3] ND [3] ND [3] 4 [2]	ND [2] ND [10] * 22[3] ND [10] * 22[3] ND [6] 4.5 [2] ND [5] ND [5] ND [3] 4.5 [3] 19 [2] 60 [3] 0.76 [3] ND [5] ND [3] ND [3] ND [3] 4 [2]	N0 (0.250) 0.669 (0.310) 9.21 (0.310) N0 (5.50) N0	No 10, 2500 No 10, 5500 9, 921 (6, 310) J 9, 921 (6, 310) J No 10, 5001 No 10,	No 10, 2501 No 10, 2500 0.6588 (0, 500) 1 12, 10 (6, 500) No 11, 5001 No 15, 5001 No 16, 5001 No 10, 5	ND [0.500] ND [0.500] 10.2 [0.500] ND [1.500] ND [0.500] ND [0.500] ND [5.00] ND [5.00] A1 [0.500] AN 4.3 [0.500] AN 6.62 [1.500] A 6.63 [1.500] 6.63 [1.500] A1 [0.500] A ND [0.500] ND [0.500] N
SW82600 SW82600	dis-1.3 Dichlorogongene dis-3.5 Dichlorogongenemethane Dibromontbare Dibromontbare Dibromontbare Dibromontbare Dibromontbare Dibromontbare disconservation disconserv	36 NS 8.7 8.3 200 1.5 10000 1.4 450 110 140 140 140 140 140 190 190 2000 190 2000 690 690 41 110 360												N0 (0.01) N0 (0.01) N0 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 30 (0.01) 8.9 (0.01) 4.9 (0.01) 6.7 (0.03) 3.1 (0.75) 8.0 (0.44) 4.0 (0.41) 6.7 (0.39) 3.1 (0.75) N0 (0.47) N0 (0.47) N0 (0.47) N0 (0.47) N0 (0.47) 1.5 (0.89) 0.15 (0.37) 1.5 (0.31) 0.15 (0.31)	ND 10 0161 ND 10 0171 ND 10 0171 ND 12 31 9.2 (0.51 2.2 (0.51 ND 10 0261 2.1 (0.51) ND 10 141 ND 10 143 ND 10 143 10 051 2.1 (0.51) 2.1 (0.51) 3.1 (0.751) ND 10 131 ND 10 131 ND 10 131 ND 131 ND 131 ND 131 ND 132 ND 133 ND 134 ND 135	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [2] 7.2 [4] ND [3] 4.13 4.13 5.9 [3] ND [3] ND [3] ND [3] 4.12 ND [3] ND [3]	NO [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [5] ND [2] 7.1 [4] 0.76 [3] 60 [3] 0.76 [3] ND [3] ND [3] ND [3] 4 [2]	N0 (0.250) N0 (0.500) 0.460 (0.310) N0 (5.501) N0 (5.50	No 10 2.250] No 10 2.500] 0.4500 [0.310] J No 10 5.001 No 10 5.001 No 10 5.001 No 10 5.001 No 10 5.001 No 10 5.001 3.06 (0.310) 4.1 10.6200 No 10 5.001 No 10 5.00	NO 10, 2501 0.6580 [0.500] 12.1 (0.500] NO [0.500] NO [0.500] ND [0.500]	ND 10.5001 ND 10.5001 10.2 [0.500] ND [5.50] ND [5.50] ND [5.50] ND [5.50] ND [5.50] ND [5.50] ND [5.50] Add [0.500] Add [0.500] Add [0.500] ND [0.50
SW8260D	cb-3-20 Dichlorogrogene (cb-3-20 Dichlorogrogene Dichloroghthoromethane Dichloroghthoromethane Edwidensnete Freien-113 Dichloroghthoromethane Edwidensnete (Lunene) Methysken Edhorde Methysken Edhorde Methysken Edhorde Methysken Edhorde Neghthalene n-BurtyBenzene n-BurtyBenzene n-BurtyBenzene Di All Maylene Di All Maylene Di All Maylene Carlon Carlon Carlon Carlon Tetashkoroshtne Tetashkoroshtne Toluene	36 NS 8.7 8.3 200 15 10000 1.4 450 110 110 1.7 1000 660 190 190 190 1200 690 1200 690 1200 800 1200 800 1200 1200 1200 1200												ND [0.018] ND [0.017] ND [2.3] 20 9.4 [0.5] 21 9.4 [0.5] 1.9 [0.027] ND [1.2] ND [1.2] ND [1.2] ND [1.2] ND [1.4] ND [1.4] ND [0.4] 4.2 [0.33] ND [0.4] ND [0.4] ND [0.4] ND [0.5] ND [0.5] ND [0.5] ND [0.5] ND [0.3] ND [0.3] ND [0.3] ND [0.3]	ND 10 0161 ND 10 0171 ND 10 0171 ND 12 31 9.2 10.51 9.2 10 0.0261 2.1 00 0.0261 2.1 00 0.0261 ND 10 0.0261 9.0 10 0.0261 9.0 10 0.0261 ND 10 0.041 8 (0.013) 8 9.1 0.051 ND 10 0.041 ND 10 0.581 ND 10 0.581 ND 10 0.391 ND 10 0.371	ND [2] ND [2] ND [10] 22 [3] 22 [3] ND [6] 4.5 [2] ND [5] ND [5] ND [5] ND [5] ND [5] ND [3] 4 [3] 95 [3] ND [5] ND [5] ND [3]	ND [2] ND [10] * 22 [3] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [5] ND [2] 2.1 [4] ND [3] 4.5 [3] 19 [2] 60 [3] ND [3]	N0 (0.250) N0 (0.250) 0.460 (0.310) N0 (5.50) N1 (5.50) N0 (5.50)	ND (0.230) ND (0.250) 0.600 (0.310) ND (0.500) ND (0.500)	NO [0, 230] NO [0, 230] 0.6580 [0, 500] ND [5.50] ND [5.50]	N0 [0 5:00] 0.538 [0:509] 10.2 [0:500] N0 [5:00] N0 [5:00] N0 [5:00] N0 [5:00] N0 [5:00] N0 [5:00] 0.662 [0:509] 6:34 [0:500] 0:662 [0:509] 1:36 [0:500] N0 [0:50
SW82600 SW8260 SW860 SW860 SW860 SW860 SW8	(cs. 3.3 Dichlorogorgene (cs. 3.3 Dichlorogorgene Disromochloromethane Disromochloromethane Disromochloromethane (cs. 1.3) Heachlorobushlene Heachlorobushlene (cs. 1.3) Heachlorobushlene (cs. 1.3	36 NS 8.7 8.3 200 15 10000 1.4 450 1.4 450 1.4 1000 660 190 190 2000 1200 690 1200 690 41 1100 1200 850 8520												N0 (0.01) N0 (0.01) N0 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 20 9.8 (0.01) 30 (0.01) 8.9 (0.01) 4.9 (0.01) 6.7 (0.03) 3.1 (0.75) 8.0 (0.44) 4.0 (0.41) 6.7 (0.39) 3.1 (0.75) N0 (0.47) N0 (0.47) N0 (0.47) N0 (0.47) N0 (0.47) 1.5 (0.89) 0.15 (0.37) 1.5 (0.31) 0.15 (0.31)	ND 10 0161 ND 10 0171 ND 10 0171 ND 12 31 9.2 (0.51 2.2 (0.51 ND 10 0261 2.1 (0.51) ND 10 141 ND 10 143 ND 10 143 10 051 2.1 (0.51) 2.1 (0.51) 3.1 (0.751) ND 10 131 ND 10 131 ND 10 131 ND 131 ND 131 ND 131 ND 132 ND 133 ND 134 ND 135	ND [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [2] 7.2 [4] ND [3] 4.13 4.13 5.9 [3] ND [3] ND [3] ND [3] 4.12 ND [3] ND [3]	NO [2] ND [2] ND [10] * 22 [3] ND [6] 4.5 [2] ND [5] ND [5] ND [2] 7.1 [4] 0.76 [3] 60 [3] 0.76 [3] ND [3] ND [3] ND [3] 4 [2]	N0 (0.250) N0 (0.250) 0.460 (0.310) N0 (5.50) N1 (5.50)	ND (0.230) NO (0.230) 0.496 (0.330) 9.21 (0.330) NO (1.50) NO (1.50) 9.21 (0.330) NO (1.50) 9.21 (0.310) NO (1.50) 9.21 (0.310) NO (1.50) 9.21 (0.310) 9.20 (0.310) 9.20 (0.310) 9.20 (0.310) 9.20 (0.310) 9.20 (0.310) 9.20 (0.310) 9.20 (0.310) 9.20 (0.310) 9.20 (0.310)	ND (0.250) NN (0.250) 0.558 (0.500) 0.558 (0.500) 12.1 (0.500) ND (1.500)	N0 10 5001 0.538 (5902) 10.2 (5.901) 10.2 (5.901) N0 [5.00] N0 [15.00] N0 [15.00] N0 [15.00] N0 [15.00] 0.662 (5.900) 6.43 (5.900) 0.662 (5.900) 6.43 (5.900) 0.662 (5.900) 1.36 (5.900) 0.61 (5.900) N0 [15.500] N0 [15.500]
SW82400 SW8240 SW840 SW840	dis-1.3 Dichloropropene dis-3.5 Dichloropropene Dibromothane Dibromothane Dibromothane Dibromothane Ethyldenromethane Ethyldenromethane Ethyldenromethane displangebergene dis	36 NS 8.7 200 15 10000 14 450 110 140 140 140 140 140 140 140 190 190 2000 660 690 41 1100 360 NS 8 2.8												N0 (0.016) N0 (0.017) ND (2.3) 20 9.8 (0.5)	ND 10 0161 ND 10 0171 ND 10 0171 ND 12 31 9.2 (0.51 2.2 (0.51 ND 10 0261 2.1 (0.51) ND 10 1.41 ND 10 1.43 ND 10 1.41 ND 10 0.451 2.1 (0.51) 2.1 (0.51) 3.1 (0.751) ND 10 0.481 ND 10 1.41 ND 10 0.451 ND 10 0.451 ND 10 0.581 ND 10 0.391 ND 10 0.0271 ND 10 0.0271 ND 10 0.0271 ND 10 0.0271	ND [2] ND [2] ND [10] 22 [3] 0 10 4 10 10 10 10 10 11 12 13 14 13 12 13 13 14 13 14 15 16 17 18 18 19 10 10 13 13 14 13 14 15 10 13 10 13 14 12 13 14 12 13 14 12 13 14 12	ND [2] ND [2] ND [10] * 22[3] 22[3] ND [6] 4.5 [2] ND [5] ND [2] ND [3] 4.5 [3] 19 [2] 60 [3] 0.76 [3] ND [3]	N0 [0.250] N0 [0.250] 0.460 [0.310] N0 [5.00] N0 [5.00] N0 [5.00] 10 [5	ND (0.230) ND (0.250) 0.600 (0.310) ND (0.500) ND (0.500)	NO 10, 2301 NO 10, 2301 0, 5501 12, 1 (6, 500) NO 15, 5001 NO 15,	N0 [0.500] 0.538 [0.509] 10.2 (0.509] 10.2 (0.500] N0 [1.500] N0 [1.50] N0 [1.50] N0 [1.500] N0 [1.500] 0.642 [0.500] 0.642 [0.500] 1.646 [0.500] 1.646 [0.500] N0 [0.500] N

MW-3 Historical Results

Method	Analyte	ADEC CULs (µg/L)	MW3-K-1008 (2008)	MW3-K-0809 (2009)	DUP-K-0809 (2009)	MW3-911 (2011)	MW3-1012 (2012)	DUP1-1012 (2012)	MW3-K-0713 (2013)	DUP-K-0713 (2013)	MW3-K-0814 (2014)	DUP-K-0814 (2014)	MW3-K-0915 (2015)	DUP-K-0915 (2015)	MW3-1016 (2016)	DUP-1016 (2016)	MW3-0817 (2017)	MW3-718 (2018)	D-718 (2018)	Kobuk-MW3-919 (2019)	MW3-0822 (2022)
AK101	GRO	2200	7910	N/A	N/A	5760	13400	11000	2640	2540	2800	4000	1470	1650	1230	1250	1100	800 H QH	830 H QH	180 [100] J	45.9 [50.0] J
AK102	DRO	1500	11600	3040	3260	3910	28500	24400	7340	5840	6100 B	6100 B	3440	3890	5020	5990	4400	5100 QN	1400 QN	1700 [100]	2570 [294] QL
8270D SIM LV (PAH)	1-Methylnaphthalene	11								1										16 [0.029]	1.79 0.0278] B
8270D SIM LV (PAH)	2-Methylnaphthalene	36										L								14 [0.056]	1.05 [0.0278] B
8270D SIM LV (PAH) 8270D SIM LV (PAH)	Acenaphthene Acenaphthylene	530 260				+						<u> </u>								0.41 [0.028] 0.089 [0.02] J	0.0562 [0.0278] ND [0.0278]
8270D SIM LV (PAH)	Anthracene	43																		0.046 [0.032] J	ND [0.0278]
8270D SIM LV (PAH)	Benzo[a]anthracene	0.30										L								ND [0.015]	ND [0.0278]
8270D SIM LV (PAH) 8270D SIM LV (PAH)	Benzo[a]pyrene Benzo[b]fluoranthene	0.25				+						<u> </u>								ND [0.015] ND [0.014]	ND [0.0111] ND [0.0278]
8270D SIM LV (PAH)	Benzo[g,h,i]perylene	0.26				-				-			-	-						ND [0.027]	ND [0.0278]
8270D SIM LV (PAH)	Benzo[k]fluoranthene	0.80																		ND [0.019]	ND [0.0278]
8270D SIM LV (PAH) 8270D SIM LV (PAH)	Chrysene Dikasa(a k)asthanana	2.0							+			I		'						ND [0.013] ND [0.017]	ND [0.0278] ND [0.0111]
8270D SIM LV (PAH) 8270D SIM LV (PAH)	Dibenz(a,h)anthracene Fluoranthene	260				-				-			-	-						ND [0.022]	ND [0.0111]
8270D SIM LV (PAH)	Fluorene	290																		1.1 [0.02]	0.14 [0.0278]
8270D SIM LV (PAH) 8270D SIM LV (PAH)	Indeno[1,2,3-cd]pyrene Naphthalene	0.19				<u> </u>		<u> </u>				<u> </u>								ND [0.028] 14 [0.068]	ND [0.0278] 2.08 [0.0556]
8270D SIM LV (PAH) 8270D SIM LV (PAH)	Phenanthrene	1.7				-				-										0.35 [0.071]	0.0596 [0.0556] J
8270D SIM LV (PAH)	Pyrene	120																		ND [0.033]	ND [0.0278]
01100000		6.7				<u> </u>	<u> </u>	<u> </u>		<u> </u>		<u> </u>			<u> </u>					10 10 0001	10 10 0501
SW8260D SW8260D	1,1,1,2-Tetrachloroethane 1,1,1-Trichloroethane	5.7 8000							+	-			-		<u> </u>					ND [0.009] ND [0.39]	ND [0.250] ND [0.500]
SW8260D	1,1,2,2-Tetrachloroethane	0.76																		ND [0.049]	ND [0.250]
SW8260D	1,1,2-Trichloroethane	0.41				<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>		<u> </u>	<u> </u>		<u> </u>					ND [0.017]	ND [0.200]
SW8260D SW8260D	1,1-Dichloroethane 1,1-Dichloroethene	28 280	-			<u> </u>	<u> </u> '	<u> </u>	<u> </u>	<u>+</u>	<u>├</u> ────	<u> </u>	<u> </u>	<u> </u>	<u> </u>					ND [0.22] ND [0.014]	ND [0.500] ND [0.500]
SW8260D	1,1-Dichloropropene	NS					-		1											ND [0.29]	ND [0.500]
SW8260D	1,2,3-Trichlorobenzene	7								I		L								ND [1.1]	ND [0.500]
SW8260D SW8260D	1,2,3-Trichloropropane 1,2,4-Trichlorobenzene	0.0075							+			I		'						ND [0.41] ND [0.33]	ND [0.500] ND [0.500]
SW8260D SW8260D	1,2,4-Trimethylbenzene	4 56				-							-	-						48 [0.61]	4.64 [0.500]
SW8260D	1,2-Dibromo-3-chloropropane	NS																		ND [1.8]	ND [5.00]
SW8260D SW8260D	1,2-Dibromoethane 1.2-Dichlorobenzene	0.075				<u> </u>		<u> </u>				<u> </u>								ND [0.014] ND [0.46]	ND [0.0375] ND [0.500]
SW8260D SW8260D	1,2-Dichlorobenzene 1,2-Dichloroethane	300				-				-										ND [0.46] ND [0.014]	ND [0.500] ND [0.250]
SW8260D	1,2-Dichloropropane	8.2																		ND [0.024]	ND [0.500]
SW8260D	1,3,5-Trimethylbenzene	60				<u> </u>	<u> </u>	<u> </u>		<u> </u>		<u> </u>			<u> </u>					23 [0.55]	3.70 [0.500]
SW8260D SW8260D	1,3-Dichlorobenzene 1,3-Dichloropropane	300 NS				+						<u> </u>								ND [0.18] ND [0.35]	ND [0.500] ND [0.250]
SW8260D	1,4-Dichlorobenzene	4.8					-													ND [0.014]	ND [0.250]
SW8260D	2,2-Dichloropropane	NS										L								ND [0.32]	ND [0.500]
SW8260D SW8260D	2-Butanone (MEK) 2-Chlorotoluene	5600 NS				+						<u> </u>								ND [0.51]	ND [5.00] ND [0.500]
SW8260D	2-Hexanone	38								-										ND [0.098]	ND [5.00]
SW8260D	4-Chlorotoluene	NS										L								ND [0.51]	ND [0.500]
SW8260D SW8260D	4-Isopropyltoluene 4-Methyl-2-pentanone (MIBK)	NS 6300				+		<u> </u>	+	<u> </u>		I			<u> </u>					3 [0.28]	0.334 [0.500] J
SW8260D SW8260D	Acetone	14000				-				-			-	-							ND [5.00]
SW8260D	Benzene	4.6	37.9	59.4	59.4	11.4	7.27	6.53	4.27	4.13	0.83	0.84	1.76	2.15	0.5	0.47	0.29 J H	0.16 J	0.19 J	0.17 [0.009] J	ND [0.200]
SW8260D SW8260D	Bromobenzene Bromochloromethane	62 NS				<u> </u>		<u> </u>				<u> </u>								ND [0.43] ND [0.29]	ND [0.500] ND [0.500]
SW8260D	Bromodichloromethane	1.3				-				-			-	-						ND [0.006]	ND [0.300] ND [0.250]
SW8260D	Bromoform	33																		ND [0.013]	ND [0.500]
SW8260D	Bromomethane	7.5				<u> </u>	<u> </u>	<u> </u>		<u> </u>		<u> </u>			<u> </u>					ND [0.012]	ND [3.00]
SW8260D SW8260D	Carbon disulfide Carbon tetrachloride	810 4.6							+	-			-		<u> </u>					ND [0.3]	ND [5.00] ND [0.500]
SW8260D	Chlorobenzene	78												1						ND [0.44]	ND [0.250]
SW8260D	Chloroethane	21000					'	L				 								ND [1.1]	ND [0.500]
SW8260D SW8260D	Chloroform Chloromethane	2.2 190	-			<u> </u>	<u> </u> '	<u> </u>	<u> </u>	<u>+</u>	<u>├</u> ────	<u> </u>	<u> </u>	<u> </u>	<u> </u>					ND [0.009] ND [5.4]	ND [0.500] ND [0.500]
SW8260D	cis-1,2-Dichloroethene	36								<u>t</u>										ND [0.69]	ND [0.500]
SW8260D	cis-1,3-Dichloropropene	NS	1	-	1	1		1	1	1		L	1		L	1	-			ND [0.026]	ND [0.250]
SW8260D SW8260D	Dibromochloromethane Dibromomethane	8.7			L	 	├ ───'	 	 	<u> </u>	├ ──── [!]	I	───	<u>↓</u> !	<u> </u>	I				ND [0.016] ND [0.017]	ND [0.250] ND [0.500]
SW8260D SW8260D	Dichlorodifluoromethane	200	1			1	1	1	1	1			1		1	1				ND [0.017] ND [2.3]	ND [0.500]
SW8260D	Ethylbenzene	15	605	471	515	266	364	245	192	179	86	79	57.5	57.8	33.9	34.2	27	9.5	9.6	9.3 [0.5]	0.659 [0.500] J
SW8260D	Freon-113	10000				<u> </u>	↓ '	──	<u> </u>	<u> </u>	<u> </u>	 	<u> </u>	↓	 					ND [0.020]	ND [5.00]
SW8260D SW8260D	Hexachlorobutadiene Isopropylbenzene (Cumene)	1.4	-			<u> </u>	<u> </u>	<u>+</u>	<u> </u>	<u>+</u>		<u> </u>	<u> </u>	<u> </u>	<u> </u>					ND [0.026] 6.6 [0.51]	ND [0.500] 0.438 [0.500] J
SW8260D	Methylene chloride	110	1																	ND [1.4]	ND [5.00]
SW8260D	Methyl-t-butyl ether	140				+	\vdash		<u> </u>	<u> </u>		<u> </u>	<u> </u>		<u> </u>					ND [0.44]	ND [5.00]
SW8260D SW8260D	Naphthalene n-Butylbenzene	1.7 1000	-			<u> </u>	<u> </u> '	<u> </u>	<u> </u>	<u>+</u>	<u>├</u> ────	<u> </u>	<u> </u>	<u> </u>	<u> </u>					35 [0.013] B ND [0.44]	4.2 [0.500] ND [0.500]
SW8260D	n-Propylbenzene	660						1												9.7 [0.5]	0.516 [0.500] J
SW8260D	o-Xylene	190	1	-	1	1	1	1	1	1		L	1		1	1	-			12 [0.39]	2.04 [0.500]
SW8260D SW8260D	P & M -Xylene	190 2000			<u> </u>	 	├ ───'	───	 	<u> </u>	<u> </u> '	 	───	├ ────'	<u> </u>	<u> </u>	<u> </u>			38 [0.75] 2.2 [0.49] J	4.05 [1.00] ND [0.500]
SW8260D SW8260D	sec-Butylbenzene Styrene	2000	1			1	<u> </u>	1	1	+			1	<u> </u>	<u> </u>	1	1			2.2 [0.49] J ND [1]	ND [0.500] ND [0.500]
SW8260D	tert-Butylbenzene	690						1		1			L		[ND [0.58]	ND [0.500]
SW8260D	Tetrachloroethene	41	-			0.70	4.97	4.55							0.000	0.500.1	0.000	ND /2 O	ND (2.0)	ND [0.017]	ND [0.500]
SW8260D SW8260D	Toluene trans-1,2-Dichloroethene	1100 360	9	ND	ND	9.72	4.97	4.65	13	10.7	1.5	1.3	1.18	1.2	0.600 J	0.580 J	0.44 J	ND [2.0]	ND [2.0]	0.79 [0.39] J ND [0.39]	ND [0.500] ND [0.500]
SW8260D	trans-1,3-Dichloropropene	NS						1												ND [0.027]	ND [0.500]
SW8260D	Trichloroethene	2.8	1	-	1	1		1	1	1		L	1		1	1	-			ND [0.009]	ND [0.500]
				1	1	1	1	1	1	1	1	i.	1	1	1	1	1			ND [0.63]	ND [0.500]
SW8260D SW8260D	Trichlorofluoromethane Vipyl acetate	5200								-		1									
SW8260D SW8260D SW8260D SW8260D	Trichlorofluoromethane Vinyl acetate Vinyl chloride	5200 410 0.19 190												343			130	86	88	ND [0.013] 50.0 [1.14]	ND [5.00] ND [0.0750]

Appendix E:

Field Notes & Groundwater Sampling Field Data Sheets

Appendix E-1:

2019 Field Notes & Groundwater Sampling Field Data Sheets

Project #:	43	7M-380		Site Location:	Kobuk Feed and I	Fuel	-entropy V II
10000000 C	9/23	T		Probe/Well #:	mue-	- 1	
Date:	1220	<u>///·</u>		Sample ID:	Kabala -	- MW 1-9	19
Time:							`
Sampler:	Clear			Outside Temperature: 45	[°] C		
Sideather:		<u> </u>		Cutatue remperature:		MS/MSD Performed	2 Yest No
					6		\sim
Purge Method	eriolditic Party /S		······································	Sample Method:	Peristaltic Pump	Submersible Bladde	r/Other
Equipment Used to	r Sampling:	VSI# Rantal	Water Level: 1.4	,		2.493 (
Free Product-Obse	rved in Probe/Well	7 Yes No	If Yes, Depth to Product:	Version Contraction of the second sec			2
Column of Water in	Probe/Well			Sampling Depth U	nknown	Ser Ser	cen in
Total Depth in Probe	/Well (feet btoc):	16.95		Well Screened Across / Ba			
Depth to Water from	TOC (feet):	- 11.46		Depth tubing / pump intake se	et* approx.	D feet below top of the second sec	of casing
Column of Water in	Probe/Well (feet):	= 5.49	• • • · · · · · · · · · · · · · · · · ·	"Tubing/pump intake must be se	t approximately 2 fee	t below the water table fo	r wells screene
Circle: Gallons per f	oot of 1.25" (X 0.06	4) or 2" (X 0.163) or 4" (X	0.65)	the water table, or in the middle	of the screened inten	val for wells screened bel	ow the water ta
Volume of Water in	Probe/Well Casin	g (gal):	0.35	_			
	abo at a rate of 0 f	2 to 0 15 GPM until para	maters stabilize or 3 casim	i volumes have been remove	d. If well draws d	own below tubing or	oump intake.
		ald well using a no-purge		Totalica nave been remove	u. II waa ululio u	••••••••••••••••••••••••••••••••••••••	,
			At least	3 of the 4 parameters b	elow must stal	bilize	
				±10%			<0.33 fe after init
Field Parameters:		±3% (or ±0.2°C max)	±3%	(<1mg/L, ±0.2 mg/L)	±0.1 units	±10 mV	drawdo
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	рН	Potential	Water Le
(gal)	(min)	(°C)	(mS/cm)	(mg/L)		(mV)	(ft)
0.25	3	5.9	0-743	1.89	7.01	53.0	11.4
0.50	6	5.7	0.717	1.08	7.04	15.8	11.4
0.75	9	5.4	0.681	0.75	7.04	-3.3	11.49
1.00	12	5.4	0.667	0.66	7.02	- 5.9	11.48
1.25	15	5.4	0/61	0.58	10,01	-16.2	11.48
1.50	15	5.3	A.664 V	0.55 r	7.01 1	-72.5	1200
1.30	<u>' v</u>		0.001				
	}			······································	1		
-							8
						-	
	/				-		
		FER			1	1	
			l		1	1 1.11	1
and the second sec		Pas / No If no, why	not?	Bottom i	3 501	T/SITY	
Did drawdown stal		\sim					·*·
Was flowrate betw	een 0.03 and 0.15	GPM2 Yes No If no, w	hy not?				-
Water Color:	Clear	Yellow	Orange	Brow	wn/Black (Sand/Sili	i) Other:	
Well Condition:	Lock	Labeled wi		Comments	:		totono.
Sheen: Yes (No)		Odor: Yes1		Notes/Comments			
\cup							
- 1	es (Circle):	VOC (CRO (DRO) DAFT	BTER	······································			
Laboratory Analys			blume added (mL): HCI = _	HNO3 =			12 21/20-
Laboratory Analys							
pH checked of san	thes. The						
10760 N.743	1.75	Containerized and dispo	rad as IDUP		If No why not?		

.

GROUNDWA	TER SAMPLE	FORM					
Project #:		7M-380		Site Location:	Kobuk Feed and F	uel	
Date:	9/23	119		Probe/Well #:	NW-	٢	
Time:	1230			Sample ID:	Kobuk-	-MW 2-91	3
Sampler:	SK						
Weather:	Clea	~		Outside Temperature: 4	<u>4°F</u>		
QA/QC Sample ID/		obub - MW	1-919/1245			MS/MSD Performed?	Yes No
Purge Method:		Submersible / Bladder		Sample Method:	Peristaltic Pupp /	Submersible Bladde	/ Other
Equipment Used for		YSI# Rental	Water Level: YH				
Free Product Obse			If Yes, Depth to Product:	2	<u> </u>		
Column of Water is	n Probe/Well	.		Sampling Depth	Inknow	n screen	Mte val
Total Depth in Prob	e/Well (feet btoc):	18.34	0	Well Screened Across / Be	How water table		
Depth to Water from	n TOC (feet):	12.50		 Depth tubing / pump intake si 	et approx. 131	S feet below top of	casing
Column of Water in	Probe/Well-(feet):	= 3.47	,	- *Tubing/pump intake must be se	t approximately 2 feet	below the water table for	wells screened acro
Circle: Gallons per	foot of 1.25" (X 0.06	4) or 2" (X 0.163) or 4" (X	0.65)	the water table, or in the middle of	of the screened interv	al for wells screened below	w the water table
Volume of Water in			0.35				
				-			
)3 to 0.15 GPM until para aid well using a no-purge		g volumes have been remove	d. If well draws do	own below tubing or p	ump intake,
······			At least	t 3 of the 4 parameters b	elow must stab	ilize	
		±3% (or		±10%			<0.33 feet after initial
Field Parameters:		±3% (or ±0.2°C max)	±3%	(<1mg/L, ±0.2 mg/L)	±0.1 units	±10 mV	drawdown
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	рн	Potential	Water Level
(gal)	(min)	(°C)	(mS/cm)	(mg/L)		(mV)	(用)
0.25	3	4.6	6.722	2:22	6:75	+40.0	12.94
0.50	L.	416	0.684	1.27	6.72	122,0	12.95
0.75	G	4.6	0.671	1.11	6.83	10/2	12.97
1.00	12	4,5	0.670	0.89	6:77	97.9	12.98
1.25	15	4.5	0.670	0.7.3	6.74	84.4	12.98
1:50	18	61.61	0.670	0.67	6.77	87.3	12.99
		······································				<u> </u>	
· ·							
		P	k - 55.000				
			∀				
	(- <u>F</u>				
				J			
Did groundwater p	~	\sim	not?	· · · · · ·			
Did drawdown stal		\sim					
Was flowrate betw	een 0.03 and 0.15 (GPM2 Yes No If no, w	hy not?				
Water Color:	Clear	Yellow	Orange	Brow	m/Black (Sand/Silt)	Other:	
Well Condition:	Lock	Labeled wit	hLOCID: YA	Comments:			
Sheen: Yes / No		Odor: Yes(No)		Notes/Comments:			
Laboratory Analys		VOCOGRO, DRO, PAH					
pH checked of san	nples: Y/N	Approximate vo	lume added (mL): HCI =	HNO ₃ =			
Purge Water	175		6				
Gallons generated:		Containenized and dispos	ed as IDW Yes No		If No, why not?		
Disposal method	OL Water / CERCL	A Waste					
Sampler's Initials:	25						

ROUNDWAT	ER SAMPLE	FORM					
roject #:		M-380		Site Location:	Kobuk Feed and Fr		
ato:	9/23/10	9		Probe/Well #:		-MW3-9	19
me: _	1030			Sample ID:		10.00 3 1	
ampler: _	<u>32</u>			7	1°F		
eather:	Clear	<u> </u>		Outside Temperature: <u>}</u>			Varia
VQC Sample ID/1	Time/LOCID:	~~ <u>~</u> ~~~				MS/MSD Performed?	
rge Method: 🕧	A CONTRACTOR OF A CONTRACTOR OFTA CONTRACTOR O	ubmersible / Bladder		Sample Method:	Peristaltic Pump /	Submersible / Bladder	/ Other
uipment Used fo	or Sampting:	YSI # Rental	Water Level: YH				taring of the second
ee Product Obse	rved in Probe/Well	7 Yesti	If Yes, Depth to Product:_	d	7		
olumn of Water in	Probe/Well					creen inte	<u>sval</u>
otal Depth in Probe	e/Well (feet btoc):	18.18		Well Screened Across / B	1.2 4	\leq	
epth to Water from	n TOC (feet):	- 12.63		_ Depth tubing / pump intake s	set approx		
olumn of Water in	Probe/Well (feet):	<u>= 5.55</u>		*Tubing/pump intake must be se			
ircle: Gallons per	foot of 1.25" (X 0.06	or 2" (X 0.163) or 4" (X	0.65)	the water table, or in the middle	of the screened interv	al for wells screened bein	ow the water table
olume of Water in	1 Probe/Well Casin	g (gal):	0.35				312
icropurge well/g	robe at a rate of 0.0	03 to 0.15 GPM until para	meters stabilize or 3 casir	ng volumes have been remov	ed. if well draws do	own below tubing or	pump intake,
op purging and s	sample as a low-yi	eld well using a no-purge	technique.				
	1764 B		At lea:	st 3 of the 4 parameters	below must stab	lize	<0.33 feet
		±3% (or		±10%			after initial drawdown
ield Parameters:		±0.2°C max)	±3%	(<1mg/L, ±0.2 mg/L)	±0.1 units	±10 mV	
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂) pH	Potential	Water Level
(gal)	(min)	(°C)	(mS/cm)	(mg/L)	1 1-3	(mV)	13,54
0.25	3	5.7	0.607	3.82	6.62	37.0	15131
0.50	6	5.5	0.629	0.93	6.69	59.7	+
0.75	9	5.7	0.576	0.47	6.80	72.9	
1.00	12	5.7	0,540	0.33	6.80	76.3	
1.25	15	5.6	0.529	0.51	6.76	79.1	
1.50	13	5.6	0.537	0.38	6, 1-1		

		4					
	-/-						
<u> </u>	-/		¥				
	$\left \left(\right) \right $						
							-
a sa naga 🕂 universi - kuna aga sa sa kacara	parameters stabili	\sim	not?	1 perlano	a ada	and tely	ever
	abilize? Yes No		NOT 010	not rechar	ye nor	and cit	
Vas flowrate betw	ween 0.03 and 0.15	GPM? Yes/100 If no, v	why not? 259	itating will	surge bl	at scre	C DXI
Nater Color:	Clear	Yellow	Orange	r Br	own/Black (Sand/Sil	t) Other.	
Well Condition:	Lock	Labeled w		Commen	its:		
Sheen: Yes No)	Odor: Yes		Notes/Commen	its:	n 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 199 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999	<u> </u>
			<u></u>		1000 T		
Laboratory Analy	/ses (Circle):	VOC GRO DRO, PAH)	and a second			
pH checked of sa	mples: Y/N	Approximate v	olume added (mL): HCI =	HNO3 =			
Purge Water		2010-101-101-101-101-101-101-101-101-101					
Gallons generated	<u>, ר ז</u>	Containerized and dispo	osed as IDW? Yes No		If No, why not?		
Disposal method:		LA Waste					
Sampler's Initials:	The						

Appendix E-2:

2020 Field Notes & Groundwater Sampling Field Data Sheets

7/22/20 Kobule F&F TITS Arrive on site: Sklynstra Purpose: Collect Gue scuples from wells Mw-1/Mw-2/Mw-3 and a duplicate from Mw-12(Jup) Weather: Lt. Rain Wind: 0 - Mah Temp: 52-F Notes Time ID 1230 Kobuk-MW1-0720 BTEX/640/040 VOC/GRO/DRO/PAH 1345 Kolack-1102-0120 1: Dub of MDZ 1400 Kobule-MW12-0720 Kdark-MW3-0720 11 1500/ MW-3 Joned For preduct @ thickness of ~ 0.01' assume It would be minor as this whell has never had product ad decided to sample. Well drew down to tip of fubing that was set @ " 0.5 btow pumped ~ 1/3 of flow through cell before well drew down and I noticed product in the cell, puppingestagestin

7/22/20 Kobule F&F [1500] Called Dustin and he instructed me to forego sampling this well and attempt, to remove as much And/product as possible from the well. > No sheen is visible on the ponds created by the excounted fank pits. [1540 well is recharging very slowly. only oproximately 0.25 gallous menared in the last 40 minutes. 1550/Lowing Site

GROUNDWA	IER SAMPL	EFORM	Kobuk F	eed and Fuel			
Project #:		17M-380	_	Site Location:	Kobuk Feed and	d Fuel	
Date:	7/22/	20	_	Probe/Well #:	MW		
Time:	17.30	>		Sample ID:		- MWI-1	0720
Sampler:	JK			7.0.449.001	_ Dun		
Weather:	Rain		-	Outside Temperature:	539F		
QA/QC Sample ID/	Time/LOCID:		-	outoide remperature.		MS/MCD Destant	10 X 11
Purge Method:	Peristaltic Puten /	Submersible / Bladder		Contraction of the	0	MS/MSD Performed	A state of the second
Equipment Used for		11	We want VII	Sample Method:	Peristaltic Pump	/ Submersible / Bladde	r) Other
and the second se	1. 5	YSI # pentral	Water Level: YI	1			_
Free Product Obse		II? Yes/No)	If Yes, Depth to Product:_				
Column of Water in		11 0-0	/	Sampling Depth	_		
Total Depth in Prob		16.99	5	Well Screened Across / B	elow water table		
Depth to Water from	1 TOC (feet):	- 10.34		Depth tubing / pump intake s	et* approx	.O feet below top of	of casing
Column of Water in		0101		*Tubing/pump intake must be se	t approximately 2 fee	et below the water table for	r wells screened a
Circle: Gallons per	foot of 1.25" (X 0.0	064) or 2" (X 0.163) or 4" (X	(0.65)	the water table, or in the middle			
Volume of Water in	1 Probe/Well Casir	ng (gal):	0.42				
Micropurge well/pr	obe at a rate of 0	03 to 0 15 GPM until par	motors stabilize as 2 assis	y volumes have been remove			
stop purging and s	ample as a low-yi	ield well using a no-purge	e technique.	y volumes have been remove	d. If well draws d	own below tubing or p	oump intake,
			Atleast	3 of the 4 parameters b	elow must sta	hilizo	T
					ciow musi siai	JillZe	<0.33 feet
Field Parameters:		±3% (or ±0.2°C max)	±3%	±10% (<1mg/L, ±0.2 mg/L)	±0.1 units	±10 mV	after initia drawdown
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	pH		1
(gal)	(min)	(°C)	(mS/cm)	(mg/L)	рн	Potential (mV)	Water Leve
0.25	5	5.56	0.767	2,95	7.22	-124,3	(ft)
0.50	10	4.31	0.709	3.76	7.36	-112,8	10:35
0.75	15	4127	DIAL	6.02	7,24		10,36
1,00	20	4,30	0.680	5198		-91.2	10,36
1.25	25	479			7117	-8517	10:36
1.09	- 65	1.01	0.677 1	5.97 -	7.141	-87.7	10.36
						-	
		/					11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
				1			
				1	1		11
	(6			
and the second se)	1			
		the second se					
id groundwater pa	rameters stabilize	? Yes No If no, why n	iot?				
		\cup					
id drawdown stabi	lize? es No I	If no, why not?					
id drawdown stabi /as flowrate betwee	lize? es No I	If no, why not? GPM? Yes/No If no, wh	y not?		/Plack (Card (City)		
id drawdown stabi /as flowrate betwee /ater Color:	lize? es No I en 0.03 and 0.15 G	If no, why not? GPM? Yee/No If no, wh Yellow	y not? Orange		/Black (Sand/Silt)	Other:	
id drawdown stabi /as flowrate betwee /ater Color: /ell Condition:	lize? (es) No I en 0.03 and 0.15 G Clear Lock (V) N	If no, why not? SPM Vee/No If no, wh Yellow Labeled with	y not?	Comments:	/Black (Sand/Silt)	are the statement	
id drawdown stabi /as flowrate betwee /ater Color: /ell Condition:	lize? (es) No I en 0.03 and 0.15 G Clear Lock (V) N	If no, why not? SPM Vee/No If no, wh Yellow Labeled with Odor: Vee/No	y not? Orange		2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	are the statement	
id drawdown stabi las flowrate betwee later Color: lell Condition: heen: Yes No	lize? (es) No I en 0.03 and 0.15 G Clear Lock ()/N	If no, why not? SPM? Yee/No If no, wh Yellow Labeled with Odor: (res)/ No S i g h T	y not? Orange I LOC ID:	Comments:	2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	are the statement	
id drawdown stabi Vas flowrate betwee Vater Color: Vell Condition: heen: Yes No	lize? (es) No I en 0.03 and 0.15 G Clear Lock (2/ N s (Circle):	If no, why not? SPM (Ve)/No If no, wh Yellow Labeled with Odor: (Yes)/No 5 1 4 h T BTEX, VOC (GRO, DRO)	y not? Orange I LOC ID: N PAH	Comments:	2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	are the statement	
id drawdown stabi Vas flowrate betwee Vater Color: Vell Condition: No No No No No No No No No No	lize? (es) No I en 0.03 and 0.15 G Clear Lock (2/ N s (Circle):	If no, why not? SPM (Ve)/No If no, wh Yellow Labeled with Odor: (Yes)/No 5 1 4 h T BTEX, VOC (GRO, DRO)	y not? Orange I LOC ID:	Comments:	2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	are the statement	
oid groundwater pa bid drawdown stabi Vas flowrate betwee Vater Color: Vell Condition: heen: Yes No aboratory Analyses H checked of samp urge Water	lize? (es) No I en 0.03 and 0.15 G Clear Lock (2/ N s (Circle): eles: Y/N	If no, why not? SPM Ves/No If no, wh Yellow Labeled with Odor: (res/ No S / 1 G h T BTEX, VOC GRO DRO, Approximate volu	y not? Orange LOC ID: N PAH Ime added (mL): HCI =	Comments:	2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	are the statement	
id drawdown stabi /as flowrate betwee /ater Color: /ell Condition: heen: Yes No aboratory Analyses H checked of samp	lize? (es) No I en 0.03 and 0.15 G Clear Lock (2/N s (Circle): Mes: Y/N	If no, why not? SPM (Ve)/No If no, wh Yellow Labeled with Odor: (Yes)/No 5 1 4 h T BTEX, VOC GRO, DRO, Approximate volu Containenzed and dispose	y not? Orange LOC ID: N PAH Ime added (mL): HCI =	Comments: Notes/Comments:	2.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1	are the statement	

GROUNDWAT	FER SAMPLE	FORM	Kobuk Fe	ed and Fuel			
Project #:		17M-380		Site Location:	Kobuk Feed and	i Fue)	
Date:	7/22/	20		Probe/Well #:	MWZ	2	
Time:	1345	·		Sample ID:	1Cobak	-MW2-0	120
Sampler:	JK	1			0		
Weather:	Claud	y / Lt Rain		Outside Temperature:	55F		
QA/QC Sample ID/T	ime/LOCID:	bute - MW 1		1400/MW	17	MS/MSD Performed	Yes
Purge Method: F	61	Submersible / Bladder	- UTLOF	Sample Method:			
Equipment Used fo		YSI#	Water Level:	Sample Metiod.	Fensiallic Pump	/ Submersible Bladder	JOtner
Free Product Obser				1			
Column of Water in		in rearing	If Yes, Depth to Product:				
Total Depth in Probe		18.	35	Sampling Depth			
Depth to Water from		1/0	10	Well Screened Across / B			
Column of Water in F		- ((,)	10	Depth tubing / pump intake s		feet below top o	
		And the Constant of the Constant		*Tubing/pump intake must be s			
		64) or 2" (X 0.163) or 4" (X	0.65)	the water table, or in the middle	of the screened inte	rval for wells screened belo	w the water ta
Volume of Water in 1	Probe/Well Casin	ig (gal):					
Vicropurge well/pro	be at a rate of 0.0	03 to 0.15 GPM until para	meters stabilize or 3 casing	volumes have been remove	ed. If well draws o	lown below tubing or p	ump intake,
stop purging and sa	imple as a low-yi	eld well using a no-purge	technique.				1
		1 mar 1 mar 1	At least	3 of the 4 parameters I	below must sta	bilize	-0.00
		±3% (or		±10%			<0.33 fe after ini
Field Parameters:		±0.2°C max)	±3%	(<1mg/L, ±0.2 mg/L)	±0.1 units	±10 mV	drawdo
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	pH	Potential	Water Le
(gal)	(min)	(°C)	(mS/cm)	(mg/L)	105	(mV)	(ft)
0.25	5	3,80	0.629	2164	6:85	-1210	
0,50	10	3,95	0.659	1.15	6.82	-5019	
0.75	15	3.87	0:065	0.48	6.81	-34.9	
1,00	20	3.81	0.00%	0.69	6.81	-31.2	-
1.75	25	3.76	0.670 1	0.57 ×	6.801	30.62	
1.50	30						
)				
				0 1			
				- th			-
				P		the second second	
			/~				1
			-8			-	
						1	
id groundwater pa	rameters stabilize	? Yes) No If no, why r	not?	2	4		
)id drawdown stabi	lize? Yes / No	If no why rlot?					
Vas flowrate betwee	en 0.03 and 0.15 (SPM? Yes/No If no, wh	y not?			-	
Vater Color:	Clear	Yellow	Orange	Brow	/n/Black (Sand/Silt)) Other:	
Vell Condition:	Lock: Y / N	Labeled with	LOC ID: Y / N	Comments			
sheen: Yes (No)		Odor: (Yes) No		Notes/Comments:	and the second second		
\cup		mile	4				
	s (Circle):	TEX VOO GRO DRO	-				
aboratory Analyse		ONO DRU,					
aboratory Analyses H checked of samp		Annroximate vol	Ime added (ml.): HCI =	HNO.=			
H checked of samp		Approximate volu	ume added (mL): HCI =	HNO3 =			
		Approximate vol	•	HNO3 =	If No, why not?		

GROUNDWA	TER SAMPLE	E FORM	Kobuk Fe	eed and Fuel				
Project #:		17M-380	Site Location: Kobuk Feed and Fuel					
Date:	7/22/	20		Probe/Well #:	Mh2-3			
Time:				Sample ID: Kobuk=Mto 5-0			120	
Sampler:	JK							
Weather:	Sun	Y		Outside Temperature:	55°F			
QA/QC Sample ID		(S/MSD Performed?	Yes/No	
Purge Method:	Peristaltic Pump /	Submersible / Bladder		Sample Method:			0	
Equipment Used I		- Martin - Contraction - Contr	Water Level:	Sample wetrod:	Penstanc Pump / S	ubmersible / Bladder /	Other	
	erved in Probe/We	()	If Yes, Depth to Product:	11,56 70.	OI produ	et		
Column of Water i			in res, Depurto Product	Carlos Carlos and Color	er prote			
Contract of the Contract of		The	18.19	Sampling Depth				
Total Depth in Probe/Well (feet btoc):		10.17	Well Screened Across / Below water table					
				Depth tubing / pump intake set* approx feet below top of casing				
Column of Water in Probe/Well (feet): = Circle: Gallons per foot of 1.25" (X 0.064) or 2" (X 0.163) or			*Tubing/pump intake must be set approximately 2 feet below the water table for wells screene					
			0.65)	the water table, or in the middle	of the screened interval	for wells screened below	the water tab	
Volume of Water in	1 Probe/Well Casir	ng (gal):						
Micropurge well/p	robe at a rate of 0.	03 to 0.15 GPM until param	neters stabilize or 3 casing	g volumes have been remove	d. If well draws dow	n below tubing or pu	mp intake,	
stop purging and	sample as a low-yi	eld well using a no-purge						
	At lea			t 3 of the 4 parameters below must stabilize				
±3% (or			±10%				<0.33 fe after init	
Field Parameters:		±0.2°C max)	±3%	(<1mg/L, ±0.2 mg/L)	±0.1 units	±10 mV	drawdov	
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	pH	Potential	Water Le	
(gal)	(min)	(°C)	(mS/cm)	(mg/L)		(mV)	(ft)	
			A			01		
			10	1200	\downarrow	KU		
		IICE	w 1/0	pur.				
	ALL			1		e up	1	
	VV.			I alect	CON			
		1 10	11/-1	room				
	1	7 151	fur! "					
	200.							
	0		A	ſ				
	- 1	La rell			LAR	- 1	-	
	105	per			ND Y		-	
			110					
1			INN		1 5			
			10 0			Je		
Did					I		-	
		e?Yes/No Ifno,whym		-				
Did drawdown sta	bilize? Yes / No	If no, why not?						
Was flowrate betw	een 0.03 and 0.15 (GPM? Yes/No If no, why	y not?					
Water Color:	Clear	Yellow	Orange	Brow	/n/Black (Sand/Silt)	Other:		
Well Condition: Lock: Y / N Lab		Labeled with	LOC ID: Y/N	Comments:				
Sheen: Yes / No		Odor: Yes / No		Notes/Comments:			_	
Laboratory Analys	es (Circle):	BTEX, VOC, GRO, DRO, I	PAH					
pH checked of san	nples: Y/N	Approximate volu	me added (mL): HCI =	HNO3 =				
Purge Water								
Gallons generated:		Containerized and dispose	d as IDW? Yes / No		If No, why not?			
영상 영화 영상 영	OL Water / CERCL/		CALCENSIS STORES		and const there are			
the second se		a sunda la						

Appendix E-3:

2021 Field Notes & Groundwater Sampling Field Data Sheets

9/24/21 Kobule FeF 10750 Arrile on site Purpose i Collect Gow samples from 3 wells on site Weather: Snowing Temp: 310- Wind: O- Mph 10800 Measured product in well MW-3 @ 13,28' bloc to an approximate thickness of 0,01 MW-Z/12 -7 MWZ-0921 @0930 MW12-0921 @0945 L> VOL/GRO/DRO [PAH MW-1 - MW1-0921@1110 4BTEX/URD/DRD 11307 Leaving Site Rite in the Rain.

GROUNDWAT				ed and Fuel	Kobuk		_	
Project #	1	7M-365			_			
Date:	9/24/2021							
Time:	1110			Sample ID:	MW (-092	1		
Sampler:	JK				200			
Weather:	Snowi	101		Outside Temperature:	SLE		-	
A/QC Sample ID/1) _				MS/MSD Performed	1? Yes No	
Durge Method:	Pariataltic Dump 1	Submersible / Bladder		Sample Method:	Peristaltic Pump	Submersible Blade	ler & Other	
Equipment Used for		2 1 .	Water Level: YH	Campio mentour		e		
Free Product Obse			If Yes, Depth to Product:	~				
		en's restind	in res, Depuir to Product_	Contraction of the second				
Column of Water in	THE PARTY OF ANY OTHER	16.90	r	Sampling Depth Well Screene Across	Polow water table			
Total Depth in Prob			2		13	5		
Depth to Water fron			/	_Depth tubing / pump intake	Set appier.		op of casing	
Column of Water in			>	*Tubing/pump intake must be se				
Circle: Gallons per	foot of 1.25" (X 0.	064) or 2" (X 0.163) or 4" (the water table, or in the middle	of the screened interval	i for wells screened belo	w the water table	
Volume of Water in	1 Probe/Well Cas	sing (gal):	0.33					
				sing volumes have been re	moved. If well drav	vs down below tubi	ng or pump	
		a low-yield well using a	no-purge technique.		and the second second		-	
			At least	3 of the 4 parameters	below must stab	ilize	<0.33 fee	
		±3% (or		±10%		after initia		
Field Parameters:		±0.2°C max)	±3%	(<1mg/L, ±0.2 mg/L)	±0.1 units	±10 mV	drawdow	
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	pН	Potential	Water Lev	
(gal)	(min)	(°C)	(mS/cm)	(mg/L)		(mV)	(ft)	
0.25	5	4.29	0.912	5.73	7,18	7.3	1	
0.50	10	4.19	0.836	1.93	7.18	-2.3	4	
0.75	15	4.15	0.761	\$106	7.13	-6.5	-	
1.00	20	47.11	0.728	0.73	7.09	-6.8		
1.25	25	4.09	0715	0.62	1.06	-7.5		
1,50	30	4.09	0.718	0.63	7.05	-9.6		
	~			S				
)			1			1	
	/						-	
	/	1		-			-	
1	6. C. C. D. L.		\mathbf{V}				1	
(K					
		\sim	-1			1	1	
					1			
	-	ize? (es) No If no, wh	y not?					
Did drawdown sta	\sim	-						
Was flowrate betw	-	5 GPM? Yes No If no,	why not?					
Water Color:	Clean	Yellow	Orange	Brow	wn/Black (Sand/Silt)	Other.		
Well Condition:	Lock (V		th LOC ID: Y	Comment	s:			
Sheen: Yes No	0	Odor: Yes		Notes/Comment	s:		-	
Laboratory Analys	ses (Circle):	BTEX VOC, GRO DRO	PAH			_		
		0.00						
Purge Water								
ange muler	2.0		osed as IDW? (Tes) No		If No why not?			
Gallons generated	0.0	Containenzed and diend						
Gallons generated Disposal method: I			bsed as IDW (res) No		in rid, why not? _			

Time:	9/24/2021 0936 Source 1 stattic Pump / Sampling: red in Probe/W	S MW IZ - O Submersible / Bladder YSI # Readed	921 /094 Water Level: 414	Site Location: Probe/Well #: Sample ID: Outside Temperature: 5/ MWD - 12 Sample Method:	Kobuk MW- Z MW Z-092 3 1° F Peristaltic Pump	MS/MSD Performed	1? Yes/NG
Time:	0936 Snow ne/LOCID: / ristaltic Purp / Sampling: red in Probe/W	S MW IZ - O Submersible / Bladder YSI # Readed	1	Sample ID: Outside Temperature: _ 15/MW - 12_	MW Z-092 31°F	MS/MSD Performed	1? Yes/No
Sampler: JK Weather: G QA/QC Sample ID/Tin Purge Method: Pe Equipment Used for : Free Product Observ Column of Water in F Total Depth in Probe/ Depth to Water from T	ne/LOCID: / nstaltic Pump / Sampling: red in Probe/W	Submersible / Bladder YSI # Render	1	Outside Temperature: _ 15/MW - 12	31°F	MS/MSD Performed	1? Yes No
Weather: QA/QC Sample ID/Tin Purge Method: Equipment Used for : Free Product Observ Column of Water in F Total Depth in Probe/ Depth to Water from T	Snon ne/LOCID: / Instaltic Pump / Sampling: red in Probe/W	MW IZ - O Submersible / Bladder YSI # Reafel	1	15/mw-12		0	1? Yes No
QA/QC Sample ID/Tin Purge Method: Pe Equipment Used for : Free Product Observ Column of Water in F Total Depth in Probe/ Depth to Water from T	ne/LOCID: / ristaltic Pump / Sampling: red in Probe/W	MW IZ - O Submersible / Bladder YSI # Reafel	1	15/mw-12		0	1? Yes No
Purge Method: Pe Equipment Used for : Free Product Observ Column of Water in F Total Depth in Probe/ Depth to Water from T	ristaltic Pump / Sampling: red in Probe/W	Submersible / Bladder YSI# <u>Rerfal</u>	1	1	Peristaltic Pump	0	1? Yes No
Equipment Used for Free Product Observ Column of Water in F Total Depth in Probe/v Depth to Water from T	ristaltic Pump / Sampling: red in Probe/W	Submersible / Bladder YSI# <u>Rerfal</u>	1	1	Peristaltic Pump	Contraction (D)	
Equipment Used for Free Product Observ Column of Water in F Total Depth in Probe/v Depth to Water from T	Sampling: red in Probe/W	YSI# Rental	Water Level: 4/+	Contrast of the local data when the local data		/ Submersible Blad	der / Other
Free Product Observ Column of Water in F Total Depth in Probe/N Depth to Water from T	ed in Probe/W	0					
Column of Water in F Total Depth in Probe/ Depth to Water from T		ell? Yes/No/	If Yes, Depth to Product:	A			
Total Depth in ProbeA Depth to Water from T	rope/Well	U		Sampling Depth			
Depth to Water from T	1	15.35	5	Well Screened Across	Below water table		
		12,47		Depth tubing / pump intal	11	1,5 feet below t	op of casino
Column of Water in P		11 -0		*Tubing/pump intake must be			
		064) on 2" (X 0.163) or 4" (the water table, or in the midd			
	0		x 0.05)	the water table, or in the midd	le of the screened merve	II TOT Wails Screened Deid	w the water table
Volume of Water in 1	Probe/Well Ca	sing (gal):	0.2	-			
				asing volumes have been r	emoved. If well dram	ws down below tubi	ng or pump
intake, stop purging	and sample as	a low-yield well using a					1
			At leas	st 3 of the 4 parameters	s below must stat	oilize	<0.33 fe
Field Parameters:		±3% (or ±0.2°C max)	±3%	±10% (<1mg/L, ±0.2 mg/L)	±0.1 units	after initi drawdow	
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	pH	Potential	Water Le
(gal)	(min)	(°C)	(mS/cm)	(mg/L)		(mV)	(ft)
1).25	5	3.11	0.729	1.46	7.01	46.4	
0.50	10	281	0:708	1.09	6.93	33.9	
0.55	15	2.49	0.689	0,88	6.84	21,1	
1.00	20	2.41	01680	1.06	6.82	13.7	1.
1.25	15	2.40	0.677	0.75	6,82	7.6	
1.50	30	2,39	0.676	0.66	6.82	1.5	
1.75	35	7.38	0.674	0.60	6.83	2.4	1
	-					1.00	
		\sum				4	
		/					
		/	CI	1	1		
	/				1		
	- (16				1
	-					1.	

Appendix E-4:

2022 Field Notes & Groundwater Sampling Field Data Sheets

10 8/26/22 Kobuk F&F 1415 Arrive an site: 5Klynstra Purpose: Collect Annual GW samples Weather: 58.6497 Cloudy Temp: K Wind: O-3 Mph lime ID Notes BTEX/GRO/DPO/PAH MW1-0822 1530 1700 NW2-0822 VOL/ UPO/PRO/PAH 1800 MW3-0822 1715 NW12-0822 [835] Leoving Site.

ROUNDWAT			Kobuk Feed		Kobuk			
oject #:		M-365		te Location:	Kobuk			
ate: 8	12(12022		Pr	robe/Well #:	MW-1 0922			
me:	1530)	Si	ample ID:	MW 1 -0822			
ampler: J	к				8			
eather:	Cloud	7	0	utside Temperature: <u>5</u>				
A/QC Sample ID/Ti	me/LOCID:	(1	MS/MSD Performed? Y	es/ No	
		ubmersible / Bladder	S	ample Method:	Peristaltic Pump /	Submersible / Bladder / C	Other	
quipment Used for	Sampling:	YSI# Rontal W	ater Level: RIT			1		
ree Product Obser		1? Yes/No) If	Yes, Depth to Product:	1				
olumn of Water in		C	S	ampling Depth				
otal Depth in Probe/		16.98	v	Vell Screened Across / Be	low water table			
		- 11.23	C	Pepth tubing / pump intake s	et" approx. 17.7	feet below top of c	casing	
epth to Water from		= 5.75		Tubing/pump intake must be se	approximately 2 feet t	elow the water table for we	ils screened acros	
olumn of Water in F				ne water table, or in the middle of				
		54) br 2" (X 0.163) or 4" (X 0	0.37					
olume of Water in 1								
Aicropurge well/pro	obe at a rate of 0.	03 to 0.15 GPM until paran	neters stabilize or 3 casing	volumes have been remov	ed. If well draws d	lown below tubing or p	oump intake,	
top purging and s	ample as a low-yi	ield well using a no-purge	tecnnique.					
		-	At least 3	3 of the 4 parameters t	GOW MUSE SEDD		<0.33 feet	
		±3% (or		±10% (<1mg/L, ±0.2 mg/L)	±10 mV	after initial		
Field Parameters:		±0.2°C max)	±3%		±0.1 units	Potential	Water Level	
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	pH		(ft)	
(gal)	(min)	(°C)	(mS/cm)	(mg/L)	7.09	(mV) -107.9	11.25	
0.25	5	5.4	0.708	0.55			11.25	
0.50	10	4.9	0.667	0.37	7.19	-120.3		
0.75	15	4.8	0.637	6.31	7.22	-124.3	11.25	
1.00	20	4.8	0.630	0.32	7.22	-125.1	11.25	
1.25	25	5.0 V	0.626 ×	0.30 /	7.14 1	-125.0.	11.25	
_				S				
					1.			
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1		/						
		1	25 A	5				
			YE	-				
			I					
		-			· · · · ·			
	1.							
Concernence and the second		lize? Tes No If no, why	not?					
		If no, why not?						
Was flowrate betw	ween 0.03 and 0.1	5 GPM? (Yes)No If no, v	vhy not?					
Water Color:	Clear	Yellow	Orange	Br	own/Black (Sand/Sil	t) Other:		
Well Condition:	Lock	Labeled wit	h LOC ID: TN	Commen	ts:			
Sheen Yes / No	0	Odor Pesy No	\cup	Notes/Commer	its:			
		U						
0	ees (Circle)	BTE, VOC GRO DRO	(PAH)				_	
		1-						
Laboratory Analy	aca (on cic).	0						
Laboratory Analy	asa (on oro).	0 -						
Laboratory Analy Purge Water	1.5		and as IDW/2 Cost Jun		If No. why not?			
Laboratory Analy	1.5	Containerized and dispo	sed as IDW? (res) No		If No, why not?			

ROUNDWAT		1977		Other Lawseller	Kobuk				
roject #:	The Carton	7M-365		Site Location:					
Date: 8/20/2022				Probe/Well #:	MW- Z MW Z=0822				
ime:	1700			Sample ID:	MW 2_082				
iampler: J	K			1	2				
Veather:	Cloudy	/	1	Outside Temperature:	2	MS/MSD Performed?	VestNo		
QA/QC Sample ID/T	ime/LOCID:	11012-08	22/17/5	1 mw -12					
urge Method	eristaltic Pump PS	ubmersible / Bladder		Sample Method:	Peristaltic Pump	Submersible / Bladder	Other		
quipment Used for	r Sampling:	YSI#N	Vater Level:						
ree Product Obser	ved in Probe/We	II? Yes/	f Yes, Depth to Product:_	-					
column of Water in	Probe/Well			Sampling Depth					
otal Depth in Probe	/Well (feet btoc):	18:3	5	Well Screened Across / B	the second s				
Depth to Water from	TOC (feet):	. 12.8	4	Depth tubing / pump intake s	set* approx. 15, 3	feet below top o	f casing		
Column of Water in F	Probe/Well (feet):	= 5.5	1	*Tubing/pump intake must be se					
		64) or 2" (X 0.163) or 4" (X 0	0.65)	the water table, or in the middle	of the screened interv	al for wells screened below	the water table		
/olume of Water in 1		2	0.35						
				an valumes have here a	and if wall draws	down below tubing or	pump intake		
Micropurge well/prostop purging and s	obe at a rate of 0 ample as a low-v	.03 to 0.15 GPM until para ield well using a no-purge	meters stabilize or 3 casi technique.	ing volumes have been remo	veu. II weit draws	down below tubility of	Famb urger		
			and the second	st 3 of the 4 parameters	below must stat	oilize			
			711 100				<0.33 feet after initial		
Field Descenter		±3% (or ±0.2°C max)	±3%	±10% (<1mg/L, ±0.2 mg/L)	±0.1 units	±10 mV	drawdown		
Field Parameters: Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	pH	Potential	Water Level		
(gal)	(min)	(°C)	(mS/cm)	(mg/L)		(mV)	(ft)		
(gai) 0.25	5	3.3	0.636	0.75	6.98	-57.5	12.87		
0.50	10	3.3	0.632	0.52	6.98	-65:3	12.87		
0.75	15	3.2	0.627	0.38	6.97	-72.7	12.87		
1.00	20	3,3	0.624	0.32	6.91	-74.4	12.88		
1.25	25	3.2	0.624	0.29	603	-75.0	12.88		
1.07	~,	7.6	0.001		0.				
-									
)						
			/				1		
	-	- /		11					
			K	K					
1		10	$ \rightarrow $	l		1			
				-	-		-		
					-		-		
	the second						1		
Did groundwater	parameters stabil	ize? Yes No If no, why	not?						
Did drawdown sta	bilize? (res) No	If no, why not?							
Was flowrate betw	veen 0.03 and 0.1	5 GPM? (es)No If no, v	why not?						
Water Color:	Clear	Yellow	Orange	Br	own/Black (Sand/Si	it) Other:			
Well Condition:	Lock: Y/N	Labeled wit	h LOC ID: Y/N	Commen	ts:				
Sheen: Yes INO)	Odor: Tes INo		Notes/Commen	ts:				
Sileen: res (NO	·								
Laboratory Anch	Eos (Circlo)	BTEX, COC, GRO, DRO	PAH						
Laboratory Analy	ses (circie):	BIEA, NOC, SRO, DRO							
Purge Water	1								
Purge Water Gallons generated	225	Containerized and dispo	sed as IDW Yes No		If No, why not?	<u></u>			
Gallons generated		Containerized and dispo	sed as IDW Yes No	0	If No, why not?				

GROUNDWAT	SIL CAUTER			eed and Fuel					
Project #:	10 - 10 March 10	7M-365		Site Location:	Kobuk				
Date:	8/ /2022			Probe/Well #:	<u>MW- 3</u>				
rime: _	1800			Sample ID:	MW 3 -082				
Sampler:	JK			,					
Veather:	Clou	dy		Outside Temperature:	2-1		0		
QA/QC Sample ID/	Time/LOCID:	/ _		-		MS/MSD Performed	? Yes No		
Purge Method:	Peristaltic Pump / S	Submersible / Bladder		Sample Method:	Peristaltic Pump D	Submersible / Bladder	/ Other		
Equipment Used fo	or Sampling:	YSI#	Water Level:						
Free Product Obse	rved in Probe/We	II? Yes/No	If Yes, Depth to Product:_	1					
Column of Water in	n Probe/Well	0		Sampling Depth					
Total Depth in Probe	a.c	18.1	9	Well Screened Across / B	elow water table				
Depth to Water from		. 12.0	06	Depth tubing / pump intake s	et approx. 13.	5 feet below top	of casing		
Column of Water in		6		*Tubing/pump intake must be se		below the water table for	wells screened acro		
	-	64) or 2" (X 0.163) or 4" (X		the water table, or in the middle					
			0.35	and mater second of an area mouto			and the second second		
Volume of Water in		3 (3 - 1		-					
Micropurge well/p	robe at a rate of 0.	03 to 0.15 GPM until para	meters stabilize or 3 casi	ng volumes have been remov	ved. If well draws	down below tubing o	or pump intake,		
stop purging and s	sample as a low-y	ield well using a no-purg					1		
		1	At leas	st 3 of the 4 parameters I	pelow must stab	llize	<0.33 feet		
		±3% (or		±10%			after initial		
Field Parameters:		±0.2°C max)	±3%	(<1mg/L, ±0.2 mg/L)	±0.1 units	±10 mV	drawdown		
Water Removed	Time Purged	Temperature	Conductivity	Dissolved O ₂	pН	Potential	Water Level		
(gal)	(min)	(°C)	(mS/cm)	(mg/L)		(mV)	(ft)		
0.25	5	7.8	0:540	6.16	6.76	-77.4			
0.50	10	9.4	0.514	7.25	6.80	-53.9	-		
0.75	15			1 M 1			1		
1.00	20								
1.25	25								
		· · · · · · · · ·							
1					1				
1							-		
	1 5	1.1.1	0	0	0				
	A all	a New?	hlow	ALARE	First	1	-		
	Wen	forces	man 1	enon	1	1			
-	÷	100 ant	0.0. 0110	of minu	Lin Li	Dal			
		1000	ng even	an mine p	upn TI				
			/						
Did groundwater	parameters stabili	ize? Yes (No) If no, why	not?	t					
Did drawdown sta	abilize? Yes No	If no, why not?	_				_		
Was flowrate betw	ween 0.03 and 0.15	5 GPM? Yes No If no,	why not?				_		
Water Color:	Clear	Yellow	Orange	Bro	own/Black (Sand/Sill	t) Other:			
Well Condition:	Lock: Y (N)	Labeled wi	th LOC ID: YN	Comment	s:	1. J. J. C. B.			
Sheen: Yes / No	V	Odor: Yes No		Notes/Comment	s:				
		USI	rong oder						
-		BTEX, VOC, GRO, DRO	PAH3						
Laboratory Arrely		BILL, 100, 010, DA							
Laboratory Analy	ises (Circle):								
	ises (Circle):								
Purge Water	45		- 0		H1) - 1				
Purge Water Gallons generated	45	Containerized and dispo	ised as IDW?	41	If No, why not?				

Appendix F: Disposal Documents

NON-HAZARDOUS WASTE MANIFEST 186982-LH

Plea	ise prir	nt or type	(Form designed for use on elite	(12 pitch) typewriter)	· · · ·					
			N-HAZARDOUS	1. Generator's US EPA			Manifest Document No.		2.	Page 1
	<u> </u>	<u>W</u> A	STE MANIFEST	V	SQG			186982A		of 1
	3.		r's Name and Mailing Address	D SENCERATES OF A	ALASKA RESOURCES	o man	DONING IN	CASE OF EME	RGE	NCY CALL
		ALA:	SKA RESOURCES & EN INTERNATIONAL ST.	WIRDNMENTA	3520 INTERNATIONAL S	& EINVIR T	ROTATIVIE 			
Maren		FAIR	BANKS, AK 99701		FAIRBANKS, AK 99701		11000	00-899-4672		
	-		r's Phone ()				4000	L		
1999 (A)	1		ter 1 Company Name		6. US EPA ID Number		A. State Transp		09777	
			COLOGY		MIK593743838		B. Transporter		-0104	
	7.	Transport	ter 2 Company Name		8. US EPA ID Number		C. State Transp			
							D. Transporter			
	9.	US E	ed Facility Name and Site Address		10. US EPA ID Number		E. State Facility	rs iD		
1		2020	VIKING DRIVE		a 1 sport on on one on a s on a		E Ecolitula Dha		<u> </u>	
		ANC	HORAGE, AK 99501		AKR000004184		F. Facility's Pric	ine 907-258-15	58	
alitera.	11	W/AGTE	DESCRIPTION				ontainers	13.		1/
						No.	Туре	Total Quantity		14. Unit Wt./Vol.
	a.	HM	δ. λ. λ	L 250577			- ypo	cutanity	DRAZDANIKA UKIGANI	
			Material Not Regulated	by DOT		4	TP.		140	G
						, i				
6	b.		an a	512-12-12-12-12-12-12-12-12-12-12-12-12-1						
Ĕ	ļ							•		
N										
GENER	C.				28008/03/09/06/02/02/02/02/02/02/02/06/06/06/06/06/06/06/06/06/06/06/06/06/	1	·			
A T										
T O										
R	d.									
Sistema										
	G. /	Additiona	I Descriptions for Materials Listed Abov	e	(TOO	1C)	H. Handling Co	des for Wastes Listed A	bove	
		I) EAC)325 PFOS/PFOA COI	VTAMINATED W	ASTEWATER (TPA	197	DIVINO			
	10	On estat l	- 		daran kuran makan munakan mulan mulan katalah katalah mulan manan munakan munakan panan munah munakan penyenye					
		Shipp	er's Certification: This is	to certify that th	ne above-named materials	are prop	erly classif	ied, described,	,	
Militia		packa	aged, marked and labele	d, and are in pro	per condition for transport	ation acc	cording to t	he applicable r	egula	tions
		of the	Department of Transpor	tation						
		7 ////								
	16.	GENERA	ATOR'S CERTIFICATION: I hereby cer	tify that the contents of this	s shipment are fully and accurately describe	ed and are in	all respects			
		in proper	condition for transport. The materials of	lescribed on this manifest a	are not subject to federal hazardous waste	regulations.				
								Г		Date
	Prin	ited/Type	d Name		Signature				Month	Day Year
		నంక	n Kiuch		las m				1	9 23
Ţ	17.	Transpo	rter 1 Acknowledgement of Receipt of N	/aterials					(Date
FRAZSPORFER	Prin	ted/Type	d Name	*****	Signature 7		Januar		Month	Day Year
S	1	an	maint		Ce Jum Wg	all			1	9 23
ğ	18.	Transpo	rter 2 Acknowledgement of Receipt of N	<i>N</i> aterials	1 1					Date
Ţ	Prin	nted/Type	d Name		Signatore				Month	Day Year
Ŕ		ac	h Hamilton	1					23	0aa3
F	19.	Discrepa	ncy Indication Space							•
A										
C										
	20.	Facility 0	wher or Operator: Certification of receipt	ot of the waste materials co	overed by this manifest, except as noted in	item 19.		-		
					<u> </u>		-	l		Date
$\overline{\mathbf{V}}$	-Prin 1	ted/Type	d Name A'	\sim	Signature (200					Day Year
•	1	\angle	ITY LIFO		- 1- Mungel	rm	ruf	l	\mathcal{D}	100 00
CI	-14	© 200	2 LABELMASTER® (800) 621-	5808 www.labelmas	ster.com		,		D ON RECYCLE SING SOYBEAN	

NON-HAZARDOUS WASTE

Drum Tracking Log for Manifest Number 186982A

Manifest 186982A		Arrived 02-MAR-23				Gen ALASKA RESOURCES & ENVIRONMENTAL SERVICES				Tsdf US ECOLOGY ALASKA LLC			
Document	lte m	Line	Profile	Туре	Size	Oil	Fuel Wate	Antifree	ze Sludge	•	Solids	Location	
D46779	1	1	EA0325	TP	275	0	140	0	0	0		PAD2: 934	6.40 P, 140.00 G
				То	tals:)	140	0	0	0			

Af

CERTIFICATE OF US ecology DISPOSAL/RECYCLE

GENERATOR:

1

ALASKA RESOURCES & ENVIRONMENTAL SERVICES 3520 INTERNATIONAL ST. FAIRBANKS, AK 99701

DISPOSAL FACILITY: US ECOLOGY ALASKA LLC 2020 VIKING DRIVE ANCHORAGE, AK 99501

EPA ID NUMBER: VSQG MANIFEST/DOCUMENT #: 186982A DATE OF DISPOSAL/RECYCLE: MAR-02-2023

- LINE WASTE DESCRIPTION
 - CONTAINERS TYPE QUANTITY UOM PFOS/PFOA CONTAMINATED WASTEWATER 1 TΡ 140 (TP275)

G

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

PREPARED BY: Dary Elirard	10	uen (1 0 0009
SIGNATURE: Manueller	DATE:	MAR () 2 2023
425 Outer Springer Loop Road - Palmer, AK 99645 - (907) 258-1558 - Fax (907) 746-3651 - T	oll Free (877) 375-5040