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December 27, 2022

Nickolas Kuhlmann
Project Manager, Crowley Fuels, LLC
201 Arctic Slope Ave.
Anchorage, AK 99518

Subject: Report for October 2022 Groundwater Monitoring Event; Nenana Header and Rail Line Areas, Nenana, Alaska; ADEC File Nos. 110.38.010 & 110.38.011

Dear Mr. Kuhlmann:

This letter summarizes the results of groundwater monitoring conducted in October 2022 by DNA Environmental Consultants, LLC (DNA) at the Nenana Header and Rail Line Area sites located in Nenana, Alaska (Attachment 1, Figures 1 and 2). Nenana is located approximately 55 miles southwest of Fairbanks, Alaska, on the Parks Highway. The site is situated on the south shore of the Tanana River, at the confluence with the Nenana River.

The site is located within Bureau of Land Management Public Land Survey Section 14, Township 4 South, Range 8 West, Fairbanks Meridian. Portions of the site are owned and/or managed by the City of Nenana and the Alaska Railroad (AKRR). Crowley previously operated at the site under lease agreements with the City of Nenana.

PROJECT OBJECTIVE

The objective of groundwater monitoring in 2022 was to continue the collect of data to evaluate both dissolved-phase and separate-phase groundwater contaminant plumes. The data may be used as a baseline for future remedial work at the site. Deviations from the associated work plan for the 2022 work included additional laboratory testing for constituents normally associated with leaded fuels: total lead; and the common leaded fuel additives 1,2-dichloroethane (DCA) and 1,2-dibromoethane (EDB).

SITE BACKGROUND

Operational History

Beginning in 1916, the Nenana and Tanana River confluence area served as a rail depot connecting the AKRR rail line with barges operated by both the AKRR and others (Northern Commercial Company and American Yukon Navigation Company) on the Tanana and Yukon Rivers (Combs, 2019). The Alaska Railroad, as mandated by Congress, established docks and various terminal facilities at Nenana along the Tanana River between 1916 and 1923, with May 23, 1923, marking the inauguration of river transportation service by the AKRR on the Yukon and Tanana rivers (Combs, 2019). Between 1933 and 1951, the AKRR acquired and operated 13 barges, six of which were used to move bulk oil, general fuels, and JP-4 (Combs,

2019). The Alaska Railroad sold the barge business to Yutana Barge Lines in 1951 (Combs, 2019; R&M 1997).

Three tank farms existed at the site: the upper tank farm, the middle tank farm, and the lower tank farm. The lower tank farm was configured to receive and distribute Jet A, the upper tank farm was used to transfer unleaded, aviation, and diesel to barges, and the middle tank farm was used for overflow storage of Jet A from the lower tank farm. At one time, the middle tank farm was connected to piping that feed a single marine header. Additional former tank locations and the use of steel drums to move fuel are evident in historical photographs of Nenana.

The former Marine Header (Header Area) and former Rail Line Areas (Rail Line Area) are located adjacent to the Tanana River for ease of loading fuel onto barges for transportation to destinations in interior Alaska (see Attachment 1, Figures 1 and 2).

Marine Header Area

The former Header Area was used for decades for transferring fuel between docked barges and the Middle Tank Farm. The exact date of installation of the header and tank farm is unknown but understood to have been originally built and operated by Standard Oil Company (LCMF 2009). Crowley began operation at the site and the header in approximately 2006. The site was previously operated by Yutana Barge Lines and Yukon Fuel Company (YBL/YFC). The header was allegedly comprised of one 6-inch, one 4-inch, and four 3-inch fuel pipelines with a rear capacity of 22,400 barrels. After the discovery of contamination in 2010, integrity testing of the header pipelines was conducted to determine the source of impacted soil. Hydrostatic integrity testing indicated no deficiencies and therefore hydrocarbon impacts are believed to be related to historical site activities conducted under AKRR and YBL/YFC operating periods dating back to the early 1900s (OASIS 2010).

Rail Line Area

The former Rail Line area is an area where rail cars with fuel were allegedly on or off loaded, transferring fuel to or from the Middle Tank Farm or, before the construction of the Middle Tank Farm, drum storage areas. Or the source of impact at this area may be the former fuel line between the Lower and Middle tank farm or the one between the Middle Tank Farm and the former Header Area. This area has not been used for fuel transfer operation since Crowley began operations in approximately 2006. Again, discoveries at this location are believed to be related to historical site activities dating back to the early 1900s (OASIS 2010).

Site Discovery and Characterization Work

In May 2010, a petroleum hydrocarbon release at the Header Area was identified during maintenance work and was reported to the Alaska Department of Environmental Conservation (ADEC; OASIS 2010). Later, in August 2010, a second area of petroleum hydrocarbon impact was discovered during utility line trenching along an abandoned section of Alaska Railroad rail track in the area of historical loading and unloading of bulk fuels.

Site characterization work was conducted in September and October 2010 that included the installation of groundwater monitoring wells MW-1 through MW-5. In June 2013, eight additional groundwater monitoring wells, identified at MW-6 through MW-13, were installed by Ahtna Engineering Services, LLC (AES). These

replaced six temporary well points and added two additional delineation wells (Weston 2013). In 2014, groundwater monitoring wells MW-14 through MW-16 were installed. Monitoring well MW-8 was decommissioned in 2015. In 2015, a Geotech® PRC Passive Skimmer (PRC) was placed in MW-13 to collect separate-phase petroleum hydrocarbons as light non-aqueous phase liquid (LNAPL; Weston 2019).

Site characterization work conducted in 2011 and again in 2017 have helped define the source areas resulting in the dissolved and separate phase hydrocarbon plumes at the Header Area and Rail Line Areas. The 2011 characterization work included the advancement of 26 soil borings and the collection of groundwater at 20 temporary locations (OASIS 2011). The findings presented in the 2011 report define the area of impact to soil, as well as the dissolved-phase plume that remains today, with the exception of the former Middle Tank Farm footprint. The 2017 site characterization included the advancing of 18 soil borings (Weston 2018).

Groundwater monitoring and sampling has been conducted at the site a total of 18 times since 2010. Biennial monitoring was conducted in 2011, 2013, 2014, 2015, and 2017. Annual sampling was conducted in 2010, 2012, 2016, 2018, 2019, 2020, 2021 and 2022.

FIELD ACTIVITIES

Groundwater Monitoring

DNA performed groundwater monitoring activities on October 13 and 14, 2022. Fieldwork was performed by DNA in accordance with the most recent ADEC-approved work plan (DNA 2020a). Field activities were documented in a bound logbook. Sample collection time, date, and location are summarized in Attachment 2 – Tables, Table 1. A copy of the field notebooks is provided as Attachment 3.

Of the 14 wells scheduled for monitoring in the work plan, two wells required gauging of the static water level only (MW-7R and MW-13) with the remaining 12 scheduled for sampling. Deviations from the planned work include:

- MW-9 was not sampled because a barge was in dry dock over the top of the well location (reportedly present at this location since 2016); and
- MW-16 could not be located and is assumed to be destroyed as it was in an area used for barge landing.
- Gauging of wells MW-7R and MW-13 were not conducted; for a review of the water levels and product thicknesses at these wella, a separate report has been generated (DNA 2022).

The 10 monitoring wells available for sampling were each gauged for depth to groundwater (DTW), total depth, and then then purged following a low-flow (minimal drawdown) sample collection technique, and then sampled. ADEC's latest field sampling guidance requires the removal of at least one casing volume (ADEC 2022).

General Observations

The site topography is flat, located at the confluence of the Nenana and Tanana Rivers. The eastern portion of the site is located along the Tanana River where metal pilings form a mooring area that was approximately 12 to 15 feet above the water surface during the site visit. During recent site visits, the field

team noted significant erosion where the piling system ends towards the western portion of the site. Scour appeared to have accelerated in the last couple of years causing the abandoned rail line in this area to be completely undercut. During the 2022 site visit, additional significant erosion was not noted. The area of erosion is located at the western end of the header area and north of the former middle tank farm. The shoreline of the Tanana River in the area of scour is approximately 30 feet north of MW-7R. Photographic documentation of these conditions is found in the report for the 2020 groundwater monitoring event (DNA 2021).

Water Table

Static water level measurements and calculated elevations are presented in Attachment 2, Table 2. The water elevations, inferred isocontours, and direction could not be accurately calculated because several the well casings have jacked, and some well casings have been cut down to allow for closure of the protective monuments. Elevations and isocontours were not developed into a separate site map for this sampling event. The average depth to groundwater across the site was about 9 feet bgs, approximately 1 foot shallower than in 2021. The gradient appeared reverse from the prior year, flowing southwest towards the Nenana River. Groundwater elevations were estimated to be within the screening interval for each monitoring well.

Passive Skimmer

The passive skimmer at MW-13 was observed in 2020 as not functioning. Beginning in June 2021, DNA conducted weekly checks of the LNAPL presence at MW-13 and added weekly checks at MW-7R starting in October 2021. Weekly checks were conducted until June 2022. The results of this work are provided in a separate letter (DNA 2022).

Overall, the weekly checks indicated intermittent presence of LNAPL/free-product at both wells, with no strong correlation between water level and the presence of LNAPL. The report concluded that the use of a passive skimmer at either well location as not practicable (unsuccessful) and non-permanent. The passive skimmer at MW-13 is not currently deployed.

Water Quality

Water quality parameters recorded during the sample purge included temperature, conductivity, turbidity, dissolved oxygen (DO), and oxidation-reduction potential (ORP). Final parameter values recorded at the end of purging and prior to sample collection are summarized in Attachment 2, Table 3.

Analytical Methods

All groundwater samples were submitted to SGS North America Inc. (SGS), an ADEC-approved laboratory for the following analyses:

- Gasoline-Range Organics (GRO) by Alaska (AK) method AK101;
- Diesel-Range Organics (DRO) by AK102;
- Residual-Range Organics (RRO) by AK103;
- Volatile Organic Compounds (VOCs, which includes EDB and DCA) by United States Environmental Protection Agency (EPA) Solid Waste (SW) method 8260D;

- Polycyclic Aromatic Hydrocarbons (PAHs) by EPA SW8270D-SIM;
- Total lead by EPS SW 6020B.

Analytical Results

Laboratory analytical results are presented in Attachment 2, Table 4, with historical values presented in Table 5 for all past sampling events. The laboratory reports are included as Attachment 4 to this letter, and the ADEC Checklists and associated data quality assessment is included as Attachment 5.

Analytical results are compared to Alaska Administrative Code, Title 18, Chapter 75, Article 3 (18 AAC 75.345): Oil and Other Hazardous Substances Pollution Control, Table C, Groundwater Cleanup Levels (GCLs; ADEC 2021).

Table C GCL exceedances by analyte are comprised of the following (the highest value in a duplicate set is noted):

- GRO was detected at a concentration greater than the associated GCL of 2.2 mg/L at MW-5 with a reported value of 8.92 mg/L; similar to past detections.
- DRO was detected at a concentration greater than the associated GCL of 1.5 mg/L at MW-2 (2.26 mg/L), MW-3 (6.9 mg/L), and MW-4 (53.7 mg/L); similar to past detections.
- RRO was detected at a concentration greater than the associated GCL of 1.1 mg/L at MW-3 (1.36 mg/L) and MW-4 (4.69 mg/L). RRO is periodically detected at MW-3, and more regularly detected at MW-4.
- Benzene was detected at a concentration greater than the associated GCL of 0.0046 mg/L at MW3 (0.0461 mg/L), MW-4 (0.0244 mg/L), and MW-5 (5.22 mg/L); similar to past detections.
- Naphthalene (as a VOC) was detected at a concentration greater than the associated GCL of 0.0017 mg/L at MW-1 (0.101 mg/L), MW-3 (0.0362 mg/L), MW-4 (0.162 mg/L), and MW-15 (0.00328 mg/L); similar to past detections.
- DCA was detected at a concentration greater than the associated GCL of 0.0017 mg/L at MW-5 (0.00511 mg/L) and at MW-14 (0.00183 mg/L).
- 1,3,5-Trimethylbenzene was detected at a concentration greater than the associated GCL of 0.06 mg/L at MW-4 (0.0986 mg/L).

Table C GCL exceedances summarize by well:

- MW-1: naphthalene.
- MW-2: DRO.
- MW-3: DRO, RRO, benzene, and naphthalene.
- MW-4: DRO, RRO, benzene, naphthalene, and 1,3,5-Trimethylbenzene.
- MW-5: GRO, DCA and benzene.
- MW-14: DCA.
- MW-15: naphthalene.

Hydrocarbon concentrations are presented in Attachment 1, Figure 4, with inferred dissolved-phase plume boundaries depicted for GRO, DRO, benzene, and naphthalene. A GRO plume appears associated with the Rail Line Area and a DRO plume appears associated with the Header Area.

Plume Stability and Trend Analysis

DNA conducted a plume stability analysis by evaluating concentration trends for GRO, DRO, and benzene at in-plume and select plume delineating wells. Trend was evaluated using the Mann-Kendall test. Seasonal variability was evaluated by conducting a visual assessment (see Graphs 1 and 2, Attachment 6) of groundwater elevations to hydrocarbon concentrations at two in-plume wells as well as conducting a bivariate Pearson Correlation of the graphed data set.

An evaluation of historical data, presented in Attachment 2, Table 5, indicated recurring hydrocarbon concentrations that are at times greater than the ADEC GCLs at MW-1, MW-2, MW-3, MW-4, and MW-5. An evaluation of the dissolved-phase plume boundaries for GRO, DRO, benzene, and naphthalene (see Attachment 1, Figure 4) aided in determining the most representative in-plume well for evaluating trend and seasonal variation. A predominantly DRO dissolved-phase plume is best represented at MW-4 at the Header Area. A predominantly GRO dissolved-phase plume is best represented at MW-5 at the Rail Line Area.

Seasonal Variation

The temporal variation of dissolved-phase concentrations can result from seasonal fluctuation of the elevation of groundwater. To evaluate for seasonal variation, DNA compared DRO concentrations with groundwater elevations at MW-4, and GRO concentrations with groundwater elevations at MW-5, and plotted the results in Attachment 7, Graphs 1 and 2.

Graph 1 does not indicate a visually strong positive or negative correlate between groundwater elevation and DRO concentrations at MW-4. A bivariate Pearson Correlation for DRO at MW-4 indicates a weak to moderate positive correlation. Graph 2 also does not indicate a positive or negative correlation between groundwater elevation and GRO concentrations. A bivariate Pearson Correlation test for GRO at MW-5 indicates a weak negative correlation.

Trend lines presented on each graph indicate a steady concentration trend for DRO at MW-4 (Graph 1), and a potentially declining concentration trend for GRO at MW-5 (Graph 2).

Trend Test

DNA conducted a trend test for GRO and DRO concentrations over time using data from four monitoring wells associated with the Header Area (MW-1, MW-2, MW-3, MW-4); and one well associated with the Rail Line (MW-5). At Header Area, MW-1 and MW-2 serve as plume boundary wells, and monitoring wells MW3, and MW-4 serve as in-plume wells. At MW-5, surrounding wells have historical data that indicate either no impact or, significant impact with LNAPL present.

The trend test was conducted using data from the fall season only (September, October, November). The trend test was conducted using the GSI Mann-Kendall Toolkit. Input data is summarized in Attachment 2, Table 6, and output data is provided as Attachment 7.

- For benzene the concentrations are stable at MW-3, and without a trend at MW-4. MW-5 is interpreted to have an increasing benzene trend. Visually, benzene concentrations appear stable since 2010.
- For DRO the concentrations are increasing or probably increasing at MW-1 and MW-2. No trend is evident at MW-3 and MW-5. MW-4 is reported as stable.

- The GRO concentrations are reported as stable at MW-2, MW-3, and MW-5, with no trend evident at MW-1.

Summary

At the Header Area, visual evaluation of concentrations over time, along with the Mann-Kendall test, indicate a stable DRO plume as measured at MW-4, with boundary wells MW-1 and MW-2 often reporting DRO values at concentrations less than the ADEC GCL. Referring to Attachment 6, Graph 1, DRO concentrations at MW-4 appear to be slightly declining.

At the Rail Line Area, GRO concentrations are reported by the Mann-Kendall test to be stable with nearby wells not showing elevated concentrations for GRO. Referring to Attachment 6, Graph 2, GRO concentrations at MW-5 appear to be declining.

Surface Water Quality

The proximity of recorded impact to groundwater indicates possible impact to surface water. Surface water quality standards found in 18 AAC 70 apply to hydrologically connected groundwater as well as surface water. It is assumed that wells adjacent to the Tanana River are required to meet both Table C groundwater criteria in 18 AAC 75 and surface water criteria (Alaska Water Quality Standards [AWQS]) under 18 AAC 70 in order to be protective for use as a drinking water source and to protect potential ecological receptors. The water table at the site indicates the prevalent condition is that the Tanana is a gaining river, with a surrounding hyporheic zone characterized by groundwater samples collected from wells MW-1, MW-3, MW4, MW-14, and MW-15. These wells may serve as a point of compliance for the downgradient edge of the dissolved-phase hydrocarbon plume for both the Header and the Rail Line areas.

To evaluate not only Table C values, but also the AWQSs, BTEX and PAH data for the five monitoring wells located in the hyporheic zone were used to calculate total aqueous hydrocarbons (TAqH) and total aromatic hydrocarbons (TAH) for comparison to AWQS criteria. The comparison is provided in Table 4 along with the Table C GCL comparison. The results indicate that the wells at the Header Area (MW-1, MW-3, MW4) exceed AWQS criteria. The wells located further to the west, west and north of the Rail Line area (MW14, and MW-15) also appear to exceed AWQS criteria.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Analytical results have indicated two separate source areas, one at the former Header Area and a second one to the west at the Rail Line Area. Detected hydrocarbons for wells associated with the Header Area indicate the source of impact was a release of a diesel-range hydrocarbon product, concentrated in the vicinity of the header. This would be consistent with the type of product stored at the Middle Tank Farm. Detected hydrocarbons for wells associated with the former Rail Line Area indicate the source of impact was a release of a gasoline-range hydrocarbon product. This would be consistent with the types of fuel stored at the Upper Tank Farm. The extent of impact at the Rail Line Area is not fully delineated to the east and south, and LNAPL is found in wells in this area with no wells further to the southeast in the footprint of the now-removed Middle Tank Farm.

The periodic presence of NAPL at MW-7R and MW-13 indicates a contamination source east of the Rail Line Area. The erosion occurring near MW-7R, and the relatively short distance between MW-7R and the area of erosion, approximately 30 feet, is a concern that may require action soon.

AWQS criteria are not met in wells located along the shore of the Tanana River.

The evaluation for lead and leaded fuel additives indicates the presence of DCA at concentrations greater than allowed by the Table C values at wells MW-5 and MW-14. EDB was not detected; it is noted that at MW-5 the project laboratory could not report a detection limit less than the Table C values.

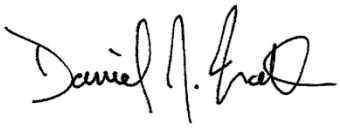
Total lead in water was found to be non-detect at most site wells, with detections less than the Table C values at monitoring wells MW-2, MW-3, and MW-4 in the header area.

VOC analysis indicated naphthalene concentrations are slightly greater than those reported using the EPA PAH method. Additionally, the VOC 1,3,5-Trimethylbenzene was detected at one location, MW-4.

Recommendations

DNA recommends the completion of a high-resolution site characterization to fully understand the location(s) of sources at the site with the goal of designing a plan to remediate the ongoing impacts to groundwater. Future groundwater monitoring work should include analysis for the VOCs 1,3,5-Trimethylbenzene and DBA. An elevation survey may be appropriate for estimating groundwater flow direction, however there is sufficient historical data to understand the general groundwater flow regime at this site.

Sincerely,
DNA Environmental Consultants, LLC



Daniel Frank
Principal

Attachments

1. Figures
2. Tables
3. Field Forms and Notes
4. Laboratory Report
5. ADEC Checklist and Data Quality Report
6. Graphs
7. Mann-Kendall Output

REFERENCES

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ATTACHMENT 1

Figures

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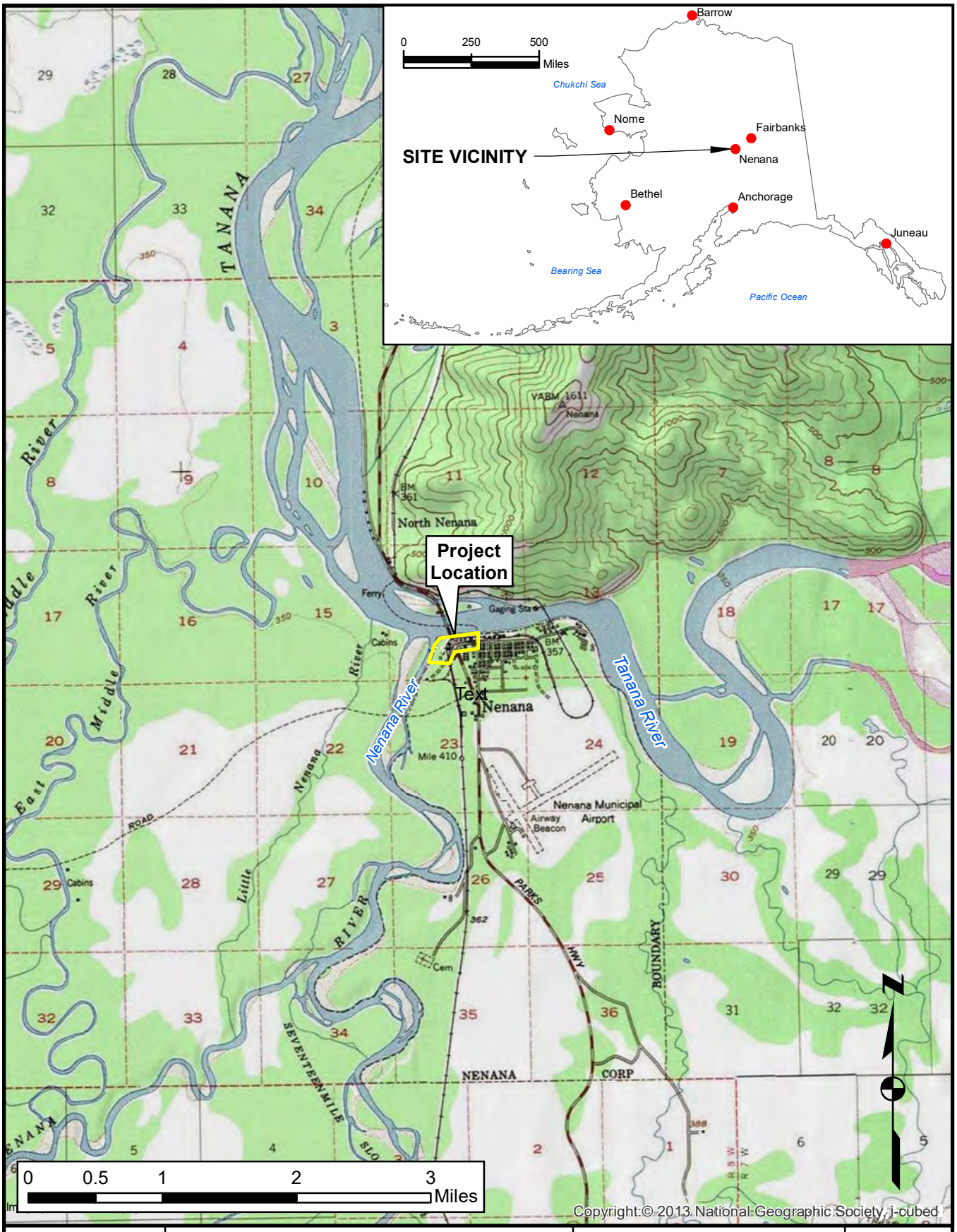

dna ENVIRONMENTAL	October 2022 Groundwater Monitoring Event Nenana Header and Rail Line Areas Nenana, Alaska	**Project Location**	Figure 1
	1 inch equals 1 miles	12/21/2022 | 22.CFS.01.1 DRAWN: ECR | CHKD: DJF	

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Legend

Monitoring Wells

Tanana River

Nenana River

RELIC RAILROAD TRACKS

HEADER MANIFOLD

MW-03

MW-04

MW-01

MW-06

MW-02

MW-7R

MW-11

MW-14

MW-15

MW-16

MW-05

MW-13

MW-09

MW-10R

MIDDLE TANK FARM

FORMER LOWER TANK FARM

FRONT STREET

PARKS HIGHWAY

N

0 90 180 360 540 Feet

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October 2022 Groundawater Monitoring
Event Nenana Header and Rail Line Areas
Nenana, Alaska

1 inch equals 0.02 miles

Site Detail

12/21/2022 | 21.CFS.01.01

DRAWN: ECR | CHKD: DJF

Figure 2

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Legend

- Monitoring Wells
- Benzene at 0.0046 mg/L
- DRO at 1.5 mg/L
- GRO at 2.2 mg/L
- Naphthalene at 0.0017 mg/L
- LNAPL

MW-3 (mg/L)	
GRO	0.423
DRO	6.9
RRO	1.36
DCA	0.00039
1,3,5-TMB	0.00218
Benzene	0.0461
Naphthalene[3]	0.0362

MW-4 (mg/L)	
GRO	0.517
DRO	53.7
RRO	4.69
DCA	0.00085
1,3,5-TMB	0.0986
Benzene	0.0244
Naphthalene[3]	0.162

MW-1[1] (mg/L)	
GRO	0.112
DRO	1.47
RRO	0.38
DCA	ND
1,3,5-TMB	0.00609
Benzene	0.00083
Naphthalene[3]	0.101

MW-6 (mg/L)	
GRO	ND
DRO	0.207
RRO	0.22
DCA	ND
1,3,5-TMB	ND
Benzene	ND
Naphthalene[3]	0.00115

MW-14 (mg/L)	
GRO	ND
DRO	ND
RRO	ND
DCA	0.00183
1,3,5-TMB	ND
Benzene	0.00095
Naphthalene[3]	ND

MW-15 (mg/L)	
GRO	ND
DRO	ND
RRO	ND
DCA	0.00119
1,3,5-TMB	ND
Benzene	0.00023
Naphthalene[3]	0.00328

MW-11 (mg/L)	
GRO	ND
DRO	ND
RRO	0.274
DCA	ND
1,3,5-TMB	ND
Benzene	ND
Naphthalene[3]	0.00107

MW-2 (mg/L)	
GRO	ND
DRO	2.26
RRO	1.03
DCA	ND
1,3,5-TMB	ND
Benzene	ND
Naphthalene[3]	0.00038

MW-5 (mg/L)	
GRO	8.92
DRO	0.313
RRO	0.349
DCA	0.051
1,3,5-TMB	ND
Benzene	5.22
Naphthalene[3]	ND

MW-10R (mg/L)	
GRO	ND
DRO	ND
RRO	ND
DCA	ND
1,3,5-TMB	ND
Benzene	ND
Naphthalene[3]	ND

Tanana River

Nenana River

HEADER MANIFOLD

RELIC RAILROAD TRACKS

MW-7R

MW-13

MW-16

MW-09

MIDDLE TANK FARM

FORMER LOWER TANK FARM

FRONT STREET

PARKS HIGHWAY

N

0 90 180 360 540 Feet

Notes:
(1) Duplicate sample location, highest value reported is included here.
(2) All values in mg/kg; Red text, value exceeds ADEC Table C groundwater cleanup values.
(3) Napthalene tested using both EPA SW 8260 and 8270, highest value reported here.

Key:
1,3,5-TMB = 1,3,5-Trimethylbenzene
ADEC = Alaska Department of Environmental Conservation
bgs = below ground surface
DCA = 1,2-Dichloroethane
DRO = Diesel-range organics
GRO = Gasoline-range organic
mg/kg = milligrams per kilogram
ND = non-detect
RRO = Residual-range organics

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October 2022 Groundawater Monitoring Event
Nenana Header and Rail Line Areas
Nenana, Alaska

1 inch equals 0.02 miles

Dissolved-Phase Concentrations in Groundwater

12/22/2022 | 22.CFS.01.1

DRAWN: ECR | CHKD: DJF

Figure 3

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ATTACHMENT 2

Tables

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TABLE 1: SAMPLE COLLECTION SUMMARY
Groundwater Monitoring Report – October 2022 Sampling Event
Nenana Header and Rail Line Areas
Nenana, Alaska

Sample Location	Sample Number	Duplicate	Sample Date	Sample Time	Laboratory Analyses				
					GRO (AK101)	DRO/RRO (AK102/103)	VOCs (EPA 8260D)	Total Lead (EPA 6020B)	PAHs (EPA 8270D SIM)
Groundwater									
MW-1	10-13-22-MW-1	✓	10/13/22	1505	✓	✓	✓	✓	✓
	10-13-22-FD-1		10/13/22	1505	✓	✓	✓	✓	✓
MW-2	10-13-22-MW-2		10/13/22	1420	✓	✓	✓	✓	✓
MW-3	10-13-22-MW-3		10/13/22	1700	✓	✓	✓	✓	✓
MW-4	10-13-22-MW-4		10/13/22	1600	✓	✓	✓	✓	✓
MW-5	10-14-22-MW05		10/14/22	1015	✓	✓	✓	✓	✓
MW-6	10-13-22-MW-6		10/13/22	1315	✓	✓	✓	✓	✓
MW-10R	10-13-22-MW-10R		10/13/22	1212	✓	✓	✓	✓	✓
MW-11	10-14-22-MW11		10/14/22	1150	✓	✓	✓	✓	✓
MW-14	10-13-22-MW-14		10/13/22	1845	✓	✓	✓	✓	✓
MW-15	10-14-22-MW-15		10/14/22	0930	✓	✓	✓	✓	✓
Quality Control									
Rinsate 1	10-13-22-RB-1		10/13/22	1800	✓	✓	✓	✓	✓
Lab Provided	Trip Blank		Laboratory Assigned		✓		✓		

Key:

ADEC = Alaska Department of Environmental Conservation
AK = Alaska
DRO = Diesel-range organics
EPA = United States Environmental Protection Agency
GW = Groundwater
ID = Identification
MW = Monitoring well
NHTF = Newhalen Tank Farm
PAHs = Polycyclic aromatic hydrocarbons
RB = Rinsate Blank
SIM = Selective ion monitoring
VOCs = Volatile Organic Compounds

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TABLE 2: GROUNDWATER ELEVATION DATA
Groundwater Monitoring Report – October 2022 Sampling Event
Nenana Header and Rail Line Areas
Nenana, Alaska

Well ID	Installation Date	Land Survey Details				Well Design			Field Measurements						Water Elevation (feet AMSL)	Groundwater Interface within Screen Interval?
		Ground Elevation	TOC Elevation	Northing	Easting	Screen Length (feet)	Top of Screen (BTOC)	Bottom of Screen (BTOC)	Gauge Date	Depth to LNAPL (BTOC)	Depth to Water (BTOC)	LNAPL Thickness	TD (BTOC)	Depth to Water (BGS)		
MW-1	10/3/10	358.60	358.21	3861831.43	1781896.26	10.00	3.30	13.30	10/13/22	--	9.43	--	13.25	9.82	348.78	Yes
MW-2	10/3/10	357.75	356.98	3861772.37	1781823.24	10.00	3.20	13.20	10/13/22	--	8.40	--	12.62	9.17	348.58	Yes
MW-3	10/3/10	358.20	357.69	3861818.07	1781721.43	10.00	3.20	13.20	10/13/22	--	8.89	--	12.90	9.40	348.80	Yes
MW-4	10/3/10	358.66	358.19	3861823.03	1781794.60	10.00	3.80	13.80	10/13/22	--	9.49	--	13.60	9.96	348.70	Yes
MW-5	10/3/10	357.03	356.42	3861635.81	1781328.37	8.00	2.20	12.20	10/13/22	--	7.87	--	11.90	8.48	348.55	Yes
MW-6	6/4/13	358.58	358.16	3861838.51	1782007.82	15.00	4.50	19.50	10/14/22	--	9.33	--	18.84	9.75	348.83	Yes
MW-7R[(1)]	9/21/17	358.53	358.18	3861732.13	1781567.24	10.00	5.30	15.30	--	--	--	--	--	--	--	--
MW-10R[(2)]	10/3/17	356.28	355.58	3861311.54	1781370.19	10.00	4.50	14.50	10/13/22	--	6.62	--	13.34	7.32	348.96	Yes
MW-11[(3)]	6/6/13	357.76	357.16	3861668.78	1781585.40	15.00	5.00	20.00	10/14/22	--	8.55	--	13.15	9.15	348.61	Yes
MW-13	6/6/13	357.04	356.79	3861586.77	1781430.08	15.00	5.00	20.00	--	--	--	--	--	--	--	--
MW-14	August 2014	356.72	356.22	3861673.16	1781403.94	10.00	5.00	15.00	10/13/22	--	7.44	--	14.80	7.94	348.78	Yes
MW-15	August 2014	357.07	356.59	3861655.62	1781296.81	10.00	5.00	15.00	10/14/22	--	7.94	--	14.87	8.42	348.65	Yes

Notes:

All measurements are in units of feet. Surveyed October 24, 2018 by DesignAlaska for Weston Solutions (Zone4 NAD83).

(1) MW-7 was redrilled on 9/21/17 and re-designated as MW-7R. Well construction/screening interval estimated by DNA.

(2) MW-10 was redrilled on 10/3/17 and re-designated as MW-10R.

(3) MW-11 cut by 0.22 foot was cut from the top due to frost jacking. on 10/3/17 and re-designated as MW-10R.

Key:

-- = Not present
AMSL = Above Mean Sea Level
BGS = below ground surface
BTOC = Below top of casing, a.k.a. below measuring point
LNAPL = Light non-aqueous phase liquid
NA = Not available
NR = not recorded
TD = Total Depth
TOC = top of casing (PVC) meeasuring point

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TABLE 3: FIELD-COLLECTED WATER QUALITY DATA
Groundwater Monitoring Report – October 2022 Sampling Event
Nenana Header and Rail Line Areas
Nenana, Alaska

Well ID	Purge/ Sample Date	Sample Method	Color	Odor	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	DO (mg/L)	ORP (mV)
MW-1	10/21/21	Positive Pressure Pump[(1)]	clear	none noted	7.90	6.66	573	0.90	0.37	19
MW-2	10/21/21		clear	none noted	6.50	6.64	633	5.4	3.16	116.0
MW-3	10/21/21		clear	slight HC	7.40	6.61	647	24.0	0.13	32.0
MW-4	10/21/21		clear	slight HC	7.90	6.42	749	8.0	1.89	12.0
MW-5	10/21/21		clear	slight HC	7.60	6.80	538	1.37	0.10	155.0
MW-6	10/21/21		clear	none noted	7.10	6.67	475	29.0	0.09	93.0
MW-10R	10/21/21		clear	none noted	8.10	6.63	366	4.3	0.87	295.0
MW-11	10/21/21		clear	none noted	6.90	6.80	390	5.6	0.80	127.0
MW-14	10/21/21		clear	slight HC	6.80	6.95	960	14.0	0.17	4.9
MW-15	10/21/21		clear	none noted	6.40	6.42	584	5.00	0.24	194.0

Notes: Above data is final reading after purge and before sampling.

[(1)] Geotech® Geosub2™ (stainless steel pump); low-flow.

Key:

°C = Degrees Celsius
DO = Dissolved oxygen
HC = hydrocarbon
mg/L = Milligrams per liter
mV = Millivolts
MW = Monitoring well
NTU = Nephelometric Turbidity Units
ORP = Oxidation-reduction potential
SS = Stainless Steel
µS/cm = micro-siemens per centimeter

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TABLE 4: LABORATORY RESULTS SUMMARY

Groundwater Monitoring Report – October 2022 Sampling Event

Nenana Header and Rail Line Areas

Nenana, Alaska

Well ID:	ADEC Cleanup Levels	MW-1		MW-1		MW-2		MW-3		MW-4		MW-5		MW-6	
Project Sample ID:		10-13-22-MW-1		10-13-22-FD-1		10-13-22-MW-2		10-13-22-MW-3		10-13-22-MW-4		10-14-22-MW-5		10-13-22-MW-6	
Lab Sample ID:		1226365001		1226365012		1226365002		1226365003		1226365004		1226365005		1226365006	
Collection Date:		10/13/2022 3:05 PM		10/13/2022 12:00 PM		10/13/2022 2:20 PM		10/13/2022 5:00 PM		10/13/2022 4:00 PM		10/14/2022 10:15 AM		10/13/2022 1:15 PM	
Alaska DEC Fuels (mg/L)															
GRO C6-C10	2.2	0.112		0.108		0.05	U	0.423		0.517		8.92		0.05	U
DRO C10-C25	1.5	1.41		1.47		2.26		6.9		53.7		0.313	J	0.207	J
RRO C25-C36	1.1	0.38	J	0.352	J	1.03		1.36		4.69		0.349	J	0.22	J
PAHs (EPA 8270D SIM; mg/L)															
1-Methylnaphthalene	0.011	0.00651		0.0057		0.0000063	U	0.00198		0.0136		0.00000868	J	0.0000268	
2-Methylnaphthalene	0.036	0.00449		0.00398		0.0000063	U	0.000465		0.00793		0.00000849	J	0.0000117	J
Acenaphthene	0.53	0.00776		0.00701		0.0000063	U	0.00204		0.00189		0.00000824	J	0.00132	
Acenaphthylene	0.26	0.0000631		0.000056		0.0000063	U	0.0000337		0.000127	U	0.0000064	U	0.0000127	J
Anthracene	0.043	0.0000753		0.0000652		0.0000063	U	0.0000063	U	0.000115	J	0.0000064	U	0.0000118	J
Benzo(a)Anthracene	0.0003	0.00000409	J	0.00000645	U	0.0000063	U	0.0000063	U	0.000127	U	0.0000064	U	0.00000645	U
Benzo[a]pyrene	0.00025	0.00000258	U	0.00000258	U	0.00000252	U	0.00000252	U	0.0000505	U	0.00000257	U	0.00000258	U
Benzo[b]Fluoranthene	0.0025	0.00000645	U	0.00000645	U	0.0000063	U	0.0000063	U	0.000127	U	0.0000064	U	0.00000645	U
Benzo[g,h,i]perylene	0.00026	0.00000645	U	0.00000645	U	0.0000063	U	0.0000063	U	0.000127	U	0.0000064	U	0.00000645	U
Benzo[k]fluoranthene	0.0008	0.00000645	U	0.00000645	U	0.0000063	U	0.0000063	U	0.000127	U	0.0000064	U	0.00000645	U
Chrysene	0.002	0.00000645	U	0.00000645	U	0.0000063	U	0.0000063	U	0.000127	U	0.0000064	U	0.00000645	U
Dibenzo[a,h]anthracene	0.00025	0.00000258	U	0.00000258	U	0.00000252	U	0.00000252	U	0.0000505	U	0.00000257	U	0.00000258	U
Fluoranthene	0.26	0.000149		0.000128		0.0000063	U	0.0000672		0.00012	J	0.00000985	J	0.0000165	
Fluorene	0.29	0.00295		0.00255		0.0000063	U	0.000653		0.0011		0.00000681	J	0.000614	
Indeno[1,2,3-c,d] pyrene	0.00019	0.00000645	U	0.00000645	U	0.0000063	U	0.0000063	U	0.000127	U	0.0000064	U	0.00000645	U
Naphthalene	0.0017	0.0487		0.0448		0.0000259		0.0174		0.0277		0.0000233	J	0.000241	
Phenanthrene	0.17	0.00193		0.00168		0.0000127	U	0.00029		0.0003	J	0.0000166	J	0.0000736	
Pyrene	0.12	0.0000738		0.0000622		0.0000063	U	0.0000451		0.0000913	J	0.00000949	J	0.00000868	J
VOCs (EPA SW8260D; mg/L)															
1,1,1,2-Tetrachloroethane	0.0057	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.005	U	0.00025	U
1,1,1-Trichloroethane	8	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
1,1,2,2-Tetrachloroethane	0.00076	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	*0.005*	U	0.00025	U
1,1,2-Trichloroethane	0.00041	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	*0.004*	U	0.0002	U
1,1-Dichloroethane	0.028	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
1,1-Dichloroethene	0.28	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
1,1-Dichloropropene	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
1,2,3-Trichlorobenzene	0.007	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	*0.01*	U	0.0005	U
1,2,3-Trichloropropane	0.0000075	*0.0005*	U	*0.0005*	U	*0.0005*	U	*0.0005*	U	*0.0005*	U	*0.01*	U	*0.0005*	U
1,2,4-Trichlorobenzene	0.004	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	*0.01*	U	0.0005	U
1,2,4-Trimethylbenzene	0.056	0.0228		0.0223		0.0005	U	0.0295		0.0116		0.0092	J	0.0005	U
1,2-Dibromo-3-chloropropane	--	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.1	U	0.005	U
1,2-Dibromoethane (EDB)	0.000075	0.0000375	U	0.0000375	U	0.0000375	U	0.0000375	U	0.0000375	U	*0.00075*	U	0.0000375	U
1,2-Dichlorobenzene	0.3	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
1,2-Dichloroethane (DCA)	0.0017	0.00025	U	0.00025	U	0.00025	U	0.00039	J	0.00085		0.051		0.00025	U
1,2-Dichloropropane	0.0082	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	*0.01*	U	0.0005	U
1,3,5-Trimethylbenzene	0.06	0.00609		0.00586		0.0005	U	0.00218		0.0986		0.01	U	0.0005	U
1,3-Dichlorobenzene	0.3	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
1,3-Dichloropropane	--	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.005	U	0.00025	U
1,4-Dichlorobenzene	0.0048	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	*0.005*	U	0.00025	U
2,2-Dichloropropane	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
2-Butanone (MEK)	5.6	0.005	U	0.005	U	0.005	U	0.00403	J	0.015		0.1	U	0.005	U
2-Chlorotoluene	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
2-Hexanone	0.038	0.005	U	0.005	U	0.005	U	0.005	U	0.00342	J	0.1	U	0.005	U
4-Chlorotoluene	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	*0.01*	U	0.0005	U
4-Isopropyltoluene	--	0.00208		0.00202		0.0005	U	0.00202		0.00465		0.01	U	0.0005	U
4-Methyl-2-pentanone (MIBK)	6.3	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.1	U	0.005	U
Benzene	0.0046	0.00083		0.00083		0.0002	U	0.0461		0.0244		5.22		0.0002	U
Bromobenzene	0.062	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Bromochloromethane	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Bromodichloromethane	0.0013	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	*0.005*	U	0.00025	U
Bromoform	0.033	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Bromomethane	0.0075	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	*0.06*	U	0.003	U
Carbon disulfide	0.81	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.1	U	0.005	U
Carbon tetrachloride	0.0046	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	*0.01*	U	0.0005	U
Chlorobenzene	0.078	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.005	U	0.00025	U
Chloroethane	21	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Chloroform	0.0022	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	*0.01*	U	0.0005	U
Chloromethane	0.19	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Dibromochloromethane	0.0087	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	*0.005*	U	0.00025	U
Dibromomethane	0.0083	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Dichlorodifluoromethane	0.2	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Ethylbenzene	0.015	0.00202		0.00201		0.0005	U	0.00697		0.00171		0.01	U	0.0005	U
Freon-113	10	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.1	U	0.005	U
Hexachlorobutadiene	0.0014	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	*0.01*	U	0.0005	U
Isopropylbenzene (Cumene)	0.45	0.00228		0.00226		0.0005	U	0.00351		0.0005	U	0.0086	J	0.0005	U
Methyl-t-butyl ether	0.14	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.1	U	0.005	U
Methylene chloride	0.11	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.1	U	0.005	U
Naphthalene	0.0017	0.0999		0.101		0.00038	J	0.0362		0.162		*0.01*	U	0.00115	
P & M -Xylene	--	0.00552		0.00558		0.001	U	0.0148		0.0121		0.0922		0.001	U
Styrene	1.2	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Tetrachloroethene (PCE)	0.041	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Toluene	1.1	0.00045	J	0.00045	J	0.0005	U	0.0033		0.00176		0.01	U	0.0005	U
Trichloroethene (TCE)	0.0028	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	*0.01*	U	0.0005	U
Trichlorofluoromethane	5.2	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
Vinyl acetate	0.41	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.1	U	0.005	U
Vinyl chloride	0.00019	0.000075	U	0.000075	U	0.000075	U	0.000075	U	0.000075	U	*0.0015*	U	0.000075	U
Xylenes (total)	0.19	0.00641		0.00648		0.0015	U	0.0206		0.0188		0.0922		0.0015	U
cis-1,2-Dichloroethene	0.036	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
cis-1,3-Dichloropropene	0.0047	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	*0.005*	U	0.00025	U
n-Butylbenzene	1	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
n-Propylbenzene	0.66	0.00288		0.00281		0.0005	U	0.00674		0.00057	J	0.0066	J	0.0005	U
o-Xylene	--	0.00089	J	0.0009	J	0.0005	U	0.00579		0.0067		0.01	U	0.0005	U
sec-Butylbenzene	2	0.00184		0.00177		0.0005	U	0.00064	J	0.0005	U	0.01	U	0.0005	U
tert-Butylbenzene	0.69	0.0005	U	0.0005	U	0.0005	U	0.00085	J	0.0007	J	0.01	U	0.0005	U
trans-1,2-Dichloroethene	0.36	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.01	U	0.0005	U
trans-1,3-Dichloropropene	0.0047	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	*0.01*	U	0.0005	U
Total Lead (EPA SW6020B; mg/L)															
Lead	0.015	0.00594		0.0005	U	0.00613		0.00245		0.00643		0.0005	U	0.0005	U
Surface Water Quality															
TAH Screening Level: **0.01** mg/L (sum of BTEX)		0.010		0.010				0.077		0.047					
TAqH Screening Level: **0.015** mg/L (sum of BTEX+PAHs)		0.082		0.076				0.100		0.101					

TABLE 4: LABORATORY RESULTS SUMMARY

Groundwater Monitoring Report – October 2022 Sampling Event

Nenana Header and Rail Line Areas

Nenana, Alaska

Well ID:	ADEC Cleanup Levels	MW-10R		MW-11		MW-14		MW-15		Rinsate 1		Field Blank	
Project Sample ID:		**10-13-22-MW-10R**		**10-14-22-MW-11**		**10-13-22-MW-14**		**10-14-22-MW-15**		**10-13-22-RB-1**		**Trip Blank**	
Lab Sample ID:		1226365007		1226365008		1226365009		1226365010		1226365011		1226365013	
Collection Date:		10/13/2022 12:12 PM		10/14/2022 11:50 AM		10/13/2022 6:45 PM		10/14/2022 9:30 AM		10/13/2022 6:00 PM		10/13/2022 12:00 AM	
Alaska DEC Fuels (mg/L)													
GRO C6-C10	2.2	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
DRO C10-C25	1.5	0.288	U	0.294	U	0.288	U	0.288	U	0.294	U	--	
RRO C25-C36	1.1	0.24	U	0.274	J	0.24	U	0.24	U	0.245	U	--	
PAHs (EPA 8270D SIM; mg/L)													
1-Methylnaphthalene	0.011	0.0000065	U	0.00000438	J	0.00000612	J	0.000908		0.00000654	J	--	
2-Methylnaphthalene	0.036	0.00000435	J	0.00000409	J	0.00000492	J	0.0000133		0.00000859	J	--	
Acenaphthene	0.53	0.0000065	U	0.0000064	U	0.0000063	U	0.00608		0.0000063	U	--	
Acenaphthylene	0.26	0.0000065	U	0.0000064	U	0.0000063	U	0.00000613	J	0.0000063	U	--	
Anthracene	0.043	0.0000065	U	0.0000064	U	0.0000063	U	0.0000063	U	0.0000063	U	--	
Benzo(a)Anthracene	0.0003	0.00000558	J	0.0000064	U	0.0000063	U	0.0000063	U	0.0000063	U	--	
Benzo[a]pyrene	0.00025	0.00000261	U	0.00000255	U	0.00000252	U	0.00000251	U	0.00000252	U	--	
Benzo[b]Fluoranthene	0.0025	0.0000152		0.0000064	U	0.00000474	J	0.0000063	U	0.0000063	U	--	
Benzo[g,h,i]perylene	0.00026	0.0000065	U	0.0000064	U	0.0000063	U	0.0000063	U	0.0000063	U	--	
Benzo[k]fluoranthene	0.0008	0.0000059	J	0.0000064	U	0.0000044	J	0.0000063	U	0.0000063	U	--	
Chrysene	0.002	0.00000425	J	0.0000064	U	0.0000063	U	0.0000063	U	0.0000063	U	--	
Dibenzo[a,h]anthracene	0.00025	0.00000261	U	0.00000255	U	0.00000252	U	0.00000251	U	0.00000252	U	--	
Fluoranthene	0.26	0.0000107	J	0.00000484	J	0.0000063	U	0.00000497	J	0.0000063	U	--	
Fluorene	0.29	0.0000065	U	0.0000064	U	0.0000063	U	0.000141		0.0000063	U	--	
Indeno[1,2,3-c,d] pyrene	0.00019	0.0000065	U	0.0000064	U	0.0000063	U	0.0000063	U	0.0000063	U	--	
Naphthalene	0.0017	0.00000917	J	0.0000127	U	0.000012	J	0.00189		0.0000235	J	--	
Phenanthrene	0.17	0.000013	U	0.0000127	U	0.0000127	U	0.0000232	J	0.000014	J	--	
Pyrene	0.12	0.00000938	J	0.0000064	U	0.0000063	U	0.0000063	U	0.0000063	U	--	
VOCs (EPA SW8260D; mg/L)													
1,1,1,2-Tetrachloroethane	0.0057	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U
1,1,1-Trichloroethane	8	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,1,2,2-Tetrachloroethane	0.00076	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U
1,1,2-Trichloroethane	0.00041	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U	0.0002	U
1,1-Dichloroethane	0.028	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,1-Dichloroethene	0.28	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,1-Dichloropropene	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,2,3-Trichlorobenzene	0.007	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,2,3-Trichloropropane	0.0000075	*0.0005*	U	*0.0005*	U	*0.0005*	U	*0.0005*	U	*0.0005*	U	*0.0005*	U
1,2,4-Trichlorobenzene	0.004	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,2,4-Trimethylbenzene	0.056	0.0005	U	0.00034	J	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,2-Dibromo-3-chloropropane	--	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
1,2-Dibromoethane (EDB)	0.000075	0.0000375	U	0.0000375	U	0.0000375	U	0.0000375	U	0.0000375	U	0.0000375	U
1,2-Dichlorobenzene	0.3	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,2-Dichloroethane (DCA)	0.0017	0.00025	U	0.00025	U	0.00183		0.00119		0.00025	U	0.00025	U
1,2-Dichloropropane	0.0082	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,3,5-Trimethylbenzene	0.06	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,3-Dichlorobenzene	0.3	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
1,3-Dichloropropane	--	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U
1,4-Dichlorobenzene	0.0048	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U
2,2-Dichloropropane	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
2-Butanone (MEK)	5.6	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
2-Chlorotoluene	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
2-Hexanone	0.038	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
4-Chlorotoluene	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
4-Isopropyltoluene	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
4-Methyl-2-pentanone (MIBK)	6.3	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Benzene	0.0046	0.0002	U	0.0002	U	0.00095		0.00023	J	0.0002	U	0.0002	U
Bromobenzene	0.062	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Bromochloromethane	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Bromodichloromethane	0.0013	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U
Bromoform	0.033	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Bromomethane	0.0075	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U	0.003	U
Carbon disulfide	0.81	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Carbon tetrachloride	0.0046	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Chlorobenzene	0.078	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U
Chloroethane	21	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Chloroform	0.0022	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Chloromethane	0.19	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Dibromochloromethane	0.0087	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U
Dibromomethane	0.0083	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Dichlorodifluoromethane	0.2	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Ethylbenzene	0.015	0.0005	U	0.0005	U	0.0005	U	0.00035	J	0.0005	U	0.0005	U
Freon-113	10	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Hexachlorobutadiene	0.0014	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Isopropylbenzene (Cumene)	0.45	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Methyl-t-butyl ether	0.14	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Methylene chloride	0.11	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Naphthalene	0.0017	0.0005	U	0.00107		0.0005	U	0.00328		0.0005	U	0.0005	U
P & M -Xylene	--	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U	0.001	U
Styrene	1.2	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Tetrachloroethene (PCE)	0.041	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Toluene	1.1	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.00055	J	0.0005	U
Trichloroethene (TCE)	0.0028	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Trichlorofluoromethane	5.2	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Vinyl acetate	0.41	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U	0.005	U
Vinyl chloride	0.00019	0.000075	U	0.000075	U	0.000075	U	0.000075	U	0.000075	U	0.000075	U
Xylenes (total)	0.19	0.0015	U	0.0015	U	0.0015	U	0.0015	U	0.0015	U	0.0015	U
cis-1,2-Dichloroethene	0.036	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
cis-1,3-Dichloropropene	0.0047	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U	0.00025	U
n-Butylbenzene	1	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
n-Propylbenzene	0.66	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
o-Xylene	--	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
sec-Butylbenzene	2	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
tert-Butylbenzene	0.69	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
trans-1,2-Dichloroethene	0.36	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
trans-1,3-Dichloropropene	0.0047	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U
Total Lead (EPA SW6020B; mg/L)													
Lead	0.015	0.0005	U	0.0005	U	0.0005	U	0.0005	U	0.0005	U	--	
Surface Water Quality													
TAH Screening Level: **0.01** mg/L (sum of BTEX)						0.003		0.003					
TAqH Screening Level: **0.015** mg/L (sum of BTEX+PAHs)						0.004		0.012					

TABLE 4: LABORATORY RESULTS SUMMARY

Groundwater Monitoring Report – October 2022 Sampling Event

Nenana Header and Rail Line Areas

Nenana, Alaska

Notes: All results are in milligrams per liter. Results greater than ADEC cleanup values are underlined &in **red text**. ADEC Cleanup Levels from: 18 AAC 75.345, Table C , October 27, 2018. Result shaded grey indicate a LOD greater than the applicable screening value.

Key:

-- not applicable

ADEC = Alaska Department of Environmental Conservation

AK = Alaska

BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes

DRO = Diesel-range organics

DUP = Duplicate sample at this location

EPA = United States Environmental Protection Agency

GRO = Gasoline-range organics

GW = Groundwater

ID = Identification

LOD = Limit of detection

mg/L = milligrams per liter

MW = Monitoring well

PAHs = Polycyclic aromatic hydrocarbons

RB = Rinsate Blank

RRO = Residual-range organics

SIM = Selective ion monitoring

SW = EPA Solid Wwast 846 Compendium

TAH = Total aromatic hydrocarbons

TAqH = Total aqueous hydrocarbons

VOCs = Volatile Organic Compounds

Data Flags

BJ = The same analyte is found in the associated blank. The identification of the analyte is acceptable; the reported value is an estimate.

J = The result is considered estimated, with an unknown direction of bias; (laboratory-applied).

J- = The result is considered estimated, biased low, due to a QC anomaly.

J+ = The result is considered estimated, biased high, due to a QC anomaly.

U = Not detected.

UB = The analyte was reported as detected, however the result is likely a false-positive due to laboratory contamination.

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TABLE 5: HISTORICAL DATA
Groundwater Monitoring Report – October 2022 Sampling Event
Nenana Header and Rail Line Areas
Nenana, Alaska

Sample No.	Sample Date	Duplicate	GRO (mg/L)	DRO (mg/L)	RRO (mg/L)	BTEX (mg/L)			
						Benzene	Toluene	Ethyl-benzene	Total Xylenes
ADEC Groundwater Cleanup Level [1]**:**			**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.15**	**0.19**
MW-1									
10-NEN-101-GW	10/4/10		0.134	0.604	0.119	0.00511	0.00305J	0.00345J	0.01169J
--	5/27/11		**Not Sampled, Frozen**						
11-NEN-MW1-02-GW	9/27/11		0.1 U	0.65 J	ND (0.2)	0.001	ND (0.005)	0.001	0.0032
12-NEN-101-GW	6/11/12		0.1 U	1.1 U	3.0	ND (0.001)	ND (0.001)	0.0024	0.004
13-NEN-101-GW	6/4/13		0.031 U	0.055 J	0.2	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
13-NEN-208-GW	10/2/13		0.087 J	1.3	0.470 J	0.00086 J	ND (0.00078)	0.00084 J	0.0021 J
MW-1	6/24/14		0.0447 J	0.93	0.389 J	ND (0.0002)	ND (0.0005)	0.00072 J	0.00159 J
MW-1	9/8/14		0.00535	1.1	0.2	ND (0.0002)	ND (0.0005)	ND (0.0005)	ND (0.0005)
MW-1	7/24/15		0.0406 J	1.04	ND (0.259)	0.00023 J	ND (0.0005)	0.0007 J	--
MW-1	9/23/15		0.0747 J	0.788	ND (0.240)	0.00078	ND (0.0005)	0.0013	--
MW-1	10/5/16		0.106	1.73	0.245 J	0.00106	0.000540 J	0.00343	--
GW-MW01-071217-01	7/12/17		0.0492 J	0.936	0.256 U	0.000400	0.000500 J	0.00114	0.0161
GW-MW01-091817-01	9/18/17		0.0602 J	0.841	0.250 U	0.000880	0.000420 J	0.00177	0.00435
GW-MW20-091817-02		✓	0.0557 J	0.905	0.252 U	0.000850	0.000410 J	0.00168	0.00417
GW-NEN-MW1-101018-2	10/10/18		0.0345 J	1.460	0.300 J	0.00092	0.000400 J	0.00169	0.00417
10-30-19-MW01	10/30/19		0.0934 J	0.904	ND (0.8)	0.00117	0.000495 J	0.00288	0.00830
10-09-20-MW01	10/9/20		0.0821 J	1.300	ND (0.8)	0.000808 J	0.000464 J	0.00280	0.00854
10-21-21-MW01	10/21/21		0.231	1.80	0.403 U	0.000858 J	0.000363 J	0.00250	0.00734
10-21-21-FD01		✓	0.227	1.73 UB	0.403 U	0.000860 J	0.000354 J	0.00250	0.00693
10-13-22-MW-1	10/13/22		0.112	1.41	0.380 J	0.00083	0.00202 J	0.00045	0.00641
10-13-22-FD-1		✓	0.108	1.470	0.352 J	0.00083	0.00201 J	0.00045	0.00648
MW-2									
10-NEN-102-GW	10/4/10		0.0208 J	0.166 J	0.0999 J	0.0028	ND (0.0007)	ND (0.0007)	ND (0.0007)
11-NEN-MW2-01-GW	5/27/11		0.1 U	0.19 J	ND (0.2)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.003)
11-NEN-MW21-01-GW		✓	0.1 U	0.18 J	ND (0.2)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.003)
11-NEN-MW2-02-GW	9/27/11		0.1 U	0.57J	ND (0.2)	ND (0.001)	ND (0.005)	ND (0.001)	ND (0.003)
12-NEN-102-GW	6/11/12		0.1 U	1.1 U	ND (2.2)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)
13-NEN-102-GW	6/4/13		0.038	0.53	0.16	0.00083	ND (0.00078)	ND (0.00038)	ND (0.0011)
13-NEN-209-GW	10/2/13		0.031 U	1.2	0.550 J	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
MW-2	6/24/14		0.0607 J	1.8	0.513 J	0.00197	ND (0.0005)	0.00085 J	0.00288 J
MW-2	9/8/14		0.0482 J	7.25	1.61	0.00148	ND (0.0005)	0.00033	ND (0.0005)
MW-2	7/24/15		0.0343 J	1.23	ND (0.252)	ND (0.0002)	ND (0.0005)	ND (0.0005)	--
MW-2	9/23/15		0.0359 J	1.26	0.349 J	0.00018 J	ND (0.0005)	ND (0.0005)	--
MW-2	10/6/16		0.0500 U	1.44	0.152 J	0.000170 J	0.000500 U	0.000500 U	--
GW-MW02-071217-01	7/12/17		0.0500 U	1.54	0.240 U	0.000130 J	0.000500 U	0.000500 U	0.00135
GW-MW02-091917-05	9/19/17		0.0500 U	1.09	0.227 J	0.000200 U	0.000500 U	0.000500 U	0.0015 U
GW-NEN-MW2-101018-3	10/10/18		0.0500 U	1.45	0.348 J	0.000200 U	0.000500 U	0.000500 U	0.0015 U
10-30-19-MW02	10/30/19		0.0138 J	0.797 J	ND (0.8)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)
10-09-20-MW02	10/9/20		0.0106 J	1.31	ND (0.8)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)
10-21-21-MW02	10/21/21		0.100 UB	2.81 J-	0.768 J-	0.000500 U	0.000500 U	0.000500 U	0.00150 U
10-13-21-MW-2	10/13/22		0.108	2.26	1.03	0.000200 U	0.000500 U	0.000500 U	0.00150 U
MW-3									
10-NEN-104-GW	10/4/10		0.672	1.11	0.259	0.0927	0.00644	0.00951	0.02507
10-NEN-105-GW		✓	0.770	1.07	0.304	0.0882	0.00753	0.0124	0.03104
--	5/27/11		**Not Sampled, Frozen**						
11-NEN-MW3-02-GW	9/24/11		0.49	2.2J	0.17 J	0.058	0.0032J	0.0069	0.015
12-NEN-103-GW	6/11/12		0.268	6.8	2.9	0.0752	0.0039	0.003	0.0066
13-NEN-105-GW	6/4/13		0.082	1.5	0.33 J	0.022	ND (0.00078)	ND (0.00038)	ND (0.0011)
13-NEN-212-GW	10/2/13		0.59	5.1	1.0	0.057	0.0052	0.0056	0.018
13-NEN-213-GW		✓	0.63	4.9	1.0	0.055	0.005	0.0056	0.018
MW-3	6/24/14		0.0458 J	2.8	2.04	0.00678	0.00035 J	0.0004 J	ND (0.0015)
MW-14		✓	0.0397 J	3.07	1.1	0.00658	0.00037 J	0.0004 J	0.00109 J
MW-3	9/8/14		0.0198	5.94	1.06	0.00288	0.00309	0.00267	0.01043
MW-3	7/24/15		0.147	5.9	0.63	0.0284	0.00091 J	0.00311	--
MW-3	9/23/15		0.324	9.29	1.42	0.0653	0.00287	0.00486	--
MW-3	10/5/16		0.378	11.2	1.63	0.0733	0.00538	0.00911	--
GW-MW03-071217-01	7/12/17		0.142	2.81	0.256 U	17.9	0.000630 J	0.00424	0.01726
GW-MW03-091917-06	9/19/17		0.451	7.88	0.914	0.0855	0.00661	0.0113	0.03049
GW-NEN-MW3-101118-5	10/11/18		0.477	6.01	0.864	0.0710	0.00422	0.00784	0.0223
GW-NEN-MW19-101118-7		✓	0.438	5.41	0.733	0.0726	0.00449	0.00813	0.0234
10-31-19-MW03	10/31/19		0.265	1.8	ND (0.816)	0.0515	0.00242	0.00506	0.0115
10-10-20-MW03	10/10/20		0.219	4.19	0.634 J	0.0463	0.00411	0.00465	0.0138
10-21-21-MW03	10/21/21		0.646	3.19	0.403 U	0.06530	0.00541	0.00740	0.02100
10-13-21-MW-3	10/13/22		0.423	6.90	1.36	0.04610	0.00697	0.00330	0.02060
MW-4									
10-NEN-103-GW	10/4/10		2.57	7.85	0.534 J	0.0545	0.0319	0.0416	0.566
11-NEN-MW4-01-GW	5/27/11		0.5	42 JS	0.013 J	0.00035 J	0.019 J	ND (0.001)	0.013 J
11-NEN-MW4-02-GW	9/27/11		2.4	20 J	0.58	0.011	0.0043J	0.0058	0.09
11-NEN-MW20-02-GW		✓	1.4	20 J	0.62	0.010	0.0039J	0.0052	0.084
12-NEN-104-GW	6/12/12		0.57	35.1	5.2	0.012	0.0027	0.028	0.0597
12-NEN-105-GW		✓	0.552	38	5.5	0.013	0.0028	0.0031	0.0647
13-NEN-103-GW	6/4/13		0.21	55.0 J	4.1	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
13-NEN-104-GW	6/4/13		0.23	35.0 J	3.1	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
13-NEN-210-GW	10/2/13		0.92 J	38.0	5.1 J	0.008	0.0016 J	0.00096 J	0.02
31-NEN-211-GW		✓	0.38 J	48.0	7.6 J	0.0074	0.0013 J	0.00068 J	0.018
MW-4	6/24/14		0.791	32.9	2.25	0.039	0.012	0.00782	0.0994

TABLE 5: HISTORICAL DATA
Groundwater Monitoring Report – October 2022 Sampling Event
Nenana Header and Rail Line Areas
Nenana, Alaska

Sample No.	Sample Date	Duplicate	GRO (mg/L)	DRO (mg/L)	RRO (mg/L)	BTEX (mg/L)			
						Benzene	Toluene	Ethyl-benzene	Total Xylenes
ADEC Groundwater Cleanup Level (1):			**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.15**	**0.19**
MW-15	6/24/14	✓	0.817	3.67	1.2	0.0427	0.0133	0.0095	0.107
MW-4	9/8/14		0.478	39.1	2.81	0.00202	0.00421	0.00223	0.0298
MW-4	7/24/15		0.51	31.4 J	1.9 J	0.0096	0.00278	0.00337	--
MW-4	9/24/15		0.512	39.0	2.26	0.0063	0.00176	0.00159	--
MW-4	10/5/16		0.375	27.9	1.75	0.00330	0.00165	0.00230	--
GW-MW04-071217-01	7/12/17		0.346	17.4	0.000536	0.00385	0.000870 J	0.00236	--
GW-MW22-071217-01		✓	0.359	19.4	0.752	0.00386	0.000900 J	0.00246	0.0371
GW-MW04-091817-04	9/18/17		0.256	35.6	0.00227	0.00307	0.000710 J	0.000660 J	0.01137
GW-NEN-MW4-101018-4	10/10/18		0.53	26.9	1.76	0.0127	0.00175	0.00197	0.0386
10-30-19-MW04	10/30/19		0.718	20.3	1.71	0.0539	0.00322	0.0128	0.116
10-10-20-MW04	10/10/20		0.505	33	2.12	0.0215	0.00188	0.00256	0.0286
10-10-20-FD02		✓	0.431	25.5	1.75	0.0216	0.00204	0.00254	0.029
10-21-21-MW04	10/21/21		1.660	15.7	0.83	0.104	0.00951	0.0159	0.107
10-13-22-MW-4	10/13/22		0.517	53.7	4.7	0.024	0.00171	0.0018	0.019
MW-5									
10-NEN-106-GW	10/4/10		17.3	0.108 J	0.0425 J	6.27	0.00807	0.0654	0.35667
11-NEN-MW5-01-GW	5/27/11		11	0.17	ND (0.2)	5.2	0.27 J	0.04	0.23
11-NEN-MW5-02-GW	9/28/11		8.7	0.13J	ND (0.2)	3.5	ND (0.005)	ND (0.001)	0.049J
12-NEN-107-GW	6/12/12		10.9	1.1 U	ND (2.2)	3.71	ND (0.02)	ND (0.02)	0.134
13-NEN-106-GW	6/4/13		6.4	0.098 J	0.11 J	2.5	0.0014 J	0.032	0.19
13-NEN-204-GW	10/1/13		7.2	0.150 J	0.270 J	3.1 J	ND (0.0078)	ND (0.0038)	0.066 J
MW-5	6/26/14		4.58	0.346 J	ND (0.250)	2.99	0.0016	0.00373	0.0696
MW-5	9/10/14		3.2	0.289 J	0.259 J	2.06	0.00131	0.00156	0.00529
MW-5	7/23/15		5.23	ND (0.302)	ND (0.252)	2.69	0.00339	0.00511	--
MW-5	9/24/15		5.48	0.286 J	ND (0.240)	2.44	0.00172	0.00174	--
MW-5	10/5/16		6.54	0.630 U	0.263 U	2.85	0.00165 J	0.00220 J	--
GW-MW05-071217-01	7/12/17		7.11	0.377 J	0.245 U	4.58	0.0043	0.0191	0.16754
GW-MW05-091917-09	9/19/17		6.56	0.246 J	0.236 U	3.62	0.00235	0.00498	0.07188
GW-NEN-MW5-101118-9	10/11/18		7.60	0.213 J	0.254 U	3.96	0.00340 J	0.00340 J	0.0777
10-31-19-MW05	10/31/19		5.66	0.278 J	ND (0.888)	4.51	0.00344	0.00379	0.101
10-31-19-FD01		✓	6	0.325 J	ND (0.888)	4.61	ND (0.01)	ND (0.01)	0.0688
10-10-20-MW05	10/10/20		5.23	0.337 J	ND (0.800)	4.03	ND (0.0500)	ND (0.0500)	0.0721 J
10-21-21-MW05	10/21/21		11.7	0.800 UB	0.403 U	5.20	0.0250 U	0.0250 U	0.0516 J
10-14-22-MW-5	10/14/22		8.9	0.313 J	0.349 J	5.22	0.010 U	0.010 U	0.0922
MW-6									
13-NEN-112-GW	6/8/13		0.031 U	0.27 J	0.13 J	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
13-NEN-207-GW	10/2/13		0.031 U	0.180 J	ND (0.260)	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
MW-6	6/24/14		0.0500 U	0.334 J	0.209 J	ND (0.0002)	ND (0.0005)	ND (0.0005)	ND (0.0015)
MW-6	9/8/14		0.0500 U	0.45 J	0.151 J	ND (0.0002)	ND (0.0005)	ND (0.0005)	ND (0.0005)
MW-6	7/24/15		0.0500 U	ND (0.313)	ND (0.261)	ND (0.0002)	ND (0.0005)	ND (0.0005)	--
MW-6	9/23/15		0.0500 U	0.442 J	ND (0.250)	ND (0.0002)	ND (0.0005)	ND (0.0005)	--
--	10/4/16		**Not Sampled**						
GW-MW06-071217-01	7/12/17		0.0500 U	0.273 J	0.245 U	0.00096	0.000500 U	0.000500 U	0.0015 U
GW-MW06-091817-03	9/18/17		0.0500 U	0.300 U	0.250 U	0.000200 U	0.000500 U	0.000500 U	0.0015 U
GW-NEN-MW6-101018-1	10/10/18		0.0500 U	0.194 J	0.240 U	0.000200 U	0.000500 U	0.000500 U	0.0015 U
10-30-19-MW06	10/30/19		0.0121 J	ND (0.872)	ND (0.872)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)
10-09-20-MW06	10/9/20		ND (0.100)	ND (0.800)	ND (0.800)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)
10-21-21-MW06	10/21/21		0.1 UB	0.800 UB	0.403 U	0.00100 UB	0.000500 U	0.000149 J	0.000830 J
10-13-22-MW-6	10/13/22		0.05 U	0.207 J	0.220 J	0.000200 U	0.000500 U	0.000500 U	0.00150 U
MW-10R									
13-NEN-108-GW	6/8/13		0.031 U	0.042 J	0.083 J	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
13-NEN-202-GW	10/1/13		0.031 U	0.07 J	ND (0.260)	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
MW-10	6/25/204		0.0500 U	0.301 J	0.237 J	ND (0.0002)	ND (0.0005)	ND (0.0005)	ND (0.0015)
MW-10	9/9/14		0.0500 U	ND (0.318)	ND (0.0250)	ND (0.0002)	ND (0.0005)	ND (0.0005)	ND (0.0005)
MW-10	7/22/15		0.00005 U	1.61	1.4	ND (0.0002)	ND (0.0005)	ND (0.0005)	--
MW-10	9/22/15		0.0411 J	0.300 U	ND (0.250)	ND (0.0002)	ND (0.0005)	ND (0.0005)	--
--	10/4/16		**Not Sampled**						
--	7/12/17		**Not Sampled**						
GW-MW10R-100417-15	10/4/17		0.0500 U	0.288 U	0.240 U	0.000200 U	0.000500 U	0.000500 U	0.0015 U
GW-NEN-MW10-101218-14	10/12/18		0.0500 U	0.310 U	0.259 U	0.000200 U	0.000500 U	0.000500 U	0.0015 U
10-31-19-MW10R	10/31/19		0.0174 J	ND (0.8)	ND (0.8)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.001)
10-09-20-MW10	10/9/20		ND (0.100)	ND (0.800)	ND (0.800)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.003)
10-21-21-MW10	10/21/21		0.0287 U	0.800 UB	0.403 U	0.000500 U	0.000500 U	0.000500 U	0.00150 U
10-13-22-MW-10R	10/13/22		0.0500 U	0.288 U	0.240 U	0.000200 U	0.000500 U	0.000500 U	0.00150 U
MW-11									
13-NEN-111-GW	6/8/13		0.031 U	0.48 J	0.2 J	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
13-NEN-206-GW	10/1/13		0.031 U	0.680 J	0.670 J	ND (0.00033)	ND (0.00078)	ND (0.00038)	ND (0.0011)
MW-11	6/25/14		0.0500 U	1.66	0.612	ND (0.0002)	ND (0.0005)	ND (0.0005)	ND (0.0015)
MW-11	9/9/14		0.500 U	1.76	0.708	ND (0.0002)	ND (0.0005)	ND (0.0005)	ND (0.0005)
MW-11	7/23/15		0.05 U	1.39	0.292 J	ND (0.0002)	ND (0.0005)	ND (0.0005)	--
MW-11	9/23/15		0.05 U	0.719	0.444 J	ND (0.0002)	ND (0.0005)	ND (0.0005)	--
--	10/4/16		**Not Sampled**						
GW-MW11-071217-01	7/12/17		0.0500 U	0.221 J	0.240 U	0.000220 J	0.000500 U	0.000500 U	0.0015 U
GW-MW11-091917-07	9/19/17		0.0500 U	0.308 U	0.256 U	0.000200 U	0.000500 U	0.000500 U	0.0015 U
GW-NEN-MW11-101118-6	10/11/18		0.0500 U	0.187 J	0.250 U	0.000200 U	0.000500 U	0.000500 U	0.0015 U
10-31-19-MW11	10/31/19		0.0138 J	0.323 J	ND (0.888)	0.000561 J	ND (0.001)	ND (0.001)	ND (0.003)
10-09-20-MW11	10/9/20		ND (0.100)	0.316 J	ND (0.888)	ND (0.001)	ND (0.001)	ND (0.001)	0.000316 J
10-09-20-FD01		✓	0.0106 J	0.307 J	ND (0.800)	ND (0.001)	ND (0.001)	ND (0.001)	0.000223 J
10-21-21-MW11	10/21/21		0.0287 U	0.800 UB	0.403 U	0.000500 U	0.000500 U	0.000500 U	0.00150 U
10-14-22-MW-11	10/14/22		0.0500 U	0.294 U	0.274 J	0.000200 U	0.000500 U	0.000500 U	0.00150 U

TABLE 5: HISTORICAL DATA
Groundwater Monitoring Report – October 2022 Sampling Event
Nenana Header and Rail Line Areas
Nenana, Alaska

Sample No.	Sample Date	Duplicate	GRO (mg/L)	DRO (mg/L)	RRO (mg/L)	BTEX (mg/L)			
						Benzene	Toluene	Ethyl-benzene	Total Xylenes
ADEC Groundwater Cleanup Level [(1)] **:**			**2.2**	**1.5**	**1.1**	**0.0046**	**1.1**	**0.15**	**0.19**
MW-14									
MW-14	9/10/14		0.0817 J	0.225 J	ND (0.259)	0.00618	ND (0.0005)	ND (0.0005)	0.00489
MW-14	7/23/15		0.29	0.305 U	ND (0.254)	0.0539	ND (0.0005)	ND (0.0005)	--
MW-14	9/22/15		0.0776 J	ND (0.273)	ND (0.228)	0.0023	ND (0.0005)	0.00099 J	--
MW-14	10/5/16		0.0500 U	0.276 J	0.254 U	0.000160 J	0.000500 U	0.000500 U	--
MW-22		✓	0.0500 U	0.0306 U	0.255 U	0.000130 J	0.000500 U	0.000500 U	--
GW-MW14-071217-01	7/12/17		0.0416 J	0.294 U	0.245 U	0.0115	0.000500 U	0.000500 U	0.00158
GW-MW23-071217-01		✓	0.0427 J	0.310 U	0.259 U	0.0118	0.000500 U	0.000500 U	0.00152
GW-MW14-091917-08	9/19/17		0.0500 U	0.302 U	0.252 U	0.004	0.000500 U	0.000500 U	0.0015 U
GW-NEN-MW14-101118-8	10/11/18		0.0500 U	0.318 U	0.265 U	0.00539	0.000500 U	0.000500 U	0.00107 J
10-31-19-MW14	10/31/19		0.0169 J	ND (0.800)	ND (0.800)	0.00417	ND (0.001)	ND (0.001)	ND (0.003)
10-10-20-MW14	10/10/20		0.0281 J	ND (0.800)	ND (0.800)	0.00766	ND (0.001)	ND (0.001)	0.000557 J
10-21-21-MW14	10/21/21		0.170 UB	0.800 UB	0.403 UJ	0.04840	0.000500 U	0.000500 U	0.000997 J
10-13-22-MW-14	10/14/22		0.0500 U	0.288 U	0.240 U	0.00095	0.000500 U	0.000500 U	0.00150 U
MW-15									
MW-15	9/9/14		0.0500 U	0.230 J	ND (0.259)	ND (0.0002)	ND (0.0005)	0.00037 J	ND (0.001)
MW-15	7/23/15		0.0500 U	0.305 U	ND (0.254)	0.00032 J	ND (0.0005)	0.00033 J	--
MW-15	9/22/15		0.0500 U	0.300 U	ND (0.250)	0.00037 J	ND (0.0005)	0.00034 J	--
MW-15	10/5/16		0.0402 J	0.566 U	0.472 U	0.00287	0.00191	0.00258	--
GW-MW15-071317-01	7/13/17		0.0500 U	0.283 U	0.236 U	0.00219	0.000500 U	0.000500 U	0.0015 U
GW-MW15-092017-10	9/20/17		0.0500 U	0.308 U	0.256 U	0.00089	0.000400 J	0.000500 J	0.00142
GW-MW21-092017-11		✓	0.0500 U	0.313 U	0.261 U	0.00094	0.000420 J	0.000530 J	0.00143
GW-NEN-MW15-101118-12	10/11/18		0.0500 U	0.300 U	0.250 U	0.000700	0.000800 J	0.000650 J	0.000660 J
10-31-19-MW15	10/31/19		0.0143 J	0.171 J	ND (0.8)	0.000797 J	ND (0.001)	0.000789 J	ND (0.003)
10-10-20-MW15	10/10/20		0.02129 J	ND (0.840)	ND (0.840)	0.00125	0.000319 J	0.000862 J	0.00122 J
10-21-21-MW15	10/21/21		0.100 UB	0.800 UB	0.403 U	0.00100 UB	0.000289 J	0.000961 J	0.00101 J
10-14-22-MW-15	10/14/22		0.0500 U	0.288 U	0.240 U	0.00023 J	0.00035 J	0.000500 U	0.00150 U

Notes:

[(1)] ADEC Cleanup Levels from: 18 AAC 75.345, Table C , October 27, 2018.

[(2)] MW-7 was replaced on 9/21/17 and renamed MW-7R.

[(3)] MW-10 was replaced on 10/03/17 and renamed MW-10R.

Key:

-- - Not analyzed or not applicable
AAC - Alaska Administrative Code
ADEC - Alaska Department of Environmental Conservation
B - Blank contamination, the analyte was detected within 5 times of blank sample.
BTEX - Benzene, toluene, ethylbenzene, and total xylenes
DRO - Diesel-range organics
GRO - Gasoline-range organics
J - Estimated Value. Analyte detected at less than the RDL and greater than or equal to the MDL.
J+ = The quantitation is considered estimated, biased high, due to a QC anomaly.
JS - Estimated value. Surrogate recoveries outside of method acceptance limits.
MDL - Method Detection Limit
mg/L - Milligrams per liter
ND - Not detected; analyte not detected above the RDL.
R - Reject due to surrogate recovery < 10%. Data is usable for screening purposes.
RDL - Reported detection limit
RRO - Residual-range organics
U - Analyte was analyzed for, but not detected
UB = The result is considered a false positive result due to contamination, and should be treated as non-detect.

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TABLE 6: MANN-KENDALL INPUT DATA
Groundwater Monitoring Report – October 2022 Sampling Event
Nenana Header and Rail Line Areas
Nenana, Alaska

GRO

MW-1		MW-2		MW-3		MW-4		MW-5	
10/4/10	0.134	10/4/10	0.0208	10/4/10	0.770	10/4/10	2.57	10/4/10	17.3
9/27/11	0.05	9/27/11	0.05	9/24/11	0.49	9/27/11	2.4	9/28/11	8.7
10/2/13	0.087	10/2/13	0.0155	10/2/13	0.63	10/2/13	0.92	10/1/13	7.2
9/8/14	0.00535	9/8/14	0.0482	9/8/14	0.0198	9/8/14	0.478	9/10/14	3.2
9/23/15	0.0747	9/23/15	0.0359	9/23/15	0.324	9/24/15	0.512	9/24/15	5.48
10/5/16	0.106	10/6/16	0.025	10/5/16	0.378	10/5/16	0.375	10/5/16	6.54
9/18/17	0.060	9/19/17	0.025	9/19/17	0.451	9/18/17	0.256	9/19/17	6.56
10/10/18	0.035	10/10/18	0.025	10/11/18	0.477	10/10/18	0.53	10/11/18	7.6
10/30/19	0.093	10/30/19	0.0138	10/31/19	0.265	10/30/19	0.718	10/31/19	5.66
10/10/20	0.082	10/10/20	0.0106	10/10/20	0.219	10/10/20	0.505	10/10/20	5.23
10/21/21	0.231	10/21/21	0.025	10/21/21	0.646	10/21/21	1.66	10/21/21	11.7
10/13/22	0.112	10/13/22	0.025	10/13/22	0.423	10/13/22	0.517	10/13/22	8.92

DRO

MW-1		MW-2		MW-3		MW-4		MW-5	
10/4/10	0.604	10/4/10	0.166	10/4/10	1.11	10/4/10	7.85	10/4/10	0.108
9/27/11	0.65	9/27/11	0.57	9/24/11	2.2	9/27/11	20	9/28/11	0.13
10/2/13	1.3	10/2/13	1.2	10/2/13	5.1	10/2/13	48.0	10/1/13	0.15
9/8/14	1.1	9/8/14	7.25	9/8/14	5.94	9/8/14	39.1	9/10/14	0.289
9/23/15	0.788	9/23/15	1.26	9/23/15	9.29	9/24/15	39.0	9/24/15	0.286
10/5/16	1.73	10/6/16	1.44	10/5/16	11.20	10/5/16	27.9	10/5/16	0.315
9/18/17	0.905	9/19/17	1.09	9/19/17	7.88	9/18/17	35.6	9/19/17	0.246
10/10/18	1.460	10/10/18	1.45	10/11/18	6.01	10/10/18	26.9	10/11/18	0.213
10/30/19	0.904	10/30/19	0.797	10/31/19	1.8	10/30/19	20.3	10/31/19	0.278
10/10/20	1.3	10/10/20	1.31	10/10/20	4.19	10/10/20	33	10/10/20	0.337
10/21/21	1.8	10/21/21	2.81	10/21/21	3.19	10/21/21	15.7	10/21/21	0.04
10/13/22	1.47	10/13/22	2.26	10/13/22	6.9	10/13/22	53.7	10/13/22	0.313

Benzene

MW-3		MW-4		MW-5	
10/4/10	0.0927	10/4/10	0.0545	10/4/10	6.27
9/24/11	0.058	9/27/11	0.011	9/28/11	3.5
10/2/13	0.057	10/2/13	0.008	10/1/13	3.1
9/8/14	0.00288	9/8/14	0.00202	9/10/14	2.06
9/23/15	0.0653	9/24/15	0.0063	9/24/15	2.44
10/5/16	0.0733	10/5/16	0.0033	10/5/16	2.85
9/19/17	0.0855	9/18/17	0.00307	9/19/17	3.62
10/11/18	0.0726	10/10/18	0.0127	10/11/18	3.96
10/31/19	0.0515	10/30/19	0.0539	10/31/19	4.51
10/10/20	0.0463	10/10/20	0.0216	10/10/20	4.03
10/21/21	0.0653	10/21/21	0.104	10/21/21	5.2
10/13/22	0.0461	10/13/22	0.0244	10/13/22	5.22

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ATTACHMENT 3

Field Forms and Notes

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JOURNAL
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NENANA
2020
CAMP

10/21/21 Nenana DNA

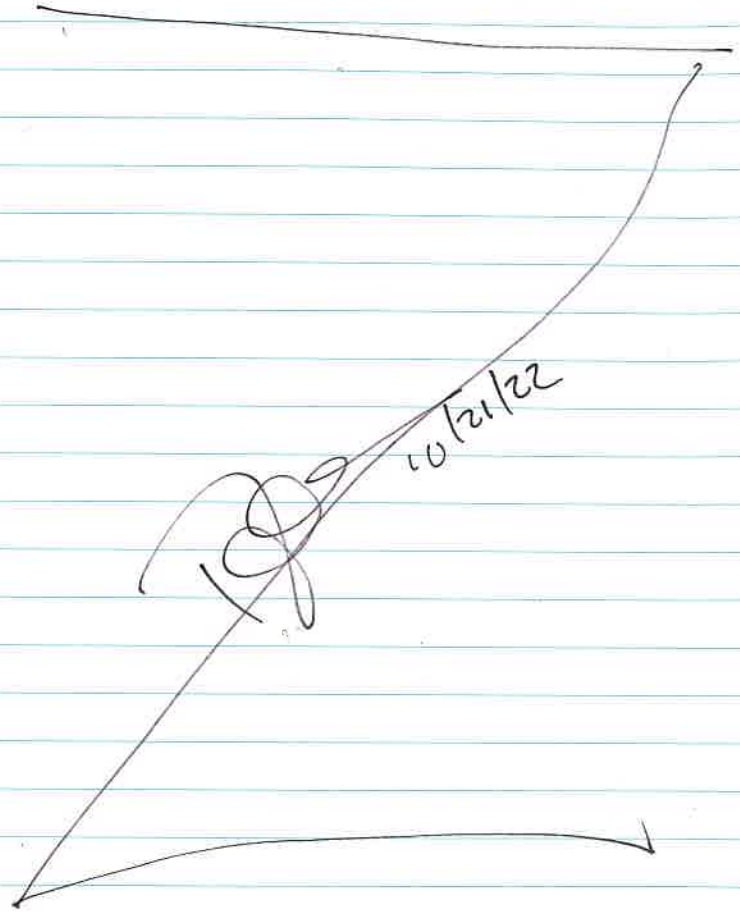
1730 Purging at MW-01, will take Field dup here.

10-21-21-MW01

10-21-21-FD01

1815 move to final well, MW-4

1855 Complete work at MW-4



10/13/22 Nenana DNA

0530 Depart for Airport.

0800 Arrive Fairbanks.

1130 Arrive at MW-10R,

1145 Begin purge. Using new tubing. Pump: Geotech S/N 21.01A0449.

1233 Collected sample 10-13-22-MW-10R at 1212. move to well inside city gate east of bridge.

1330 Collected sample 10-13-22-MW-6. Move to MW-2. See data sheet.

1435 Collected sample 10-13-22-MW-2. see data sheet. move to MW-1.

1438 ~~MW-2 appears to be dry with a TD of 13.25' bgs. Probe is wet.~~ DF Operator Error. Probe works see data sheet for MW-1

1525 Complete collection of 10-13-22-MW-1 and field dup 10-13-22-FD-1. See data sheet. move to MW-4.

1610 Complete collection of 10-13-22-MW-4 see data sheet for details. move to MW-3.

10/13/22

10/13/22 Nenana DNA

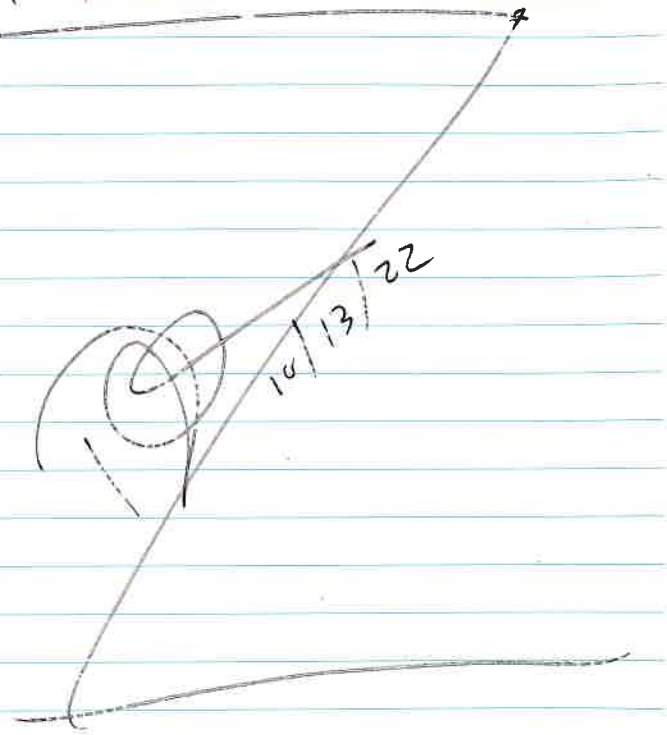
1711 Collected sample 10-13-22-mw-3. See data sheet. Move to mw-11

1720 Lots of sediment and/or bio-foul at mw-11. Very slow purge to start.

1750 unable to purge at mw-11 due to bio-foul. move to mw-14

1832 finally get pump to work at mw-14. Begin purge.

1900 Collected sample 10-13-22-mw-14. Depart site.



10/14/22 Nenana DNA

0830 Arrive at mw-15 to setup.

0908 Begin purge at mw-15.

0945 Collected 10-14-22-mw-15 at 0930. move to mw-5.

1001 begin purge at mw-5.

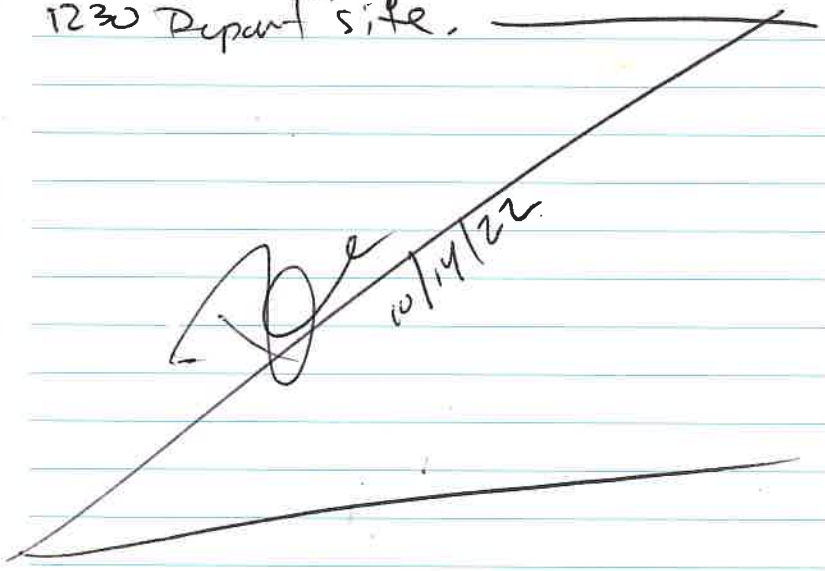
1015 collect 10-14-22-mw-5. See data sheet for details

1020 Re-attempt to sample mw-11.

1130 slow flow at mw-11, clean up, attach YSI. orange bio foul.

1150 Sample 10-14-22-mw-11 collected. mw-11 took lots of time to clean up before sampling..

1230 Depart site.



dna ENVIRONMENTAL — Groundwater Sampling Worksheet

Project Name: **NENANA** | Sample Location (ie. MW1): MW-1
Client: **Crowley Fuels, LLC** | Date: 10-13-22
Sampler: D. Frank | Purge Start Time: 1445
Weather Conditions: cold ~ 19F, calm.

Sample ID: 10-13-22-MW-1	Time: 1505	(primary)	dup	split	ms/msd
Sample ID: 10-13-22-FD-01	Time: 1200	primary	(dup)	split	ms/msd
Sample ID:	Time:	primary	dup	split	ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl ✓			
DRO/RRO	2x250mL amber	HCl ✓			
PAHs	2x250mL amber	ice ✓			
GRO	3x40mL VOA	HCl ✓			
TOTAL LEAD	1 x 125 mL HDPE	HNO3 ✓			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2"
Product Present? (y/n/sheen): N
Depth to Top of Product (ft BTOC):
Depth to Oil/Water Interface (ft BTOC):
(BTOC = below top of casing)

Total Well Depth (ft BTOC): 13.25 (depth to bottom)
Depth to Water (ft BTOC): 9.43
Water Column (ft): 3.82
One Purge Volume (gal): 0.6
purge calculation formula on back

Sensory Observations

Color: (Clear), Amber, Tan, Brown, Grey, Milky White, Other:
Odor: (None), Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
Turbidity: (None), Low, Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	1452	~1	7.9	6.63	574	5.0	0.31	62	4	1	9.43	0.0
2	1455	1.7	7.8	6.65	573	2.3	0.43	50	4	1	9.43	0.0
3	1500	1.25	7.9	6.66	573	0.9	.37	19	4	1	9.43	0.0
4												
5												
6												
7												
8												
9												
10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): ~1 L/min | Total Volume Purged: ~3gal | Measured Drawdown (ft): 0.0

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hyrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, ~~submersible pump~~, etc.):
Sample Method (disposable bailer, teflon bailer, ~~submersible pump~~, etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.):

Remarks (well recovery, unusual conditions/observations):

Signed: _____ Date: _____
Signed/Reviewer: _____ Date: 10/22/22

Instrument Observations (continued)

dna ENVIRONMENTAL — Groundwater Sampling Worksheet

Project Name: **NENANA** | Sample Location (ie. MW1): MW-2
Client: **Crowley Fuels, LLC** | Date: 10-13-22
Sampler: D. Frank | Purge Start Time: 1404
Weather Conditions: 19°F calm overcast.

Sample ID: 10-13-22-mw-2 Time: 1420 (primary) dup split ms/msd
Sample ID: Time: primary dup split ms/msd
Sample ID: Time: primary dup split ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl			
DRO/RRO	2x250mL amber	HCl			
PAHs	2x250mL amber	ice			
GRO	3x40mL VOA	HCl			
TOTAL LEAD	1 x 125 mL HDPE	HNO3			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2"
Product Present? (y/n/sheen): N
Depth to Top of Product (ft BTOC):
Depth to Oil/Water Interface (ft BTOC):
(BTOC = below top of casing)

Total Well Depth (ft BTOC): 12.62 (depth to bottom)
Depth to Water (ft BTOC): 8.40
Water Column (ft) 4.22
One Purge Volume (gal): 0.67
purge calculation formula on back

Sensory Observations

Color: (Clear), Amber, Tan, Brown, Grey, Milky White, Other:
Odor: (None), Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
Turbidity: (None), Low, Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	1410	1.5	6.9	6.62	6416	39	7.40	110	clear	none	8.40	0.0
2	1416	1.7	6.5	6.64	6433	13	3.27	116	clear	none	8.40	0.0
3	1419	1.5	6.5	6.64	633	5.4	3.16	116	clear	none	8.40	0.0
4												
5												
6												
7												
8												
9												
10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): ~0.75 L/min Total Volume Purged: ~3.2 Measured Drawdown (ft): 0.0

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hyrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, (submersible pump), etc.):
Sample Method (disposable bailer, teflon bailer, (submersible pump), etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.):

Remarks (well recovery, unusual conditions/observations):

Signed: Date:
Signed/Reviewer: Date: 10/22/22

Instrument Observations (continued)

dnaENVIRONMENTAL

Groundwater Sampling Worksheet

Project Name: **NENANA** Sample Location (ie. MW1): MW-3

Client: **Crowley Fuels, LLC** Date: 10-13-22

Sampler: D. Frank Purge Start Time: 1640

Weather Conditions: cold, clear, calm

Sample ID: 10-13-22-MW-3 Time: 1700 (primary) dup split ms/msd

Sample ID: _____ Time: _____ primary dup split ms/msd

Sample ID: _____ Time: _____ primary dup split ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl			
DRO/RRO	2x250mL amber	HCl			
PAHs	2x250mL amber	ice			
GRO	3x40mL VOA	HCl			
TOTAL LEAD	1 x 125 mL HDPE	HNO3			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2" Total Well Depth (ft BTOC): 12.9 (depth to bottom)

Product Present? (y/n/sheen) _____ Depth to Water (ft BTOC): 8.89

Depth to Top of Product (ft BTOC): _____ Water Column (ft) 4.01

Depth to Oil/Water Interface (ft BTOC): _____ One Purge Volume (gal): 0.64

(BTOC = below top of casing) *purge calculation formula on back*

Sensory Observations

Color: (Clear), Amber, Tan, Brown, Grey, Milky White, Other:

Odor: ~~None~~, (Low) Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown

Turbidity: ~~None~~, Low, Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	1645	1.25	7.4	6.64	631	27 0.89	~~1.42~~	75	clear	Yes	8.89	0.6
2	1650	1.25	7.4	6.62	644	24 0.81	~~1.70~~	51			8.89	0.0
3	1653	.75	7.4	6.61	648	14 0.20	~~1.9~~	38			8.89	0.0
4	1657	1	7.4	6.61	647	24 0.13	~~0.9~~	32			8.89	0.0
5												
6												
7												
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10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): ~1 L/min Total Volume Purged: ~4.25 Measured Drawdown (ft): 0.0

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hydrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, ~~submersible pump~~, etc.):

Sample Method (disposable bailer, teflon bailer, ~~submersible pump~~, etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.):

Remarks (well recovery, unusual conditions/observations):

Signed: _____ Date: _____

Signed/Reviewer: _____ Date: 10/22/22

Instrument Observations (continued)

dna ENVIRONMENTAL — Groundwater Sampling Worksheet

Project Name: **NENANA** | Sample Location (ie. MW1): MW-4
Client: **Crowley Fuels, LLC** | Date: 10-13-22
Sampler: D. Frank | Purge Start Time: 1539
Weather Conditions: ~20°F, clear, cold

Sample ID: 10-13-22-MW-4 Time: 1600 (primary) dup split ms/msd
Sample ID: Time: primary dup split ms/msd
Sample ID: Time: primary dup split ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl			
DRO/RRO	2x250mL amber	HCl			
PAHs	2x250mL amber	ice			
GRO	3x40mL VOA	HCl			
TOTAL LEAD	1 x 125 mL HDPE	HNO3			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2"
Product Present? (y/n/sheen)
Depth to Top of Product (ft BTOC):
Depth to Oil/Water Interface (ft BTOC):
(BTOC = below top of casing)

Total Well Depth (ft BTOC): 13.6 (depth to bottom)
Depth to Water (ft BTOC): 9.49
Water Column (ft) 4.11
One Purge Volume (gal): 0.66
purge calculation formula on back

Sensory Observations

Color: (Clear), Amber, Tan, Brown, Grey, Milky White, Other:
Odor: None, Low, (Medium), (High), Very Strong, H2S, Fuel Like, Chemical ?, Unknown
Turbidity: (None) Low, Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	1544	1	7.9	6.42	756	12	2.15	24	clear	yes	0.6	9.49
2	1551	1.75	8.0	6.41	750	11	1.90	14	"	yes	0.0	9.49
3	1555	1	7.9	6.42	749	8	1.89	12	"	yes	0.0	9.49
4												
5												
6												
7												
8												
9												
10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): .8 L/min Total Volume Purged: ~4.75 Measured Drawdown (ft): 0.0

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hydrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.):
Sample Method (disposable bailer, teflon bailer, submersible pump, etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.):

Remarks (well recovery, unusual conditions/observations):

Signed: Date:
Signed/Reviewer: Date: 10/22/22

Instrument Observations (continued)

dnaENVIRONMENTAL

Groundwater Sampling Worksheet

Project Name: **NENANA** Sample Location (ie. MW1): MW-5

Client: **Crowley Fuels, LLC** Date: 10-15-22

Sampler: D. Frank Purge Start Time: 1001

Weather Conditions:

Sample ID: 10-14-22-MW-5 Time: 1015 (primary) dup split ms/msd

Sample ID: Time: primary dup split ms/msd

Sample ID: Time: primary dup split ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl			
DRO/RRO	2x250mL amber	HCl			
PAHs	2x250mL amber	ice			
GRO	3x40mL VOA	HCl			
TOTAL LEAD	1 x 125 mL HDPE	HNO3			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2" Total Well Depth (ft BTOC): 11.90 (depth to bottom)

Product Present? *(y/n/sheen)* Depth to Water (ft BTOC): 7.87

Depth to Top of Product (ft BTOC): Water Column (ft) 04.03

Depth to Oil/Water Interface (ft BTOC): One Purge Volume (gal): 0.65

(BTOC = below top of casing) *purge calculation formula on back*

Sensory Observations

Color: (Clear) Amber, Tan, Brown, Grey, Milky White, Other:

Odor: None, (Low) Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown

Turbidity: None, (Low), Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	1006	1	7.4	6.75	534	19	.18	173	clear	HC	11.89	0.01
2	1010	.8	7.6	6.80	537	11	0.10	156	"	"	11.89	0.01
3	1014	.8	7.6	6.80	538	0.8	0.10	155	"	"	11.89	0.01
4												
5												
6												
7												
8												
9												
10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): ~0.8 L/min Total Volume Purged: ~2.6 Measured Drawdown (ft): 0.01

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hydrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, ~~submersible pump~~, etc.):

Sample Method (disposable bailer, teflon bailer, ~~submersible pump~~, etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement ~~seal~~ intact, etc.):

Remarks (well recovery, unusual conditions/observations):

Signed: Date:

Signed/Reviewer: Date: 10/22/22

Instrument Observations (continued)

dnaENVIRONMENTAL

Groundwater Sampling Worksheet

Project Name: **NENANA**
Client: **Crowley Fuels, LLC**
Sampler: D. Frank
Weather Conditions:

Sample Location (ie. MW1): MW-6
Date: 10-13-22
Purge Start Time: ~~1250~~ 1254

Sample ID: 10-13-22-MW-6 Time: 1315 (primary) dup split ms/msd
Sample ID: Time: primary dup split ms/msd
Sample ID: Time: primary dup split ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl			
DRO/RRO	2x250mL amber	HCl			
PAHs	2x250mL amber	ice			
GRO	3x40mL VOA	HCl			
TOTAL LEAD	1 x 125 mL HDPE	HNO3			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2"
Product Present? (y/n/sheen)
Depth to Top of Product (ft BTOC):
Depth to Oil/Water Interface (ft BTOC):
(BTOC = below top of casing)

Total Well Depth (ft BTOC): 18.84 (depth to bottom)
Depth to Water (ft BTOC): 9.33
Water Column (ft)
One Purge Volume (gal):
purge calculation formula on back

Sensory Observations

Color: (Clear), Amber, Tan, Brown, Grey, Milky White, Other:
Odor: None, (Low), Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	1258	1	6.9	6.63	381	36	—	—	Clear	S.HC	10.33	0.00
2	1304	1.5	7.0	6.62	441	34	—	—			9.33	12.00
3	1308	2	7.1	6.69	471	34	0.13	107			9.33	0.00
4	1312	3	7.1	6.67	475	29	0.09	93	clear	S.HC	9.33	0.00
5												
6												
7												
8												
9												
10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): ~.5 L/min Total Volume Purged: 7.5 Measured Drawdown (ft): 0.00

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hyrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, ~~submersible pump~~, etc.):
Sample Method (disposable bailer, teflon bailer, submersible pump, etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.):

Remarks (well recovery, unusual conditions/observations):

Signed: Date:
Signed/Reviewer: Date: 10/22/22

Instrument Observations (continued)

dnaENVIRONMENTAL

Groundwater Sampling Worksheet

Project Name: **NENANA** Sample Location (ie. MW1): MW-10R

Client: **Crowley Fuels, LLC** Date: 10-13-22

Sampler: D. Frank Purge Start Time: 1145 AM

Weather Conditions: partly cloudy 24°C calm

Sample ID: 10-13-22-MW-10R Time: 12:12 (primary) dup split ms/msd

Sample ID: _____ Time: _____ primary dup split ms/msd

Sample ID: _____ Time: _____ primary dup split ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl			
DRO/RRO	2x250mL amber	HCl			
PAHs	2x250mL amber	ice			
GRO	3x40mL VOA	HCl			
TOTAL LEAD	1 x 125 mL HDPE	HNO3			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2" Total Well Depth (ft BTOC): 13.34 (depth to bottom)

Product Present? (y/n/sheen) _____ Depth to Water (ft BTOC): 6.62

Depth to Top of Product (ft BTOC): _____ Water Column (ft) 6.72

Depth to Oil/Water Interface (ft BTOC): _____ One Purge Volume (gal): 1.09 (3.2 gal)

(BTOC = below top of casing) *purge calculation formula on back*

Sensory Observations

Color: (Clear) Amber, Tan, Brown, Grey, Milky White, Other:

Odor: (None) Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown

Turbidity: (None) Low, Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	1153	2	8.2	6.36	349	61	1.32	310	Clear	NUM	6.60	~~6.62~~
2	1155	2.5	8.2	6.42	788	28	1.23	308	"	"	"	"
3	1157	3	8.2	6.46	365	21.	1.13	306	"	"	"	"
4	1211	6.5	8.1	6.63	3660	4.27	0.87	295	"	"	"	"
5												
6												
7												
8												
9												
10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): 1 L/min Total Volume Purged: 6.5 Measured Drawdown (ft): 0.02

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hyrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, (submersible pump), etc.):

Sample Method (disposable bailer, teflon bailer, (submersible pump), etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.):
OK condition

Remarks (well recovery, unusual conditions/observations):
good recovery & non-turbid water

Signed: _____ Date: _____

Signed/Reviewer: _____ Date: 10/22/22

Instrument Observations (continued)

dna ENVIRONMENTAL

Groundwater Sampling Worksheet

Project Name: **NENANA**
Client: **Crowley Fuels, LLC**
Sampler: D. Frank
Weather Conditions:

Sample Location (ie. MW1): MW-11
Date: ~~10-13-22~~ 10-14-22
Purge Start Time: ~~1730~~ 1030

Sample ID: 10-14-22-MW-11 Time: 1150 primary dup split ms/msd
Sample ID: Time: primary dup split ms/msd
Sample ID: Time: primary dup split ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl			
DRO/RRO	2x250mL amber	HCl			
PAHs	2x250mL amber	ice			
GRO	3x40mL VOA	HCl			
TOTAL LEAD	1 x 125 mL HDPE	HNO3			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2"
Product Present? (y/n/sheen)
Depth to Top of Product (ft BTOC):
Depth to Oil/Water Interface (ft BTOC):
(BTOC = below top of casing)

Total Well Depth (ft BTOC): 13.15 (depth to bottom)
Depth to Water (ft BTOC): 8.55
Water Column (ft) 4.6
One Purge Volume (gal): 0.73
purge calculation formula on back

Sensory Observations

Color: Clear, Amber, Tan, Brown, Grey, Milky White, Other:
Odor: None, Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	1120	~2.5				121						
2	1130	~2.5									NM	
3	1140	~2.5										
4	1145	~2.25	6.9	6.6	391	5.6	~~.08~~ .10	391 127				
5												
6												
7												
8												
9												
10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): ~1 L/min Total Volume Purged: ~20 Measured Drawdown (ft): 0.01

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hyrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, submersible pump, etc.):
Sample Method (disposable bailer, teflon bailer, submersible pump, etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.): Lots of bio-foul. Initial flow very slow

Remarks (well recovery, unusual conditions/observations): MW-11 AS been cut down, elevation data needed.

Signed:
Date:
Signed/Reviewer:
Date: 10/22/22

Instrument Observations (continued)

dna ENVIRONMENTAL

Groundwater Sampling Worksheet

Project Name: **NENANA** Sample Location (ie. MW1): MW-14

Client: **Crowley Fuels, LLC** Date: 10-13-22

Sampler: D. Frank Purge Start Time: 1832

Weather Conditions:

Sample ID: 10-13-22-mw-14 Time: 1845 primary dup split ms/msd

Sample ID: Time: primary dup split ms/msd

Sample ID: Time: primary dup split ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl			
DRO/RRO	2x250mL amber	HCl			
PAHs	2x250mL amber	ice			
GRO	3x40mL VOA	HCl			
TOTAL LEAD	1 x 125 mL HDPE	HNO3			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2" Total Well Depth (ft BTOC): 14.80 (depth to bottom)

Product Present? (y/n/sheen) Depth to Water (ft BTOC): 7.44

Depth to Top of Product (ft BTOC): Water Column (ft) 7.36

Depth to Oil/Water Interface (ft BTOC): One Purge Volume (gal): 1.18

(BTOC = below top of casing) *purge calculation formula on back*

Sensory Observations

Color: (Clear), Amber, Tan, Brown, Grey, Milky White, Other:

Odor: None, (Low), Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown

Turbidity: None, Low, Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	1836	1	6.8	6.95	460	23	.17	5.0	clear	S. HC	7.44	0.00
2	1839	1.75	6.6	6.91	460	18	.16	5.0		S. HC	7.44	0.00
3	1844	1.5	6.6	6.95	460	14	.17	4.9		S. HC	7.44	0.00
4												
5												
6												
7												
8												
9												
10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): ~1 L/min Total Volume Purged: ~3.5 Measured Drawdown (ft): 0.00

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hydrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, ~~submersible pump~~, etc.):

Sample Method (disposable bailer, teflon bailer, submersible pump, etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.):

Remarks (well recovery, unusual conditions/observations):

Signed: Date:

Signed/Reviewer: Date: 10/22/22

Instrument Observations (continued)

dna ENVIRONMENTAL — Groundwater Sampling Worksheet

Project Name: **NENANA** | Sample Location (ie. MW1): MW-15
Client: **Crowley Fuels, LLC** | Date: 10-14-22
Sampler: D. Frank | Purge Start Time: 0908
Weather Conditions:

Sample ID: 10-14-22-MW-15 Time: 0930 (primary) dup split ms/msd
Sample ID: Time: primary dup split ms/msd
Sample ID: Time: primary dup split ms/msd

Analyses	Number/type of Bottles	Comments/ preservation:	Analyses	Number/type of Bottles	Comments/ preservation:
VOCs	3x40mL VOA	HCl			
DRO/RRO	2x250mL amber	HCl			
PAHs	2x250mL amber	ice			
GRO	3x40mL VOA	HCl			
TOTAL LEAD	1 x 125 mL HDPE	HNO3			

Well Information / Purge Volume Calculation

Well Casing Diameter (in): 2"
Product Present? *(y/n/sheen)*
Depth to Top of Product (ft BTOC):
Depth to Oil/Water Interface (ft BTOC):
(BTOC = below top of casing)

Total Well Depth (ft BTOC): 14.87 (depth to bottom)
Depth to Water (ft BTOC): 7.94
Water Column (ft) 6.93
One Purge Volume (gal): 1.1
purge calculation formula on back

Sensory Observations

Color: (Clear) Amber, Tan, Brown, Grey, Milky White, Other:
Odor: (None) Low, Medium, High, Very Strong, H2S, Fuel Like, Chemical ?, Unknown
Turbidity: (None) Low, Medium, High, Very Turbid, Heavy Silts

Instrument Observations

Round	Time	Volume (gal)	Temp °C	pH	Conductivity ( )	Turbidity (NTUs)	DO (mg/L)	ORP (mV)	Color	Odor	Water Level (ft BTOC)	Draw-down (ft)
1	0910	.25	6.4	6.41		23	0.90	214	clear	No	7.94	0.0
2	0915	1.25	6.4	6.41		18	0.31	200	"	"	7.94	0.0
3	0920	1.25	6.4	6.41		5	0.24	196	"	"	7.94	0.0
4	0930	2.5	6.4	6.42	584	5	0.24	194	"	"	7.94	0.0
5												
6												
7												
8												
9												
10												
11												
12												

see back for additional entry lines if needed

Purge Rate (low flow): 1.0 L/min Total Volume Purged: ~5.5 Measured Drawdown (ft): 0.0

Notes: Drawdown should be less than 0.3 feet while sampling. Minimal drawdown shall be achieved and measured by pumping at a low rate (approximately 0.1 to 0.5 liter/minute) and continually measuring water levels in the well. Note that site's hyrogeology may make it difficult to achieve this specification.

Purge Method (disposable bailer, teflon bailer, ~~submersible pump~~, etc.):
Sample Method (disposable bailer, teflon bailer, (submersible pump), etc.):

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.):

Remarks (well recovery, unusual conditions/observations):

Signed: Date:
Signed/Reviewer: Date: 10/22/22

Instrument Observations (continued)

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ATTACHMENT 4

Laboratory Reports

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Laboratory Report of Analysis

To: DNA Environmental Consultants, LLC
111 W. 9th Ave
Anchorage, AK 99501
(907)350-4897

Report Number: **1226365**

Client Project: **Nenana RR Site**

Dear Daniel Frank,

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

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

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

Sincerely,
SGS North America Inc.

_____

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

Case Narrative

SGS Client: **DNA Environmental Consultants, LLC**
SGS Project: **1226365**
Project Name/Site: **Nenana RR Site**
Project Contact: **Daniel Frank**

Refer to sample receipt form for information on sample condition.

10-13-22-MW-2 (1226365002) PS

8260D - Carryover for naphthalene was suspected for this sample. Sample was re-analyzed outside of hold time and results confirm carryover in the original results. The in-hold data is reported.

10-13-22-MW-4 (1226365004) PS

8270D SIM - PAH Surrogate recoveries for 2-methylnaphthalene and fluoranthene-d10 do not meet QC criteria.
8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria due to matrix interference.
8270D SIM - PAH The LOQs are elevated due to sample dilution. The sample was diluted due to matrix interference with the internal standard.

10-13-22-MW-6 (1226365006) PS

8260D - Carryover for naphthalene was suspected for this sample. Sample was re-analyzed outside of hold time and results confirm carryover in the original results. The in-hold data is reported.

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

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Report of Manual Integrations

Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
8270D SIM (PAH)				
1226365005	10-14-22-MW-5	XMS13420	1-Methylnaphthalene	BLC
1693549	CCV for HBN 1847247 [XMS/13420	XMS13420	Naphthalene	BLC

Manual Integration Reason Code Descriptions

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: 11/10/2022 3:17:45PM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. The results apply to the samples as received. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 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.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

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

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Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
10-13-22-MW-1	1226365001	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)
10-13-22-MW-2	1226365002	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)
10-13-22-MW-3	1226365003	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)
10-13-22-MW-4	1226365004	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)
10-14-22-MW-5	1226365005	10/14/2022	10/18/2022	Water (Surface, Eff., Ground)
10-13-22-MW-6	1226365006	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)
10-13-22-MW-10R	1226365007	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)
10-14-22-MW-11	1226365008	10/14/2022	10/18/2022	Water (Surface, Eff., Ground)
10-13-22-MW-14	1226365009	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)
10-14-22-MW-15	1226365010	10/14/2022	10/18/2022	Water (Surface, Eff., Ground)
10-13-22-RB-1	1226365011	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)
10-13-22-FD-1	1226365012	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)
Trip Blank	1226365013	10/13/2022	10/18/2022	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM (PAH)	8270 PAH SIM Semi-Vol GC/MS Liq/Liq ext.
AK103	DRO/RRO Low Volume Water
SW6020B	Metals by ICP-MS
SW8260D	Volatile Organic Compounds (W) FULL
AK101	Gasoline Range Organics (W)
AK102	DRO/RRO Low Volume Water

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Detectable Results Summary

Client Sample ID: **10-13-22-MW-1**
Lab Sample ID: 1226365001

	Parameter	Result	Units
Metals by ICP/MS	Lead	5.94	ug/L
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	6.51	ug/L
	2-Methylnaphthalene	4.49	ug/L
	Acenaphthene	7.76	ug/L
	Acenaphthylene	0.0631	ug/L
	Anthracene	0.0753	ug/L
	Benzo(a)Anthracene	0.00409J	ug/L
	Fluoranthene	0.149	ug/L
	Fluorene	2.95	ug/L
	Naphthalene	48.7	ug/L
	Phenanthrene	1.93	ug/L
	Pyrene	0.0738	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	1.41	mg/L
	Residual Range Organics	0.380J	mg/L
Volatile Fuels	Gasoline Range Organics	0.112	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	22.8	ug/L
	1,3,5-Trimethylbenzene	6.09	ug/L
	4-Isopropyltoluene	2.08	ug/L
	Benzene	0.830	ug/L
	Ethylbenzene	2.02	ug/L
	Isopropylbenzene (Cumene)	2.28	ug/L
	Naphthalene	99.9	ug/L
	n-Propylbenzene	2.88	ug/L
	o-Xylene	0.890J	ug/L
	P & M -Xylene	5.52	ug/L
	sec-Butylbenzene	1.84	ug/L
	Toluene	0.450J	ug/L
	Xylenes (total)	6.41	ug/L

Client Sample ID: **10-13-22-MW-2**
Lab Sample ID: 1226365002

	Parameter	Result	Units
Metals by ICP/MS	Lead	6.13	ug/L
Polynuclear Aromatics GC/MS	Naphthalene	0.0259	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	2.26	mg/L
	Residual Range Organics	1.03	mg/L
Volatile GC/MS	Naphthalene	0.380J	ug/L

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Detectable Results Summary

Client Sample ID: **10-13-22-MW-3**
Lab Sample ID: 1226365003

	Parameter	Result	Units
Metals by ICP/MS	Lead	2.45	ug/L
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	1.98	ug/L
	2-Methylnaphthalene	0.465	ug/L
	Acenaphthene	2.04	ug/L
	Acenaphthylene	0.0337	ug/L
	Fluoranthene	0.0672	ug/L
	Fluorene	0.653	ug/L
	Naphthalene	17.4	ug/L
	Phenanthrene	0.290	ug/L
	Pyrene	0.0451	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	6.90	mg/L
	Residual Range Organics	1.36	mg/L
Volatile Fuels	Gasoline Range Organics	0.423	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	29.5	ug/L
	1,2-Dichloroethane	0.390J	ug/L
	1,3,5-Trimethylbenzene	2.18	ug/L
	2-Butanone (MEK)	4.03J	ug/L
	4-Isopropyltoluene	2.02	ug/L
	Benzene	46.1	ug/L
	Ethylbenzene	6.97	ug/L
	Isopropylbenzene (Cumene)	3.51	ug/L
	Naphthalene	36.2	ug/L
	n-Propylbenzene	6.74	ug/L
	o-Xylene	5.79	ug/L
	P & M -Xylene	14.8	ug/L
	sec-Butylbenzene	0.640J	ug/L
	tert-Butylbenzene	0.850J	ug/L
	Toluene	3.30	ug/L
	Xylenes (total)	20.6	ug/L

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Detectable Results Summary

Client Sample ID: **10-13-22-MW-4**
Lab Sample ID: 1226365004

	Parameter	Result	Units
Metals by ICP/MS	Lead	6.43	ug/L
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	13.6	ug/L
	2-Methylnaphthalene	7.93	ug/L
	Acenaphthene	1.89	ug/L
	Anthracene	0.115J	ug/L
	Fluoranthene	0.120J	ug/L
	Fluorene	1.10	ug/L
	Naphthalene	27.7	ug/L
	Phenanthrene	0.300J	ug/L
	Pyrene	0.0913J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	53.7	mg/L
	Residual Range Organics	4.69	mg/L
Volatile Fuels	Gasoline Range Organics	0.517	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	11.6	ug/L
	1,2-Dichloroethane	0.850	ug/L
	1,3,5-Trimethylbenzene	98.6	ug/L
	2-Butanone (MEK)	15.0	ug/L
	2-Hexanone	3.42J	ug/L
	4-Isopropyltoluene	4.65	ug/L
	Benzene	24.4	ug/L
	Ethylbenzene	1.71	ug/L
	Naphthalene	162	ug/L
	n-Propylbenzene	0.570J	ug/L
	o-Xylene	6.70	ug/L
	P & M -Xylene	12.1	ug/L
	tert-Butylbenzene	0.700J	ug/L
	Toluene	1.76	ug/L
	Xylenes (total)	18.8	ug/L

SGS North America Inc.
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Detectable Results Summary

Client Sample ID: **10-14-22-MW-5**
Lab Sample ID: 1226365005

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.00868J	ug/L
	2-Methylnaphthalene	0.00849J	ug/L
	Acenaphthene	0.00824J	ug/L
	Fluoranthene	0.00985J	ug/L
	Fluorene	0.00681J	ug/L
	Naphthalene	0.0233J	ug/L
	Phenanthrene	0.0166J	ug/L
	Pyrene	0.00949J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.313J	mg/L
	Residual Range Organics	0.349J	mg/L
Volatile Fuels	Gasoline Range Organics	8.92	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	9.20J	ug/L
	1,2-Dichloroethane	51.0	ug/L
	Benzene	5220	ug/L
	Isopropylbenzene (Cumene)	8.60J	ug/L
	n-Propylbenzene	6.60J	ug/L
	P & M -Xylene	92.2	ug/L
	Xylenes (total)	92.2	ug/L

Client Sample ID: **10-13-22-MW-6**
Lab Sample ID: 1226365006

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.0268	ug/L
	2-Methylnaphthalene	0.0117J	ug/L
	Acenaphthene	1.32	ug/L
	Acenaphthylene	0.0127J	ug/L
	Anthracene	0.0118J	ug/L
	Fluoranthene	0.0165	ug/L
	Fluorene	0.614	ug/L
	Naphthalene	0.241	ug/L
	Phenanthrene	0.0736	ug/L
	Pyrene	0.00868J	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.207J	mg/L
	Residual Range Organics	0.220J	mg/L
Volatile GC/MS	Naphthalene	1.15	ug/L

Client Sample ID: **10-13-22-MW-10R**
Lab Sample ID: 1226365007

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	2-Methylnaphthalene	0.00435J	ug/L
	Benzo(a)Anthracene	0.00558J	ug/L
	Benzo[b]Fluoranthene	0.0152	ug/L
	Benzo[k]fluoranthene	0.00590J	ug/L
	Chrysene	0.00425J	ug/L
	Fluoranthene	0.0107J	ug/L
	Naphthalene	0.00917J	ug/L
	Pyrene	0.00938J	ug/L

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Detectable Results Summary

Client Sample ID: **10-14-22-MW-11**
Lab Sample ID: 1226365008

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.00438J	ug/L
	2-Methylnaphthalene	0.00409J	ug/L
	Fluoranthene	0.00484J	ug/L
Semivolatile Organic Fuels	Residual Range Organics	0.274J	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	0.340J	ug/L
	Naphthalene	1.07	ug/L

Client Sample ID: **10-13-22-MW-14**
Lab Sample ID: 1226365009

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.00612J	ug/L
	2-Methylnaphthalene	0.00492J	ug/L
	Benzo[b]Fluoranthene	0.00474J	ug/L
	Benzo[k]fluoranthene	0.00440J	ug/L
	Naphthalene	0.0120J	ug/L
Volatile GC/MS	1,2-Dichloroethane	1.83	ug/L
	Benzene	0.950	ug/L

Client Sample ID: **10-14-22-MW-15**
Lab Sample ID: 1226365010

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.908	ug/L
	2-Methylnaphthalene	0.0133	ug/L
	Acenaphthene	6.08	ug/L
	Acenaphthylene	0.00613J	ug/L
	Fluoranthene	0.00497J	ug/L
	Fluorene	0.141	ug/L
	Naphthalene	1.89	ug/L
	Phenanthrene	0.0232J	ug/L
Volatile GC/MS	1,2-Dichloroethane	1.19	ug/L
	Benzene	0.230J	ug/L
	Ethylbenzene	0.350J	ug/L
	Naphthalene	3.28	ug/L

Client Sample ID: **10-13-22-RB-1**
Lab Sample ID: 1226365011

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	0.00654J	ug/L
	2-Methylnaphthalene	0.00859J	ug/L
	Naphthalene	0.0235J	ug/L
	Phenanthrene	0.0140J	ug/L
Volatile GC/MS	Toluene	0.550J	ug/L

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Detectable Results Summary

Client Sample ID: **10-13-22-FD-1**
Lab Sample ID: 1226365012

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	5.70	ug/L
	2-Methylnaphthalene	3.98	ug/L
	Acenaphthene	7.01	ug/L
	Acenaphthylene	0.0560	ug/L
	Anthracene	0.0652	ug/L
	Fluoranthene	0.128	ug/L
	Fluorene	2.55	ug/L
	Naphthalene	44.8	ug/L
	Phenanthrene	1.68	ug/L
	Pyrene	0.0622	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	1.47	mg/L
	Residual Range Organics	0.352J	mg/L
Volatile Fuels	Gasoline Range Organics	0.108	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	22.3	ug/L
	1,3,5-Trimethylbenzene	5.86	ug/L
	4-Isopropyltoluene	2.02	ug/L
	Benzene	0.830	ug/L
	Ethylbenzene	2.01	ug/L
	Isopropylbenzene (Cumene)	2.26	ug/L
	Naphthalene	101	ug/L
	n-Propylbenzene	2.81	ug/L
	o-Xylene	0.900J	ug/L
	P & M -Xylene	5.58	ug/L
	sec-Butylbenzene	1.77	ug/L
	Toluene	0.450J	ug/L
	Xylenes (total)	6.48	ug/L

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Results of **10-13-22-MW-1**

Client Sample ID: **10-13-22-MW-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365001
Lab Project ID: 1226365

Collection Date: 10/13/22 15:05
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	5.94		1.00	0.310	ug/L	5		10/29/22 00:28

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 00:28
Container ID: 1226365001-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-MW-1**

Client Sample ID: **10-13-22-MW-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365001
Lab Project ID: 1226365

Collection Date: 10/13/22 15:05
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	6.51		0.258	0.0763	ug/L	20		11/08/22 22:22
2-Methylnaphthalene	4.49		0.258	0.0763	ug/L	20		11/08/22 22:22
Acenaphthene	7.76		0.258	0.0763	ug/L	20		11/08/22 22:22
Acenaphthylene	0.0631		0.0129	0.00381	ug/L	1		11/01/22 18:52
Anthracene	0.0753		0.0129	0.00381	ug/L	1		11/01/22 18:52
Benzo(a)Anthracene	0.00409	J	0.0129	0.00381	ug/L	1		11/01/22 18:52
Benzo[a]pyrene	0.00258	U	0.00515	0.00155	ug/L	1		11/01/22 18:52
Benzo[b]Fluoranthene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 18:52
Benzo[g,h,i]perylene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 18:52
Benzo[k]fluoranthene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 18:52
Chrysene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 18:52
Dibenzo[a,h]anthracene	0.00258	U	0.00515	0.00155	ug/L	1		11/01/22 18:52
Fluoranthene	0.149		0.0129	0.00381	ug/L	1		11/01/22 18:52
Fluorene	2.95		0.258	0.0763	ug/L	20		11/08/22 22:22
Indeno[1,2,3-c,d] pyrene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 18:52
Naphthalene	48.7		0.515	0.161	ug/L	20		11/08/22 22:22
Phenanthrene	1.93		0.0258	0.00799	ug/L	1		11/01/22 18:52
Pyrene	0.0738		0.0129	0.00381	ug/L	1		11/01/22 18:52
Surrogates								
2-Methylnaphthalene-d10 (surr)	67.1		38-100		%	1		11/01/22 18:52
Fluoranthene-d10 (surr)	71.7		30-111		%	1		11/01/22 18:52

Batch Information

Analytical Batch: XMS13433
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/01/22 18:52
Container ID: 1226365001-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS13442
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/08/22 22:22
Container ID: 1226365001-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-1**

Client Sample ID: **10-13-22-MW-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365001
Lab Project ID: 1226365

Collection Date: 10/13/22 15:05
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	1.41		0.566	0.189	mg/L	1		10/27/22 16:31
Surrogates								
5a Androstane (surr)	83.6		50-150		%	1		10/27/22 16:31

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 16:31
Container ID: 1226365001-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.380	J	0.472	0.189	mg/L	1		10/27/22 16:31
Surrogates								
n-Triacontane-d62 (surr)	78.5		50-150		%	1		10/27/22 16:31

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 16:31
Container ID: 1226365001-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-1**

Client Sample ID: **10-13-22-MW-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365001
Lab Project ID: 1226365

Collection Date: 10/13/22 15:05
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.112		0.100	0.0450	mg/L	1		10/19/22 18:07
Surrogates								
4-Bromofluorobenzene (surr)	99.3		50-150		%	1		10/19/22 18:07

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 18:07
Container ID: 1226365001-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **10-13-22-MW-1**

Client Sample ID: **10-13-22-MW-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365001
Lab Project ID: 1226365

Collection Date: 10/13/22 15:05
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:39
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:39
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 18:39
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,2,4-Trimethylbenzene	22.8		1.00	0.310	ug/L	1		10/27/22 18:39
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:39
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 18:39
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		10/27/22 18:39
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,3,5-Trimethylbenzene	6.09		1.00	0.310	ug/L	1		10/27/22 18:39
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:39
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:39
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:39
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:39
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
4-Isopropyltoluene	2.08		1.00	0.310	ug/L	1		10/27/22 18:39
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:39
Benzene	0.830		0.400	0.120	ug/L	1		10/27/22 18:39
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:39
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 18:39
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:39
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:39
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-MW-1**

Client Sample ID: **10-13-22-MW-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365001
Lab Project ID: 1226365

Collection Date: 10/13/22 15:05
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Chloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:39
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:39
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Ethylbenzene	2.02		1.00	0.310	ug/L	1		10/27/22 18:39
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:39
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Isopropylbenzene (Cumene)	2.28		1.00	0.310	ug/L	1		10/27/22 18:39
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:39
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:39
Naphthalene	99.9		1.00	0.310	ug/L	1		10/27/22 18:39
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
n-Propylbenzene	2.88		1.00	0.310	ug/L	1		10/27/22 18:39
o-Xylene	0.890	J	1.00	0.310	ug/L	1		10/27/22 18:39
P & M -Xylene	5.52		2.00	0.620	ug/L	1		10/27/22 18:39
sec-Butylbenzene	1.84		1.00	0.310	ug/L	1		10/27/22 18:39
Styrene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Toluene	0.450	J	1.00	0.310	ug/L	1		10/27/22 18:39
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:39
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:39
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/27/22 18:39
Xylenes (total)	6.41		3.00	1.00	ug/L	1		10/27/22 18:39
Surrogates								
1,2-Dichloroethane-D4 (surr)	94.7		81-118		%	1		10/27/22 18:39
4-Bromofluorobenzene (surr)	103		85-114		%	1		10/27/22 18:39
Toluene-d8 (surr)	98.4		89-112		%	1		10/27/22 18:39

Print Date: 11/10/2022 3:17:50PM

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Results of **10-13-22-MW-1**

Client Sample ID: **10-13-22-MW-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365001
Lab Project ID: 1226365

Collection Date: 10/13/22 15:05
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 18:39
Container ID: 1226365001-D

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **10-13-22-MW-2**

Client Sample ID: **10-13-22-MW-2**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365002
Lab Project ID: 1226365

Collection Date: 10/13/22 14:20
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	6.13		1.00	0.310	ug/L	5		10/29/22 00:39

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 00:39
Container ID: 1226365002-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Results of **10-13-22-MW-2**

Client Sample ID: **10-13-22-MW-2**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365002
Lab Project ID: 1226365

Collection Date: 10/13/22 14:20
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
2-Methylnaphthalene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Acenaphthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Acenaphthylene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Anthracene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Benzo(a)Anthracene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Benzo[a]pyrene	0.00252	U	0.00505	0.00152	ug/L	1		11/01/22 19:55
Benzo[b]Fluoranthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Benzo[g,h,i]perylene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Benzo[k]fluoranthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Chrysene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Dibenzo[a,h]anthracene	0.00252	U	0.00505	0.00152	ug/L	1		11/01/22 19:55
Fluoranthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Fluorene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Indeno[1,2,3-c,d] pyrene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Naphthalene	0.0259		0.0253	0.00788	ug/L	1		11/01/22 19:55
Phenanthrene	0.0127	U	0.0253	0.00783	ug/L	1		11/01/22 19:55
Pyrene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 19:55
Surrogates								
2-Methylnaphthalene-d10 (surr)	55.2		38-100		%	1		11/01/22 19:55
Fluoranthene-d10 (surr)	65.7		30-111		%	1		11/01/22 19:55

Batch Information

Analytical Batch: XMS13433
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/01/22 19:55
Container ID: 1226365002-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 990 mL
Prep Extract Vol: 1 mL

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-MW-2**

Client Sample ID: **10-13-22-MW-2**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365002
Lab Project ID: 1226365

Collection Date: 10/13/22 14:20
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	2.26		0.588	0.196	mg/L	1		10/27/22 16:41
Surrogates								
5a Androstane (surr)	91.9		50-150		%	1		10/27/22 16:41

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 16:41
Container ID: 1226365002-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	1.03		0.490	0.196	mg/L	1		10/27/22 16:41
Surrogates								
n-Triacontane-d62 (surr)	85.9		50-150		%	1		10/27/22 16:41

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 16:41
Container ID: 1226365002-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-2**

Client Sample ID: **10-13-22-MW-2**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365002
Lab Project ID: 1226365

Collection Date: 10/13/22 14:20
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		10/19/22 18:26
Surrogates								
4-Bromofluorobenzene (surr)	82.3		50-150		%	1		10/19/22 18:26

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 18:26
Container ID: 1226365002-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-13-22-MW-2**

Client Sample ID: **10-13-22-MW-2**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365002
Lab Project ID: 1226365

Collection Date: 10/13/22 14:20
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:54
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:54
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 18:54
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:54
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 18:54
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		10/27/22 18:54
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:54
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:54
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:54
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:54
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:54
Benzene	0.200	U	0.400	0.120	ug/L	1		10/27/22 18:54
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:54
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 18:54
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:54
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:54
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-MW-2**

Client Sample ID: **10-13-22-MW-2**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365002
Lab Project ID: 1226365

Collection Date: 10/13/22 14:20
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Chloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:54
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 18:54
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:54
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:54
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:54
Naphthalene	0.380	J	1.00	0.310	ug/L	1		10/27/22 18:54
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/27/22 18:54
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Styrene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Toluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 18:54
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/27/22 18:54
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/27/22 18:54
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/27/22 18:54
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		10/27/22 18:54
4-Bromofluorobenzene (surr)	98.7		85-114		%	1		10/27/22 18:54
Toluene-d8 (surr)	97.2		89-112		%	1		10/27/22 18:54

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-MW-2**

Client Sample ID: **10-13-22-MW-2**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365002
Lab Project ID: 1226365

Collection Date: 10/13/22 14:20
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 18:54
Container ID: 1226365002-D

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **10-13-22-MW-3**

Client Sample ID: **10-13-22-MW-3**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365003
Lab Project ID: 1226365

Collection Date: 10/13/22 17:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	2.45		1.00	0.310	ug/L	5		10/29/22 00:42

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 00:42
Container ID: 1226365003-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Results of **10-13-22-MW-3**

Client Sample ID: **10-13-22-MW-3**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365003
Lab Project ID: 1226365

Collection Date: 10/13/22 17:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	1.98		0.0126	0.00374	ug/L	1		11/01/22 20:15
2-Methylnaphthalene	0.465		0.0126	0.00374	ug/L	1		11/01/22 20:15
Acenaphthene	2.04		0.0126	0.00374	ug/L	1		11/01/22 20:15
Acenaphthylene	0.0337		0.0126	0.00374	ug/L	1		11/01/22 20:15
Anthracene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 20:15
Benzo(a)Anthracene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 20:15
Benzo[a]pyrene	0.00252	U	0.00505	0.00152	ug/L	1		11/01/22 20:15
Benzo[b]Fluoranthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 20:15
Benzo[g,h,i]perylene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 20:15
Benzo[k]fluoranthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 20:15
Chrysene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 20:15
Dibenzo[a,h]anthracene	0.00252	U	0.00505	0.00152	ug/L	1		11/01/22 20:15
Fluoranthene	0.0672		0.0126	0.00374	ug/L	1		11/01/22 20:15
Fluorene	0.653		0.0126	0.00374	ug/L	1		11/01/22 20:15
Indeno[1,2,3-c,d] pyrene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 20:15
Naphthalene	17.4		0.253	0.0788	ug/L	10		11/08/22 22:43
Phenanthrene	0.290		0.0253	0.00783	ug/L	1		11/01/22 20:15
Pyrene	0.0451		0.0126	0.00374	ug/L	1		11/01/22 20:15
Surrogates								
2-Methylnaphthalene-d10 (surr)	56.5		38-100		%	1		11/01/22 20:15
Fluoranthene-d10 (surr)	64.1		30-111		%	1		11/01/22 20:15

Batch Information

Analytical Batch: XMS13433
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/01/22 20:15
Container ID: 1226365003-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 990 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS13442
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/08/22 22:43
Container ID: 1226365003-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 990 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-3**

Client Sample ID: **10-13-22-MW-3**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365003
Lab Project ID: 1226365

Collection Date: 10/13/22 17:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	6.90		0.588	0.196	mg/L	1		10/27/22 16:51
Surrogates								
5a Androstane (surr)	88.6		50-150		%	1		10/27/22 16:51

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 16:51
Container ID: 1226365003-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	1.36		0.490	0.196	mg/L	1		10/27/22 16:51
Surrogates								
n-Triacontane-d62 (surr)	83.6		50-150		%	1		10/27/22 16:51

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 16:51
Container ID: 1226365003-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-3**

Client Sample ID: **10-13-22-MW-3**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365003
Lab Project ID: 1226365

Collection Date: 10/13/22 17:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.423		0.100	0.0450	mg/L	1		10/19/22 18:44
Surrogates								
4-Bromofluorobenzene (surr)	103		50-150		%	1		10/19/22 18:44

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 18:44
Container ID: 1226365003-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **10-13-22-MW-3**

Client Sample ID: **10-13-22-MW-3**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365003
Lab Project ID: 1226365

Collection Date: 10/13/22 17:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:09
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:09
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 19:09
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,2,4-Trimethylbenzene	29.5		1.00	0.310	ug/L	1		10/27/22 19:09
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:09
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 19:09
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,2-Dichloroethane	0.390	J	0.500	0.200	ug/L	1		10/27/22 19:09
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,3,5-Trimethylbenzene	2.18		1.00	0.310	ug/L	1		10/27/22 19:09
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:09
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:09
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
2-Butanone (MEK)	4.03	J	10.0	3.10	ug/L	1		10/27/22 19:09
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:09
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
4-Isopropyltoluene	2.02		1.00	0.310	ug/L	1		10/27/22 19:09
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:09
Benzene	46.1		0.400	0.120	ug/L	1		10/27/22 19:09
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:09
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 19:09
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:09
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:09
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09

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J flagging is activated

Results of **10-13-22-MW-3**

Client Sample ID: **10-13-22-MW-3**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365003
Lab Project ID: 1226365

Collection Date: 10/13/22 17:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Chloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:09
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:09
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Ethylbenzene	6.97		1.00	0.310	ug/L	1		10/27/22 19:09
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:09
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Isopropylbenzene (Cumene)	3.51		1.00	0.310	ug/L	1		10/27/22 19:09
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:09
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:09
Naphthalene	36.2		1.00	0.310	ug/L	1		10/27/22 19:09
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
n-Propylbenzene	6.74		1.00	0.310	ug/L	1		10/27/22 19:09
o-Xylene	5.79		1.00	0.310	ug/L	1		10/27/22 19:09
P & M -Xylene	14.8		2.00	0.620	ug/L	1		10/27/22 19:09
sec-Butylbenzene	0.640	J	1.00	0.310	ug/L	1		10/27/22 19:09
Styrene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
tert-Butylbenzene	0.850	J	1.00	0.310	ug/L	1		10/27/22 19:09
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Toluene	3.30		1.00	0.310	ug/L	1		10/27/22 19:09
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:09
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:09
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/27/22 19:09
Xylenes (total)	20.6		3.00	1.00	ug/L	1		10/27/22 19:09
Surrogates								
1,2-Dichloroethane-D4 (surr)	90.4		81-118		%	1		10/27/22 19:09
4-Bromofluorobenzene (surr)	102		85-114		%	1		10/27/22 19:09
Toluene-d8 (surr)	98.9		89-112		%	1		10/27/22 19:09

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Results of **10-13-22-MW-3**

Client Sample ID: **10-13-22-MW-3**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365003
Lab Project ID: 1226365

Collection Date: 10/13/22 17:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 19:09
Container ID: 1226365003-D

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-13-22-MW-4**

Client Sample ID: **10-13-22-MW-4**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365004
Lab Project ID: 1226365

Collection Date: 10/13/22 16:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	6.43		1.00	0.310	ug/L	5		10/29/22 00:45

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 00:45
Container ID: 1226365004-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

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

Results of **10-13-22-MW-4**

Client Sample ID: **10-13-22-MW-4**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365004
Lab Project ID: 1226365

Collection Date: 10/13/22 16:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	13.6		0.253	0.0747	ug/L	20		11/09/22 03:10
2-Methylnaphthalene	7.93		0.253	0.0747	ug/L	20		11/09/22 03:10
Acenaphthene	1.89		0.253	0.0747	ug/L	20		11/09/22 03:10
Acenaphthylene	0.127 U		0.253	0.0747	ug/L	20		11/09/22 03:10
Anthracene	0.115 J		0.253	0.0747	ug/L	20		11/09/22 03:10
Benzo(a)Anthracene	0.127 U		0.253	0.0747	ug/L	20		11/09/22 03:10
Benzo[a]pyrene	0.0505 U		0.101	0.0303	ug/L	20		11/09/22 03:10
Benzo[b]Fluoranthene	0.127 U		0.253	0.0747	ug/L	20		11/09/22 03:10
Benzo[g,h,i]perylene	0.127 U		0.253	0.0747	ug/L	20		11/09/22 03:10
Benzo[k]fluoranthene	0.127 U		0.253	0.0747	ug/L	20		11/09/22 03:10
Chrysene	0.127 U		0.253	0.0747	ug/L	20		11/09/22 03:10
Dibenzo[a,h]anthracene	0.0505 U		0.101	0.0303	ug/L	20		11/09/22 03:10
Fluoranthene	0.120 J		0.253	0.0747	ug/L	20		11/09/22 03:10
Fluorene	1.10		0.253	0.0747	ug/L	20		11/09/22 03:10
Indeno[1,2,3-c,d] pyrene	0.127 U		0.253	0.0747	ug/L	20		11/09/22 03:10
Naphthalene	27.7		0.505	0.158	ug/L	20		11/09/22 03:10
Phenanthrene	0.300 J		0.505	0.157	ug/L	20		11/09/22 03:10
Pyrene	0.0913 J		0.253	0.0747	ug/L	20		11/09/22 03:10
Surrogates								
2-Methylnaphthalene-d10 (surr)	711	*	38-100		%	20		11/09/22 03:10
Fluoranthene-d10 (surr)	29	*	30-111		%	20		11/09/22 03:10

Batch Information

Analytical Batch: XMS13442
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/09/22 03:10
Container ID: 1226365004-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 990 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-4**

Client Sample ID: **10-13-22-MW-4**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365004
Lab Project ID: 1226365

Collection Date: 10/13/22 16:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	53.7		0.588	0.196	mg/L	1		10/27/22 17:01
Surrogates								
5a Androstane (surr)	95		50-150		%	1		10/27/22 17:01

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 17:01
Container ID: 1226365004-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	4.69		0.490	0.196	mg/L	1		10/27/22 17:01
Surrogates								
n-Triacontane-d62 (surr)	81.6		50-150		%	1		10/27/22 17:01

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 17:01
Container ID: 1226365004-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-4**

Client Sample ID: **10-13-22-MW-4**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365004
Lab Project ID: 1226365

Collection Date: 10/13/22 16:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.517		0.100	0.0450	mg/L	1		10/19/22 19:02
Surrogates								
4-Bromofluorobenzene (surr)	82.5		50-150		%	1		10/19/22 19:02

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 19:02
Container ID: 1226365004-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-13-22-MW-4**

Client Sample ID: **10-13-22-MW-4**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365004
Lab Project ID: 1226365

Collection Date: 10/13/22 16:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:24
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:24
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 19:24
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,2,4-Trimethylbenzene	11.6		1.00	0.310	ug/L	1		10/27/22 19:24
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:24
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 19:24
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,2-Dichloroethane	0.850		0.500	0.200	ug/L	1		10/27/22 19:24
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,3,5-Trimethylbenzene	98.6		1.00	0.310	ug/L	1		10/27/22 19:24
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:24
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:24
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
2-Butanone (MEK)	15.0		10.0	3.10	ug/L	1		10/27/22 19:24
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
2-Hexanone	3.42	J	10.0	3.10	ug/L	1		10/27/22 19:24
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
4-Isopropyltoluene	4.65		1.00	0.310	ug/L	1		10/27/22 19:24
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:24
Benzene	24.4		0.400	0.120	ug/L	1		10/27/22 19:24
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:24
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 19:24
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:24
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:24
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:24

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Results of **10-13-22-MW-4**

Client Sample ID: **10-13-22-MW-4**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365004
Lab Project ID: 1226365

Collection Date: 10/13/22 16:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Chloromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		10/27/22 19:24
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		10/27/22 19:24
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Ethylbenzene	1.71		1.00	0.310	ug/L	1		10/27/22 19:24
Freon-113	5.00 U		10.0	3.10	ug/L	1		10/27/22 19:24
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		10/27/22 19:24
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		10/27/22 19:24
Naphthalene	162		1.00	0.310	ug/L	1		10/27/22 19:24
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
n-Propylbenzene	0.570 J		1.00	0.310	ug/L	1		10/27/22 19:24
o-Xylene	6.70		1.00	0.310	ug/L	1		10/27/22 19:24
P & M -Xylene	12.1		2.00	0.620	ug/L	1		10/27/22 19:24
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Styrene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
tert-Butylbenzene	0.700 J		1.00	0.310	ug/L	1		10/27/22 19:24
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Toluene	1.76		1.00	0.310	ug/L	1		10/27/22 19:24
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:24
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		10/27/22 19:24
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		10/27/22 19:24
Xylenes (total)	18.8		3.00	1.00	ug/L	1		10/27/22 19:24
Surrogates								
1,2-Dichloroethane-D4 (surr)	88.9		81-118		%	1		10/27/22 19:24
4-Bromofluorobenzene (surr)	117	*	85-114		%	1		10/27/22 19:24
Toluene-d8 (surr)	97.9		89-112		%	1		10/27/22 19:24

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-MW-4**

Client Sample ID: **10-13-22-MW-4**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365004
Lab Project ID: 1226365

Collection Date: 10/13/22 16:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 19:24
Container ID: 1226365004-D

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **10-14-22-MW-5**

Client Sample ID: **10-14-22-MW-5**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365005
Lab Project ID: 1226365

Collection Date: 10/14/22 10:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.500	U	1.00	0.310	ug/L	5		10/29/22 00:50

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 00:50
Container ID: 1226365005-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Results of **10-14-22-MW-5**

Client Sample ID: **10-14-22-MW-5**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365005
Lab Project ID: 1226365

Collection Date: 10/14/22 10:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.00868	J	0.0128	0.00379	ug/L	1		10/26/22 00:17
2-Methylnaphthalene	0.00849	J	0.0128	0.00379	ug/L	1		10/26/22 00:17
Acenaphthene	0.00824	J	0.0128	0.00379	ug/L	1		10/26/22 00:17
Acenaphthylene	0.00640	U	0.0128	0.00379	ug/L	1		10/26/22 00:17
Anthracene	0.00640	U	0.0128	0.00379	ug/L	1		10/26/22 00:17
Benzo(a)Anthracene	0.00640	U	0.0128	0.00379	ug/L	1		10/26/22 00:17
Benzo[a]pyrene	0.00257	U	0.00513	0.00154	ug/L	1		10/26/22 00:17
Benzo[b]Fluoranthene	0.00640	U	0.0128	0.00379	ug/L	1		10/26/22 00:17
Benzo[g,h,i]perylene	0.00640	U	0.0128	0.00379	ug/L	1		10/26/22 00:17
Benzo[k]fluoranthene	0.00640	U	0.0128	0.00379	ug/L	1		10/26/22 00:17
Chrysene	0.00640	U	0.0128	0.00379	ug/L	1		10/26/22 00:17
Dibenzo[a,h]anthracene	0.00257	U	0.00513	0.00154	ug/L	1		10/26/22 00:17
Fluoranthene	0.00985	J	0.0128	0.00379	ug/L	1		10/26/22 00:17
Fluorene	0.00681	J	0.0128	0.00379	ug/L	1		10/26/22 00:17
Indeno[1,2,3-c,d] pyrene	0.00640	U	0.0128	0.00379	ug/L	1		10/26/22 00:17
Naphthalene	0.0233	J	0.0256	0.00800	ug/L	1		10/26/22 00:17
Phenanthrene	0.0166	J	0.0256	0.00795	ug/L	1		10/26/22 00:17
Pyrene	0.00949	J	0.0128	0.00379	ug/L	1		10/26/22 00:17
Surrogates								
2-Methylnaphthalene-d10 (surr)	60		42-86		%	1		10/26/22 00:17
Fluoranthene-d10 (surr)	79		50-97		%	1		10/26/22 00:17

Batch Information

Analytical Batch: XMS13420
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 10/26/22 00:17
Container ID: 1226365005-I

Prep Batch: XXX47216
Prep Method: SW3535A
Prep Date/Time: 10/21/22 14:41
Prep Initial Wt./Vol.: 975 mL
Prep Extract Vol: 1 mL

Print Date: 11/10/2022 3:17:50PM

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Results of **10-14-22-MW-5**

Client Sample ID: **10-14-22-MW-5**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365005
Lab Project ID: 1226365

Collection Date: 10/14/22 10:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.313	J	0.577	0.192	mg/L	1		10/27/22 17:11
Surrogates								
5a Androstane (surr)	83.4		50-150		%	1		10/27/22 17:11

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 17:11
Container ID: 1226365005-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.349	J	0.481	0.192	mg/L	1		10/27/22 17:11
Surrogates								
n-Triacontane-d62 (surr)	79.9		50-150		%	1		10/27/22 17:11

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 17:11
Container ID: 1226365005-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **10-14-22-MW-5**

Client Sample ID: **10-14-22-MW-5**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365005
Lab Project ID: 1226365

Collection Date: 10/14/22 10:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	8.92		1.00	0.450	mg/L	10		10/21/22 19:20
Surrogates								
4-Bromofluorobenzene (surr)	83		50-150		%	10		10/21/22 19:20

Batch Information

Analytical Batch: VFC16307
Analytical Method: AK101
Analyst: JY
Analytical Date/Time: 10/21/22 19:20
Container ID: 1226365005-B

Prep Batch: VXX39384
Prep Method: SW5030B
Prep Date/Time: 10/21/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **10-14-22-MW-5**

Client Sample ID: **10-14-22-MW-5**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365005
Lab Project ID: 1226365

Collection Date: 10/14/22 10:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	5.00	U	10.0	3.00	ug/L	20		10/28/22 04:58
1,1,1-Trichloroethane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,1,2,2-Tetrachloroethane	5.00	U	10.0	3.00	ug/L	20		10/28/22 04:58
1,1,2-Trichloroethane	4.00	U	8.00	2.40	ug/L	20		10/28/22 04:58
1,1-Dichloroethane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,1-Dichloroethene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,1-Dichloropropene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,2,3-Trichlorobenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,2,3-Trichloropropane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,2,4-Trichlorobenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,2,4-Trimethylbenzene	9.20	J	20.0	6.20	ug/L	20		10/28/22 04:58
1,2-Dibromo-3-chloropropane	100	U	200	62.0	ug/L	20		10/28/22 04:58
1,2-Dibromoethane	0.750	U	1.50	0.360	ug/L	20		10/28/22 04:58
1,2-Dichlorobenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,2-Dichloroethane	51.0		10.0	4.00	ug/L	20		10/28/22 04:58
1,2-Dichloropropane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,3,5-Trimethylbenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,3-Dichlorobenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
1,3-Dichloropropane	5.00	U	10.0	3.00	ug/L	20		10/28/22 04:58
1,4-Dichlorobenzene	5.00	U	10.0	3.00	ug/L	20		10/28/22 04:58
2,2-Dichloropropane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
2-Butanone (MEK)	100	U	200	62.0	ug/L	20		10/28/22 04:58
2-Chlorotoluene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
2-Hexanone	100	U	200	62.0	ug/L	20		10/28/22 04:58
4-Chlorotoluene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
4-Isopropyltoluene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
4-Methyl-2-pentanone (MIBK)	100	U	200	62.0	ug/L	20		10/28/22 04:58
Benzene	5220		20.0	6.00	ug/L	50		10/28/22 21:12
Bromobenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Bromochloromethane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Bromodichloromethane	5.00	U	10.0	3.00	ug/L	20		10/28/22 04:58
Bromoform	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Bromomethane	60.0	U	120	60.0	ug/L	20		10/28/22 04:58
Carbon disulfide	100	U	200	62.0	ug/L	20		10/28/22 04:58
Carbon tetrachloride	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Chlorobenzene	5.00	U	10.0	3.00	ug/L	20		10/28/22 04:58
Chloroethane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58

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Results of **10-14-22-MW-5**

Client Sample ID: **10-14-22-MW-5**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365005
Lab Project ID: 1226365

Collection Date: 10/14/22 10:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Chloromethane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
cis-1,2-Dichloroethene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
cis-1,3-Dichloropropene	5.00	U	10.0	3.00	ug/L	20		10/28/22 04:58
Dibromochloromethane	5.00	U	10.0	3.00	ug/L	20		10/28/22 04:58
Dibromomethane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Dichlorodifluoromethane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Ethylbenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Freon-113	100	U	200	62.0	ug/L	20		10/28/22 04:58
Hexachlorobutadiene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Isopropylbenzene (Cumene)	8.60	J	20.0	6.20	ug/L	20		10/28/22 04:58
Methylene chloride	100	U	200	62.0	ug/L	20		10/28/22 04:58
Methyl-t-butyl ether	100	U	200	62.0	ug/L	20		10/28/22 04:58
Naphthalene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
n-Butylbenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
n-Propylbenzene	6.60	J	20.0	6.20	ug/L	20		10/28/22 04:58
o-Xylene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
P & M -Xylene	92.2		40.0	12.4	ug/L	20		10/28/22 04:58
sec-Butylbenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Styrene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
tert-Butylbenzene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Tetrachloroethene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Toluene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
trans-1,2-Dichloroethene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
trans-1,3-Dichloropropene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Trichloroethene	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Trichlorofluoromethane	10.0	U	20.0	6.20	ug/L	20		10/28/22 04:58
Vinyl acetate	100	U	200	62.0	ug/L	20		10/28/22 04:58
Vinyl chloride	1.50	U	3.00	1.00	ug/L	20		10/28/22 04:58
Xylenes (total)	92.2		60.0	20.0	ug/L	20		10/28/22 04:58
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		81-118		%	20		10/28/22 04:58
4-Bromofluorobenzene (surr)	106		85-114		%	20		10/28/22 04:58
Toluene-d8 (surr)	99.6		89-112		%	20		10/28/22 04:58

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Results of **10-14-22-MW-5**

Client Sample ID: **10-14-22-MW-5**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365005
Lab Project ID: 1226365

Collection Date: 10/14/22 10:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22106
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/28/22 04:58
Container ID: 1226365005-D

Prep Batch: VXX39403
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS22117
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/28/22 21:12
Container ID: 1226365005-C

Prep Batch: VXX39422
Prep Method: SW5030B
Prep Date/Time: 10/28/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-13-22-MW-6**

Client Sample ID: **10-13-22-MW-6**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365006
Lab Project ID: 1226365

Collection Date: 10/13/22 13:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.500	U	1.00	0.310	ug/L	5		10/29/22 00:53

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 00:53
Container ID: 1226365006-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Results of **10-13-22-MW-6**

Client Sample ID: **10-13-22-MW-6**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365006
Lab Project ID: 1226365

Collection Date: 10/13/22 13:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.0268		0.0129	0.00381	ug/L	1		11/01/22 20:56
2-Methylnaphthalene	0.0117	J	0.0129	0.00381	ug/L	1		11/01/22 20:56
Acenaphthene	1.32		0.0129	0.00381	ug/L	1		11/01/22 20:56
Acenaphthylene	0.0127	J	0.0129	0.00381	ug/L	1		11/01/22 20:56
Anthracene	0.0118	J	0.0129	0.00381	ug/L	1		11/01/22 20:56
Benzo(a)Anthracene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 20:56
Benzo[a]pyrene	0.00258	U	0.00515	0.00155	ug/L	1		11/01/22 20:56
Benzo[b]Fluoranthene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 20:56
Benzo[g,h,i]perylene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 20:56
Benzo[k]fluoranthene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 20:56
Chrysene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 20:56
Dibenzo[a,h]anthracene	0.00258	U	0.00515	0.00155	ug/L	1		11/01/22 20:56
Fluoranthene	0.0165		0.0129	0.00381	ug/L	1		11/01/22 20:56
Fluorene	0.614		0.0129	0.00381	ug/L	1		11/01/22 20:56
Indeno[1,2,3-c,d] pyrene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 20:56
Naphthalene	0.241		0.0258	0.00804	ug/L	1		11/01/22 20:56
Phenanthrene	0.0736		0.0258	0.00799	ug/L	1		11/01/22 20:56
Pyrene	0.00868	J	0.0129	0.00381	ug/L	1		11/01/22 20:56
Surrogates								
2-Methylnaphthalene-d10 (surr)	68.7		38-100		%	1		11/01/22 20:56
Fluoranthene-d10 (surr)	75.9		30-111		%	1		11/01/22 20:56

Batch Information

Analytical Batch: XMS13433
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/01/22 20:56
Container ID: 1226365006-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-6**

Client Sample ID: **10-13-22-MW-6**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365006
Lab Project ID: 1226365

Collection Date: 10/13/22 13:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.207	J	0.588	0.196	mg/L	1		10/27/22 17:21
Surrogates								
5a Androstane (surr)	80.6		50-150		%	1		10/27/22 17:21

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 17:21
Container ID: 1226365006-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.220	J	0.490	0.196	mg/L	1		10/27/22 17:21
Surrogates								
n-Triacontane-d62 (surr)	76.7		50-150		%	1		10/27/22 17:21

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 17:21
Container ID: 1226365006-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-6**

Client Sample ID: **10-13-22-MW-6**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365006
Lab Project ID: 1226365

Collection Date: 10/13/22 13:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		10/19/22 19:39
Surrogates								
4-Bromofluorobenzene (surr)	84.6		50-150		%	1		10/19/22 19:39

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 19:39
Container ID: 1226365006-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **10-13-22-MW-6**

Client Sample ID: **10-13-22-MW-6**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365006
Lab Project ID: 1226365

Collection Date: 10/13/22 13:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:39
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:39
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 19:39
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:39
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 19:39
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		10/27/22 19:39
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:39
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:39
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:39
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:39
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:39
Benzene	0.200	U	0.400	0.120	ug/L	1		10/27/22 19:39
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:39
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 19:39
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:39
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:39
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39

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Results of **10-13-22-MW-6**

Client Sample ID: **10-13-22-MW-6**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365006
Lab Project ID: 1226365

Collection Date: 10/13/22 13:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Chloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:39
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:39
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:39
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:39
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:39
Naphthalene	1.15		1.00	0.310	ug/L	1		10/27/22 19:39
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/27/22 19:39
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Styrene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Toluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:39
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:39
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/27/22 19:39
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/27/22 19:39
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.5		81-118		%	1		10/27/22 19:39
4-Bromofluorobenzene (surr)	102		85-114		%	1		10/27/22 19:39
Toluene-d8 (surr)	96.5		89-112		%	1		10/27/22 19:39

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Results of **10-13-22-MW-6**

Client Sample ID: **10-13-22-MW-6**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365006
Lab Project ID: 1226365

Collection Date: 10/13/22 13:15
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 19:39
Container ID: 1226365006-D

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-13-22-MW-10R**

Client Sample ID: **10-13-22-MW-10R**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365007
Lab Project ID: 1226365

Collection Date: 10/13/22 12:12
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.500	U	1.00	0.310	ug/L	5		10/29/22 01:02

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 01:02
Container ID: 1226365007-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

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Results of **10-13-22-MW-10R**

Client Sample ID: **10-13-22-MW-10R**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365007
Lab Project ID: 1226365

Collection Date: 10/13/22 12:12
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.00650	U	0.0130	0.00385	ug/L	1		11/01/22 21:17
2-Methylnaphthalene	0.00435	J	0.0130	0.00385	ug/L	1		11/01/22 21:17
Acenaphthene	0.00650	U	0.0130	0.00385	ug/L	1		11/01/22 21:17
Acenaphthylene	0.00650	U	0.0130	0.00385	ug/L	1		11/01/22 21:17
Anthracene	0.00650	U	0.0130	0.00385	ug/L	1		11/01/22 21:17
Benzo(a)Anthracene	0.00558	J	0.0130	0.00385	ug/L	1		11/01/22 21:17
Benzo[a]pyrene	0.00261	U	0.00521	0.00156	ug/L	1		11/01/22 21:17
Benzo[b]Fluoranthene	0.0152		0.0130	0.00385	ug/L	1		11/01/22 21:17
Benzo[g,h,i]perylene	0.00650	U	0.0130	0.00385	ug/L	1		11/01/22 21:17
Benzo[k]fluoranthene	0.00590	J	0.0130	0.00385	ug/L	1		11/01/22 21:17
Chrysene	0.00425	J	0.0130	0.00385	ug/L	1		11/01/22 21:17
Dibenzo[a,h]anthracene	0.00261	U	0.00521	0.00156	ug/L	1		11/01/22 21:17
Fluoranthene	0.0107	J	0.0130	0.00385	ug/L	1		11/01/22 21:17
Fluorene	0.00650	U	0.0130	0.00385	ug/L	1		11/01/22 21:17
Indeno[1,2,3-c,d] pyrene	0.00650	U	0.0130	0.00385	ug/L	1		11/01/22 21:17
Naphthalene	0.00917	J	0.0260	0.00813	ug/L	1		11/01/22 21:17
Phenanthrene	0.0130	U	0.0260	0.00807	ug/L	1		11/01/22 21:17
Pyrene	0.00938	J	0.0130	0.00385	ug/L	1		11/01/22 21:17
Surrogates								
2-Methylnaphthalene-d10 (surr)	67.1		38-100		%	1		11/01/22 21:17
Fluoranthene-d10 (surr)	77.6		30-111		%	1		11/01/22 21:17

Batch Information

Analytical Batch: XMS13433
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/01/22 21:17
Container ID: 1226365007-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 960 mL
Prep Extract Vol: 1 mL

Print Date: 11/10/2022 3:17:50PM

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Results of **10-13-22-MW-10R**

Client Sample ID: **10-13-22-MW-10R**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365007
Lab Project ID: 1226365

Collection Date: 10/13/22 12:12
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.288	U	0.577	0.192	mg/L	1		10/27/22 17:31
Surrogates								
5a Androstane (surr)	78.8		50-150		%	1		10/27/22 17:31

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 17:31
Container ID: 1226365007-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.240	U	0.481	0.192	mg/L	1		10/27/22 17:31
Surrogates								
n-Triacontane-d62 (surr)	79.6		50-150		%	1		10/27/22 17:31

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 17:31
Container ID: 1226365007-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-10R**

Client Sample ID: **10-13-22-MW-10R**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365007
Lab Project ID: 1226365

Collection Date: 10/13/22 12:12
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		10/19/22 19:58
Surrogates								
4-Bromofluorobenzene (surr)	81.3		50-150		%	1		10/19/22 19:58

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 19:58
Container ID: 1226365007-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **10-13-22-MW-10R**

Client Sample ID: **10-13-22-MW-10R**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365007
Lab Project ID: 1226365

Collection Date: 10/13/22 12:12
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:54
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:54
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 19:54
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:54
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 19:54
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		10/27/22 19:54
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:54
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:54
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:54
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:54
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:54
Benzene	0.200	U	0.400	0.120	ug/L	1		10/27/22 19:54
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:54
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 19:54
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 19:54
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 19:54
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 19:54

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Results of **10-13-22-MW-10R**

Client Sample ID: **10-13-22-MW-10R**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365007
Lab Project ID: 1226365

Collection Date: 10/13/22 12:12
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Chloromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		10/27/22 19:54
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		10/27/22 19:54
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Freon-113	5.00 U		10.0	3.10	ug/L	1		10/27/22 19:54
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		10/27/22 19:54
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		10/27/22 19:54
Naphthalene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
o-Xylene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		10/27/22 19:54
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Styrene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Toluene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 19:54
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		10/27/22 19:54
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		10/27/22 19:54
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		10/27/22 19:54
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.5		81-118		%	1		10/27/22 19:54
4-Bromofluorobenzene (surr)	100		85-114		%	1		10/27/22 19:54
Toluene-d8 (surr)	96.9		89-112		%	1		10/27/22 19:54

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J flagging is activated

Results of **10-13-22-MW-10R**

Client Sample ID: **10-13-22-MW-10R**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365007
Lab Project ID: 1226365

Collection Date: 10/13/22 12:12
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 19:54
Container ID: 1226365007-D

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-14-22-MW-11**

Client Sample ID: **10-14-22-MW-11**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365008
Lab Project ID: 1226365

Collection Date: 10/14/22 11:50
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.500	U	1.00	0.310	ug/L	5		10/29/22 01:05

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 01:05
Container ID: 1226365008-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Results of **10-14-22-MW-11**

Client Sample ID: **10-14-22-MW-11**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365008
Lab Project ID: 1226365

Collection Date: 10/14/22 11:50
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.00438	J	0.0128	0.00378	ug/L	1		10/26/22 00:37
2-Methylnaphthalene	0.00409	J	0.0128	0.00378	ug/L	1		10/26/22 00:37
Acenaphthene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Acenaphthylene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Anthracene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Benzo(a)Anthracene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Benzo[a]pyrene	0.00255	U	0.00510	0.00153	ug/L	1		10/26/22 00:37
Benzo[b]Fluoranthene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Benzo[g,h,i]perylene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Benzo[k]fluoranthene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Chrysene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Dibenzo[a,h]anthracene	0.00255	U	0.00510	0.00153	ug/L	1		10/26/22 00:37
Fluoranthene	0.00484	J	0.0128	0.00378	ug/L	1		10/26/22 00:37
Fluorene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Indeno[1,2,3-c,d] pyrene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Naphthalene	0.0127	U	0.0255	0.00796	ug/L	1		10/26/22 00:37
Phenanthrene	0.0127	U	0.0255	0.00791	ug/L	1		10/26/22 00:37
Pyrene	0.00640	U	0.0128	0.00378	ug/L	1		10/26/22 00:37
Surrogates								
2-Methylnaphthalene-d10 (surr)	66		42-86		%	1		10/26/22 00:37
Fluoranthene-d10 (surr)	79.4		50-97		%	1		10/26/22 00:37

Batch Information

Analytical Batch: XMS13420
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 10/26/22 00:37
Container ID: 1226365008-I

Prep Batch: XXX47216
Prep Method: SW3535A
Prep Date/Time: 10/21/22 14:41
Prep Initial Wt./Vol.: 980 mL
Prep Extract Vol: 1 mL

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-14-22-MW-11**

Client Sample ID: **10-14-22-MW-11**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365008
Lab Project ID: 1226365

Collection Date: 10/14/22 11:50
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.294	U	0.588	0.196	mg/L	1		10/27/22 17:41
Surrogates								
5a Androstane (surr)	86.3		50-150		%	1		10/27/22 17:41

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 17:41
Container ID: 1226365008-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.274	J	0.490	0.196	mg/L	1		10/27/22 17:41
Surrogates								
n-Triacontane-d62 (surr)	83.6		50-150		%	1		10/27/22 17:41

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 17:41
Container ID: 1226365008-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-14-22-MW-11**

Client Sample ID: **10-14-22-MW-11**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365008
Lab Project ID: 1226365

Collection Date: 10/14/22 11:50
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		10/19/22 20:16
Surrogates								
4-Bromofluorobenzene (surr)	79.7		50-150		%	1		10/19/22 20:16

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 20:16
Container ID: 1226365008-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-14-22-MW-11**

Client Sample ID: **10-14-22-MW-11**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365008
Lab Project ID: 1226365

Collection Date: 10/14/22 11:50
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:29
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:29
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/28/22 03:29
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,2,4-Trimethylbenzene	0.340	J	1.00	0.310	ug/L	1		10/28/22 03:29
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:29
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/28/22 03:29
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		10/28/22 03:29
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:29
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:29
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:29
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:29
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:29
Benzene	0.200	U	0.400	0.120	ug/L	1		10/28/22 03:29
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:29
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/28/22 03:29
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:29
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:29
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-14-22-MW-11**

Client Sample ID: **10-14-22-MW-11**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365008
Lab Project ID: 1226365

Collection Date: 10/14/22 11:50
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Chloromethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:29
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:29
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:29
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:29
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:29
Naphthalene	1.07		1.00	0.310	ug/L	1		10/28/22 03:29
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/28/22 03:29
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Styrene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Toluene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:29
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:29
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/28/22 03:29
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/28/22 03:29
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		10/28/22 03:29
4-Bromofluorobenzene (surr)	105		85-114		%	1		10/28/22 03:29
Toluene-d8 (surr)	98.9		89-112		%	1		10/28/22 03:29

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-14-22-MW-11**

Client Sample ID: **10-14-22-MW-11**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365008
Lab Project ID: 1226365

Collection Date: 10/14/22 11:50
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22106
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/28/22 03:29
Container ID: 1226365008-A

Prep Batch: VXX39403
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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

Results of **10-13-22-MW-14**

Client Sample ID: **10-13-22-MW-14**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365009
Lab Project ID: 1226365

Collection Date: 10/13/22 18:45
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.500	U	1.00	0.310	ug/L	5		10/29/22 01:08

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 01:08
Container ID: 1226365009-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-MW-14**

Client Sample ID: **10-13-22-MW-14**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365009
Lab Project ID: 1226365

Collection Date: 10/13/22 18:45
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.00612	J	0.0126	0.00374	ug/L	1		11/01/22 21:37
2-Methylnaphthalene	0.00492	J	0.0126	0.00374	ug/L	1		11/01/22 21:37
Acenaphthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Acenaphthylene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Anthracene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Benzo(a)Anthracene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Benzo[a]pyrene	0.00252	U	0.00505	0.00152	ug/L	1		11/01/22 21:37
Benzo[b]Fluoranthene	0.00474	J	0.0126	0.00374	ug/L	1		11/01/22 21:37
Benzo[g,h,i]perylene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Benzo[k]fluoranthene	0.00440	J	0.0126	0.00374	ug/L	1		11/01/22 21:37
Chrysene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Dibenzo[a,h]anthracene	0.00252	U	0.00505	0.00152	ug/L	1		11/01/22 21:37
Fluoranthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Fluorene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Indeno[1,2,3-c,d] pyrene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Naphthalene	0.0120	J	0.0253	0.00788	ug/L	1		11/01/22 21:37
Phenanthrene	0.0127	U	0.0253	0.00783	ug/L	1		11/01/22 21:37
Pyrene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:37
Surrogates								
2-Methylnaphthalene-d10 (surr)	64.4		38-100		%	1		11/01/22 21:37
Fluoranthene-d10 (surr)	79.2		30-111		%	1		11/01/22 21:37

Batch Information

Analytical Batch: XMS13433
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/01/22 21:37
Container ID: 1226365009-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 990 mL
Prep Extract Vol: 1 mL

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-MW-14**

Client Sample ID: **10-13-22-MW-14**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365009
Lab Project ID: 1226365

Collection Date: 10/13/22 18:45
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.288	U	0.577	0.192	mg/L	1		10/27/22 17:51
Surrogates								
5a Androstane (surr)	84.8		50-150		%	1		10/27/22 17:51

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 17:51
Container ID: 1226365009-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.240	U	0.481	0.192	mg/L	1		10/27/22 17:51
Surrogates								
n-Triacontane-d62 (surr)	82.9		50-150		%	1		10/27/22 17:51

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 17:51
Container ID: 1226365009-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-MW-14**

Client Sample ID: **10-13-22-MW-14**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365009
Lab Project ID: 1226365

Collection Date: 10/13/22 18:45
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		10/19/22 20:35
Surrogates								
4-Bromofluorobenzene (surr)	81.7		50-150		%	1		10/19/22 20:35

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 20:35
Container ID: 1226365009-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-13-22-MW-14**

Client Sample ID: **10-13-22-MW-14**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365009
Lab Project ID: 1226365

Collection Date: 10/13/22 18:45
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:09
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:09
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 20:09
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:09
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 20:09
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,2-Dichloroethane	1.83		0.500	0.200	ug/L	1		10/27/22 20:09
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:09
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:09
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:09
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:09
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:09
Benzene	0.950		0.400	0.120	ug/L	1		10/27/22 20:09
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:09
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 20:09
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:09
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:09
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:09

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J flagging is activated

Results of **10-13-22-MW-14**

Client Sample ID: **10-13-22-MW-14**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365009
Lab Project ID: 1226365

Collection Date: 10/13/22 18:45
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Chloromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		10/27/22 20:09
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		10/27/22 20:09
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Freon-113	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:09
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:09
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:09
Naphthalene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
o-Xylene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		10/27/22 20:09
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Styrene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Toluene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:09
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:09
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		10/27/22 20:09
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		10/27/22 20:09
Surrogates								
1,2-Dichloroethane-D4 (surr)	98.7		81-118		%	1		10/27/22 20:09
4-Bromofluorobenzene (surr)	101		85-114		%	1		10/27/22 20:09
Toluene-d8 (surr)	96.6		89-112		%	1		10/27/22 20:09

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J flagging is activated

Results of **10-13-22-MW-14**

Client Sample ID: **10-13-22-MW-14**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365009
Lab Project ID: 1226365

Collection Date: 10/13/22 18:45
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 20:09
Container ID: 1226365009-D

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-14-22-MW-15**

Client Sample ID: **10-14-22-MW-15**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365010
Lab Project ID: 1226365

Collection Date: 10/14/22 09:30
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.500	U	1.00	0.310	ug/L	5		10/29/22 01:10

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 01:10
Container ID: 1226365010-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Results of **10-14-22-MW-15**

Client Sample ID: **10-14-22-MW-15**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365010
Lab Project ID: 1226365

Collection Date: 10/14/22 09:30
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.908		0.0126	0.00372	ug/L	1		10/26/22 00:58
2-Methylnaphthalene	0.0133		0.0126	0.00372	ug/L	1		10/26/22 00:58
Acenaphthene	6.08		0.126	0.0372	ug/L	10		10/29/22 07:45
Acenaphthylene	0.00613	J	0.0126	0.00372	ug/L	1		10/26/22 00:58
Anthracene	0.00630	U	0.0126	0.00372	ug/L	1		10/26/22 00:58
Benzo(a)Anthracene	0.00630	U	0.0126	0.00372	ug/L	1		10/26/22 00:58
Benzo[a]pyrene	0.00251	U	0.00503	0.00151	ug/L	1		10/26/22 00:58
Benzo[b]Fluoranthene	0.00630	U	0.0126	0.00372	ug/L	1		10/26/22 00:58
Benzo[g,h,i]perylene	0.00630	U	0.0126	0.00372	ug/L	1		10/26/22 00:58
Benzo[k]fluoranthene	0.00630	U	0.0126	0.00372	ug/L	1		10/26/22 00:58
Chrysene	0.00630	U	0.0126	0.00372	ug/L	1		10/26/22 00:58
Dibenzo[a,h]anthracene	0.00251	U	0.00503	0.00151	ug/L	1		10/26/22 00:58
Fluoranthene	0.00497	J	0.0126	0.00372	ug/L	1		10/26/22 00:58
Fluorene	0.141		0.0126	0.00372	ug/L	1		10/26/22 00:58
Indeno[1,2,3-c,d] pyrene	0.00630	U	0.0126	0.00372	ug/L	1		10/26/22 00:58
Naphthalene	1.89		0.0251	0.00784	ug/L	1		10/26/22 00:58
Phenanthrene	0.0232	J	0.0251	0.00779	ug/L	1		10/26/22 00:58
Pyrene	0.00630	U	0.0126	0.00372	ug/L	1		10/26/22 00:58
Surrogates								
2-Methylnaphthalene-d10 (surr)	61.3		42-86		%	1		10/26/22 00:58
Fluoranthene-d10 (surr)	74.8		50-97		%	1		10/26/22 00:58

Batch Information

Analytical Batch: XMS13420
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 10/26/22 00:58
Container ID: 1226365010-I

Prep Batch: XXX47216
Prep Method: SW3535A
Prep Date/Time: 10/21/22 14:41
Prep Initial Wt./Vol.: 995 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS13426
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 10/29/22 07:45
Container ID: 1226365010-I

Prep Batch: XXX47216
Prep Method: SW3535A
Prep Date/Time: 10/21/22 14:41
Prep Initial Wt./Vol.: 995 mL
Prep Extract Vol: 1 mL

Results of **10-14-22-MW-15**

Client Sample ID: **10-14-22-MW-15**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365010
Lab Project ID: 1226365

Collection Date: 10/14/22 09:30
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.288	U	0.577	0.192	mg/L	1		10/27/22 18:01
Surrogates								
5a Androstane (surr)	80.8		50-150		%	1		10/27/22 18:01

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 18:01
Container ID: 1226365010-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.240	U	0.481	0.192	mg/L	1		10/27/22 18:01
Surrogates								
n-Triacontane-d62 (surr)	81		50-150		%	1		10/27/22 18:01

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 18:01
Container ID: 1226365010-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **10-14-22-MW-15**

Client Sample ID: **10-14-22-MW-15**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365010
Lab Project ID: 1226365

Collection Date: 10/14/22 09:30
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		10/19/22 20:54
Surrogates								
4-Bromofluorobenzene (surr)	80		50-150		%	1		10/19/22 20:54

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 20:54
Container ID: 1226365010-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-14-22-MW-15**

Client Sample ID: **10-14-22-MW-15**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365010
Lab Project ID: 1226365

Collection Date: 10/14/22 09:30
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:44
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:44
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/28/22 03:44
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:44
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/28/22 03:44
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,2-Dichloroethane	1.19		0.500	0.200	ug/L	1		10/28/22 03:44
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:44
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:44
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:44
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:44
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:44
Benzene	0.230	J	0.400	0.120	ug/L	1		10/28/22 03:44
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:44
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/28/22 03:44
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:44
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:44
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44

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J flagging is activated

Results of **10-14-22-MW-15**

Client Sample ID: **10-14-22-MW-15**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365010
Lab Project ID: 1226365

Collection Date: 10/14/22 09:30
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Chloromethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:44
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/28/22 03:44
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Ethylbenzene	0.350	J	1.00	0.310	ug/L	1		10/28/22 03:44
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:44
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:44
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:44
Naphthalene	3.28		1.00	0.310	ug/L	1		10/28/22 03:44
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/28/22 03:44
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Styrene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Toluene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/28/22 03:44
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/28/22 03:44
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/28/22 03:44
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/28/22 03:44
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		10/28/22 03:44
4-Bromofluorobenzene (surr)	104		85-114		%	1		10/28/22 03:44
Toluene-d8 (surr)	99.3		89-112		%	1		10/28/22 03:44

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Results of **10-14-22-MW-15**

Client Sample ID: **10-14-22-MW-15**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365010
Lab Project ID: 1226365

Collection Date: 10/14/22 09:30
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22106
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/28/22 03:44
Container ID: 1226365010-D

Prep Batch: VXX39403
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-13-22-RB-1**

Client Sample ID: **10-13-22-RB-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365011
Lab Project ID: 1226365

Collection Date: 10/13/22 18:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.500	U	1.00	0.310	ug/L	5		10/29/22 01:13

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 01:13
Container ID: 1226365011-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Results of **10-13-22-RB-1**

Client Sample ID: **10-13-22-RB-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365011
Lab Project ID: 1226365

Collection Date: 10/13/22 18:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	0.00654	J	0.0126	0.00374	ug/L	1		11/01/22 21:58
2-Methylnaphthalene	0.00859	J	0.0126	0.00374	ug/L	1		11/01/22 21:58
Acenaphthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Acenaphthylene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Anthracene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Benzo(a)Anthracene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Benzo[a]pyrene	0.00252	U	0.00505	0.00152	ug/L	1		11/01/22 21:58
Benzo[b]Fluoranthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Benzo[g,h,i]perylene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Benzo[k]fluoranthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Chrysene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Dibenzo[a,h]anthracene	0.00252	U	0.00505	0.00152	ug/L	1		11/01/22 21:58
Fluoranthene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Fluorene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Indeno[1,2,3-c,d] pyrene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Naphthalene	0.0235	J	0.0253	0.00788	ug/L	1		11/01/22 21:58
Phenanthrene	0.0140	J	0.0253	0.00783	ug/L	1		11/01/22 21:58
Pyrene	0.00630	U	0.0126	0.00374	ug/L	1		11/01/22 21:58
Surrogates								
2-Methylnaphthalene-d10 (surr)	59.3		38-100		%	1		11/01/22 21:58
Fluoranthene-d10 (surr)	77.5		30-111		%	1		11/01/22 21:58

Batch Information

Analytical Batch: XMS13433
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/01/22 21:58
Container ID: 1226365011-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 990 mL
Prep Extract Vol: 1 mL

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Results of **10-13-22-RB-1**

Client Sample ID: **10-13-22-RB-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365011
Lab Project ID: 1226365

Collection Date: 10/13/22 18:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.294	U	0.588	0.196	mg/L	1		10/27/22 18:11
Surrogates								
5a Androstane (surr)	83.4		50-150		%	1		10/27/22 18:11

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 18:11
Container ID: 1226365011-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.245	U	0.490	0.196	mg/L	1		10/27/22 18:11
Surrogates								
n-Triacontane-d62 (surr)	82.4		50-150		%	1		10/27/22 18:11

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 18:11
Container ID: 1226365011-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-RB-1**

Client Sample ID: **10-13-22-RB-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365011
Lab Project ID: 1226365

Collection Date: 10/13/22 18:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		10/19/22 21:12
Surrogates								
4-Bromofluorobenzene (surr)	79.2		50-150		%	1		10/19/22 21:12

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 21:12
Container ID: 1226365011-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-13-22-RB-1**

Client Sample ID: **10-13-22-RB-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365011
Lab Project ID: 1226365

Collection Date: 10/13/22 18:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:24
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:24
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 20:24
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:24
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 20:24
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		10/27/22 20:24
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:24
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:24
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:24
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:24
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:24
Benzene	0.200	U	0.400	0.120	ug/L	1		10/27/22 20:24
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:24
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 20:24
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:24
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:24
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:24

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Results of **10-13-22-RB-1**

Client Sample ID: **10-13-22-RB-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365011
Lab Project ID: 1226365

Collection Date: 10/13/22 18:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Chloromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		10/27/22 20:24
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		10/27/22 20:24
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Freon-113	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:24
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:24
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:24
Naphthalene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
o-Xylene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		10/27/22 20:24
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Styrene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Toluene	0.550 J		1.00	0.310	ug/L	1		10/27/22 20:24
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:24
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:24
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		10/27/22 20:24
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		10/27/22 20:24
Surrogates								
1,2-Dichloroethane-D4 (surr)	94.6		81-118		%	1		10/27/22 20:24
4-Bromofluorobenzene (surr)	102		85-114		%	1		10/27/22 20:24
Toluene-d8 (surr)	96.5		89-112		%	1		10/27/22 20:24

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J flagging is activated

Results of **10-13-22-RB-1**

Client Sample ID: **10-13-22-RB-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365011
Lab Project ID: 1226365

Collection Date: 10/13/22 18:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 20:24
Container ID: 1226365011-D

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **10-13-22-FD-1**

Client Sample ID: **10-13-22-FD-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365012
Lab Project ID: 1226365

Collection Date: 10/13/22 12:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Lead	0.500	U	1.00	0.310	ug/L	5		10/29/22 01:16

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Analyst: HGS
Analytical Date/Time: 10/29/22 01:16
Container ID: 1226365012-K

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/22 11:56
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

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

Results of **10-13-22-FD-1**

Client Sample ID: **10-13-22-FD-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365012
Lab Project ID: 1226365

Collection Date: 10/13/22 12:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	5.70		0.258	0.0763	ug/L	20		11/08/22 23:04
2-Methylnaphthalene	3.98		0.258	0.0763	ug/L	20		11/08/22 23:04
Acenaphthene	7.01		0.258	0.0763	ug/L	20		11/08/22 23:04
Acenaphthylene	0.0560		0.0129	0.00381	ug/L	1		11/01/22 22:18
Anthracene	0.0652		0.0129	0.00381	ug/L	1		11/01/22 22:18
Benzo(a)Anthracene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 22:18
Benzo[a]pyrene	0.00258	U	0.00515	0.00155	ug/L	1		11/01/22 22:18
Benzo[b]Fluoranthene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 22:18
Benzo[g,h,i]perylene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 22:18
Benzo[k]fluoranthene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 22:18
Chrysene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 22:18
Dibenzo[a,h]anthracene	0.00258	U	0.00515	0.00155	ug/L	1		11/01/22 22:18
Fluoranthene	0.128		0.0129	0.00381	ug/L	1		11/01/22 22:18
Fluorene	2.55		0.0129	0.00381	ug/L	1		11/01/22 22:18
Indeno[1,2,3-c,d] pyrene	0.00645	U	0.0129	0.00381	ug/L	1		11/01/22 22:18
Naphthalene	44.8		0.515	0.161	ug/L	20		11/08/22 23:04
Phenanthrene	1.68		0.0258	0.00799	ug/L	1		11/01/22 22:18
Pyrene	0.0622		0.0129	0.00381	ug/L	1		11/01/22 22:18
Surrogates								
2-Methylnaphthalene-d10 (surr)	60.3		38-100		%	1		11/01/22 22:18
Fluoranthene-d10 (surr)	70.2		30-111		%	1		11/01/22 22:18

Batch Information

Analytical Batch: XMS13433
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/01/22 22:18
Container ID: 1226365012-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS13442
Analytical Method: 8270D SIM (PAH)
Analyst: NGG
Analytical Date/Time: 11/08/22 23:04
Container ID: 1226365012-I

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/22 14:12
Prep Initial Wt./Vol.: 970 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-FD-1**

Client Sample ID: **10-13-22-FD-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365012
Lab Project ID: 1226365

Collection Date: 10/13/22 12:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	1.47		0.577	0.192	mg/L	1		10/27/22 18:21
Surrogates								
5a Androstane (surr)	81.9		50-150		%	1		10/27/22 18:21

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Analyst: HMW
Analytical Date/Time: 10/27/22 18:21
Container ID: 1226365012-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.352	J	0.481	0.192	mg/L	1		10/27/22 18:21
Surrogates								
n-Triacontane-d62 (surr)	82.3		50-150		%	1		10/27/22 18:21

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Analyst: HMW
Analytical Date/Time: 10/27/22 18:21
Container ID: 1226365012-G

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/22 16:26
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **10-13-22-FD-1**

Client Sample ID: **10-13-22-FD-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365012
Lab Project ID: 1226365

Collection Date: 10/13/22 12:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.108		0.100	0.0450	mg/L	1		10/19/22 21:31
Surrogates								
4-Bromofluorobenzene (surr)	95.7		50-150		%	1		10/19/22 21:31

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 21:31
Container ID: 1226365012-A

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-FD-1**

Client Sample ID: **10-13-22-FD-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365012
Lab Project ID: 1226365

Collection Date: 10/13/22 12:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:39
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:39
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 20:39
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,2,4-Trimethylbenzene	22.3		1.00	0.310	ug/L	1		10/27/22 20:39
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:39
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 20:39
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		10/27/22 20:39
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,3,5-Trimethylbenzene	5.86		1.00	0.310	ug/L	1		10/27/22 20:39
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:39
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:39
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:39
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:39
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
4-Isopropyltoluene	2.02		1.00	0.310	ug/L	1		10/27/22 20:39
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:39
Benzene	0.830		0.400	0.120	ug/L	1		10/27/22 20:39
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:39
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 20:39
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 20:39
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 20:39
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 20:39

Results of **10-13-22-FD-1**

Client Sample ID: **10-13-22-FD-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365012
Lab Project ID: 1226365

Collection Date: 10/13/22 12:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
Chloromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		10/27/22 20:39
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		10/27/22 20:39
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
Ethylbenzene	2.01		1.00	0.310	ug/L	1		10/27/22 20:39
Freon-113	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:39
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
Isopropylbenzene (Cumene)	2.26		1.00	0.310	ug/L	1		10/27/22 20:39
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:39
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:39
Naphthalene	101		1.00	0.310	ug/L	1		10/27/22 20:39
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
n-Propylbenzene	2.81		1.00	0.310	ug/L	1		10/27/22 20:39
o-Xylene	0.900 J		1.00	0.310	ug/L	1		10/27/22 20:39
P & M -Xylene	5.58		2.00	0.620	ug/L	1		10/27/22 20:39
sec-Butylbenzene	1.77		1.00	0.310	ug/L	1		10/27/22 20:39
Styrene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
Toluene	0.450 J		1.00	0.310	ug/L	1		10/27/22 20:39
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		10/27/22 20:39
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		10/27/22 20:39
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		10/27/22 20:39
Xylenes (total)	6.48		3.00	1.00	ug/L	1		10/27/22 20:39
Surrogates								
1,2-Dichloroethane-D4 (surr)	96.3		81-118		%	1		10/27/22 20:39
4-Bromofluorobenzene (surr)	100		85-114		%	1		10/27/22 20:39
Toluene-d8 (surr)	98.6		89-112		%	1		10/27/22 20:39

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **10-13-22-FD-1**

Client Sample ID: **10-13-22-FD-1**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365012
Lab Project ID: 1226365

Collection Date: 10/13/22 12:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 20:39
Container ID: 1226365012-D

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365013
Lab Project ID: 1226365

Collection Date: 10/13/22 00:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0450	mg/L	1		10/19/22 18:45
Surrogates								
4-Bromofluorobenzene (surr)	86.5		50-150		%	1		10/19/22 18:45

Batch Information

Analytical Batch: VFC16300
Analytical Method: AK101
Analyst: PHK
Analytical Date/Time: 10/19/22 18:45
Container ID: 1226365013-A

Prep Batch: VXX39366
Prep Method: SW5030B
Prep Date/Time: 10/19/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365013
Lab Project ID: 1226365

Collection Date: 10/13/22 00:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 23:31
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 23:31
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		10/27/22 23:31
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		10/27/22 23:31
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		10/27/22 23:31
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,2-Dichloroethane	0.250	U	0.500	0.200	ug/L	1		10/27/22 23:31
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		10/27/22 23:31
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 23:31
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 23:31
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		10/27/22 23:31
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		10/27/22 23:31
Benzene	0.200	U	0.400	0.120	ug/L	1		10/27/22 23:31
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 23:31
Bromoform	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Bromomethane	3.00	U	6.00	3.00	ug/L	1		10/27/22 23:31
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		10/27/22 23:31
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		10/27/22 23:31
Chloroethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365013
Lab Project ID: 1226365

Collection Date: 10/13/22 00:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Chloromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		10/27/22 23:31
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		10/27/22 23:31
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Freon-113	5.00	U	10.0	3.10	ug/L	1		10/27/22 23:31
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		10/27/22 23:31
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		10/27/22 23:31
Naphthalene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
o-Xylene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		10/27/22 23:31
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Styrene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Toluene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		10/27/22 23:31
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		10/27/22 23:31
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		10/27/22 23:31
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		10/27/22 23:31
Surrogates								
1,2-Dichloroethane-D4 (surr)	104		81-118		%	1		10/27/22 23:31
4-Bromofluorobenzene (surr)	105		85-114		%	1		10/27/22 23:31
Toluene-d8 (surr)	101		89-112		%	1		10/27/22 23:31

Print Date: 11/10/2022 3:17:50PM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **Nenana RR Site**
Lab Sample ID: 1226365013
Lab Project ID: 1226365

Collection Date: 10/13/22 00:00
Received Date: 10/18/22 09:10
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS22106
Analytical Method: SW8260D
Analyst: AZL
Analytical Date/Time: 10/27/22 23:31
Container ID: 1226365013-D

Prep Batch: VXX39403
Prep Method: SW5030B
Prep Date/Time: 10/27/22 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1846962 [MXX/35583]
Blank Lab ID: 1692880

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365001, 1226365002, 1226365003, 1226365004, 1226365005, 1226365006, 1226365007, 1226365008, 1226365009, 1226365010, 1226365011, 1226365012

Results by **SW6020B**

Parameter	Results	LOQ/CL	DL	Units
Lead	0.500U	1.00	0.310	ug/L

Batch Information

Analytical Batch: MMS11734
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/28/2022 10:42:42PM

Prep Batch: MXX35583
Prep Method: SW3010A
Prep Date/Time: 10/21/2022 11:56:45AM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [MXX35583]
Blank Spike Lab ID: 1692881
Date Analyzed: 10/28/2022 22:45

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365001, 1226365002, 1226365003, 1226365004, 1226365005, 1226365006, 1226365007, 1226365008, 1226365009, 1226365010, 1226365011, 1226365012

Results by **SW6020B**

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
Lead	1000	989	99	(88-115)

Batch Information

Analytical Batch: **MMS11734**
Analytical Method: **SW6020B**
Instrument: **P7 Agilent 7800**
Analyst: **HGS**

Prep Batch: **MXX35583**
Prep Method: **SW3010A**
Prep Date/Time: **10/21/2022 11:56**
Spike Init Wt./Vol.: 1000 ug/L Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1226365001
MS Sample ID: 1692882 MS
MSD Sample ID: 1692883 MSD

Analysis Date: 10/29/2022 0:28
Analysis Date: 10/29/2022 0:31
Analysis Date: 10/29/2022 0:33
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365001, 1226365002, 1226365003, 1226365004, 1226365005, 1226365006, 1226365007, 1226365008, 1226365009, 1226365010, 1226365011, 1226365012

Results by **SW6020B**

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Lead	5.94	1000	1020	101	1000	1000	100	88-115	1.52	(< 20)

Batch Information

Analytical Batch: MMS11735
Analytical Method: SW6020B
Instrument: P7 Agilent 7800
Analyst: HGS
Analytical Date/Time: 10/29/2022 12:31:00AM

Prep Batch: MXX35583
Prep Method: 3010 H20 Digest for Metals ICP-MS
Prep Date/Time: 10/21/2022 11:56:45AM
Prep Initial Wt./Vol.: 25.00mL
Prep Extract Vol: 25.00mL

Print Date: 11/10/2022 3:17:58PM

Method Blank

Blank ID: MB for HBN 1846757 [VXX/39364]
Blank Lab ID: 1692534

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365008, 1226365009, 1226365010, 1226365011, 1226365012

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	81.7	50-150		%

Batch Information

Analytical Batch: VFC16299
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: PHK
Analytical Date/Time: 10/19/2022 11:46:00AM

Prep Batch: VXX39364
Prep Method: SW5030B
Prep Date/Time: 10/19/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39364]
Blank Spike Lab ID: 1692535
Date Analyzed: 10/19/2022 12:42

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39364]
Spike Duplicate Lab ID: 1692536
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365008, 1226365009, 1226365010, 1226365011, 1226365012

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.917	92	1.00	0.909	91	(60-120)	0.94	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		87	0.0500		84	(50-150)	4.10	

Batch Information

Analytical Batch: **VFC16299**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **PHK**

Prep Batch: **VXX39364**
Prep Method: **SW5030B**
Prep Date/Time: **10/19/2022 06:00**
Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1846831 [VXX/39366]
Blank Lab ID: 1692587

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365013

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	88.6	50-150		%

Batch Information

Analytical Batch: VFC16300
Analytical Method: AK101
Instrument: Agilent 7890A PID/FID
Analyst: PHK
Analytical Date/Time: 10/19/2022 11:46:00AM

Prep Batch: VXX39366
Prep Method: SW5030B
Prep Date/Time: 10/19/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39366]
Blank Spike Lab ID: 1692590
Date Analyzed: 10/19/2022 12:41

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39366]
Spike Duplicate Lab ID: 1692591
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365013

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.911	91	1.00	0.954	95	(60-120)	4.60	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		92	0.0500		88	(50-150)	3.70	

Batch Information

Analytical Batch: **VFC16300**
Analytical Method: **AK101**
Instrument: **Agilent 7890A PID/FID**
Analyst: **PHK**

Prep Batch: **VXX39366**
Prep Method: **SW5030B**
Prep Date/Time: **10/19/2022 06:00**
Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1847100 [VXX/39384]
Blank Lab ID: 1693274

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365005

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0450	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	83	50-150		%

Batch Information

Analytical Batch: VFC16307
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: JY
Analytical Date/Time: 10/21/2022 10:54:00AM

Prep Batch: VXX39384
Prep Method: SW5030B
Prep Date/Time: 10/21/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39384]
Blank Spike Lab ID: 1693275
Date Analyzed: 10/21/2022 11:50

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39384]
Spike Duplicate Lab ID: 1693276
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365005

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.942	94	1.00	0.925	93	(60-120)	1.90	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500		85	0.0500		83	(50-150)	2.00	

Batch Information

Analytical Batch: **VFC16307**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **JY**

Prep Batch: **VXX39384**
Prep Method: **SW5030B**
Prep Date/Time: **10/21/2022 06:00**
Spike Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 0.0500 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1847387 [VXX/39403]
Blank Lab ID: 1694297

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365005, 1226365008, 1226365010, 1226365013

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

Method Blank

Blank ID: MB for HBN 1847387 [VXX/39403]
Blank Lab ID: 1694297

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365005, 1226365008, 1226365010, 1226365013

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
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)	99.5	81-118		%
4-Bromofluorobenzene (surr)	108	85-114		%
Toluene-d8 (surr)	101	89-112		%

Method Blank

Blank ID: MB for HBN 1847387 [VXX/39403]
Blank Lab ID: 1694297

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365005, 1226365008, 1226365010, 1226365013

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS22106
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: AZL
Analytical Date/Time: 10/27/2022 10:00:00PM

Prep Batch: VXX39403
Prep Method: SW5030B
Prep Date/Time: 10/27/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39403]
Blank Spike Lab ID: 1694298
Date Analyzed: 10/27/2022 22:15

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39403]
Spike Duplicate Lab ID: 1694299
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365005, 1226365008, 1226365010, 1226365013

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	28.9	96	30	28.5	95	(78-124)	1.40	(< 20)
1,1,1-Trichloroethane	30	28.3	94	30	28.1	94	(74-131)	0.64	(< 20)
1,1,2,2-Tetrachloroethane	30	28.5	95	30	28.4	95	(71-121)	0.28	(< 20)
1,1,2-Trichloroethane	30	29.2	97	30	29.4	98	(80-119)	0.58	(< 20)
1,1-Dichloroethane	30	28.0	93	30	27.9	93	(77-125)	0.29	(< 20)
1,1-Dichloroethene	30	27.8	93	30	27.4	91	(71-131)	1.70	(< 20)
1,1-Dichloropropene	30	28.9	96	30	28.6	95	(79-125)	0.94	(< 20)
1,2,3-Trichlorobenzene	30	26.2	87	30	28.2	94	(69-129)	7.20	(< 20)
1,2,3-Trichloropropane	30	28.4	95	30	28.4	95	(73-122)	0.07	(< 20)
1,2,4-Trichlorobenzene	30	28.8	96	30	29.8	99	(69-130)	3.70	(< 20)
1,2,4-Trimethylbenzene	30	29.1	97	30	28.9	96	(79-124)	0.55	(< 20)
1,2-Dibromo-3-chloropropane	30	29.2	97	30	29.9	100	(62-128)	2.50	(< 20)
1,2-Dibromoethane	30	29.1	97	30	29.1	97	(77-121)	0.03	(< 20)
1,2-Dichlorobenzene	30	28.3	94	30	28.5	95	(80-119)	0.74	(< 20)
1,2-Dichloroethane	30	27.0	90	30	27.3	91	(73-128)	0.96	(< 20)
1,2-Dichloropropane	30	28.6	96	30	28.7	96	(78-122)	0.31	(< 20)
1,3,5-Trimethylbenzene	30	29.1	97	30	28.8	96	(75-124)	1.10	(< 20)
1,3-Dichlorobenzene	30	28.9	96	30	28.6	95	(80-119)	1.30	(< 20)
1,3-Dichloropropane	30	29.4	98	30	29.4	98	(80-119)	0.03	(< 20)
1,4-Dichlorobenzene	30	28.6	95	30	28.7	96	(79-118)	0.42	(< 20)
2,2-Dichloropropane	30	29.1	97	30	29.1	97	(60-139)	0.21	(< 20)
2-Butanone (MEK)	90	84.9	94	90	87.0	97	(56-143)	2.40	(< 20)
2-Chlorotoluene	30	28.6	96	30	30.0	100	(79-122)	4.50	(< 20)
2-Hexanone	90	87.5	97	90	89.0	99	(57-139)	1.70	(< 20)
4-Chlorotoluene	30	29.0	97	30	28.6	95	(78-122)	1.50	(< 20)
4-Isopropyltoluene	30	29.4	98	30	29.5	98	(77-127)	0.31	(< 20)
4-Methyl-2-pentanone (MIBK)	90	83.0	92	90	84.9	94	(67-130)	2.20	(< 20)
Benzene	30	28.4	95	30	28.3	94	(79-120)	0.28	(< 20)
Bromobenzene	30	28.2	94	30	28.3	94	(80-120)	0.43	(< 20)
Bromochloromethane	30	27.2	91	30	27.7	92	(78-123)	1.90	(< 20)
Bromodichloromethane	30	27.8	93	30	28.0	93	(79-125)	0.54	(< 20)
Bromoform	30	28.4	95	30	28.9	96	(66-130)	1.90	(< 20)
Bromomethane	30	25.9	86	30	27.2	91	(53-141)	4.80	(< 20)
Carbon disulfide	45	41.7	93	45	40.9	91	(64-133)	1.90	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39403]
Blank Spike Lab ID: 1694298
Date Analyzed: 10/27/2022 22:15

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39403]
Spike Duplicate Lab ID: 1694299
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365005, 1226365008, 1226365010, 1226365013

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	28.4	95	30	28.3	94	(72-136)	0.56	(< 20)
Chlorobenzene	30	28.6	96	30	28.3	94	(82-118)	1.20	(< 20)
Chloroethane	30	26.8	89	30	24.9	83	(60-138)	7.20	(< 20)
Chloroform	30	27.4	91	30	27.4	91	(79-124)	0.04	(< 20)
Chloromethane	30	26.6	89	30	26.2	87	(50-139)	1.60	(< 20)
cis-1,2-Dichloroethene	30	27.4	91	30	27.8	93	(78-123)	1.30	(< 20)
cis-1,3-Dichloropropene	30	29.2	97	30	29.5	99	(75-124)	1.20	(< 20)
Dibromochloromethane	30	29.0	97	30	29.2	97	(74-126)	0.69	(< 20)
Dibromomethane	30	27.6	92	30	27.9	93	(79-123)	1.10	(< 20)
Dichlorodifluoromethane	30	24.2	81	30	23.6	79	(32-152)	2.40	(< 20)
Ethylbenzene	30	28.8	96	30	28.4	95	(79-121)	1.50	(< 20)
Freon-113	45	42.2	94	45	41.5	92	(70-136)	1.60	(< 20)
Hexachlorobutadiene	30	28.9	96	30	29.3	98	(66-134)	1.30	(< 20)
Isopropylbenzene (Cumene)	30	29.4	98	30	29.1	97	(72-131)	1.10	(< 20)
Methylene chloride	30	26.7	89	30	27.1	90	(74-124)	1.50	(< 20)
Methyl-t-butyl ether	45	42.9	95	45	43.5	97	(71-124)	1.50	(< 20)
Naphthalene	30	25.8	86	30	28.0	93	(61-128)	8.10	(< 20)
n-Butylbenzene	30	29.8	99	30	29.7	99	(75-128)	0.30	(< 20)
n-Propylbenzene	30	29.4	98	30	28.9	96	(76-126)	1.60	(< 20)
o-Xylene	30	28.9	96	30	28.6	95	(78-122)	0.97	(< 20)
P & M -Xylene	60	58.2	97	60	57.7	96	(80-121)	0.79	(< 20)
sec-Butylbenzene	30	29.4	98	30	29.3	98	(77-126)	0.31	(< 20)
Styrene	30	29.4	98	30	29.3	98	(78-123)	0.24	(< 20)
tert-Butylbenzene	30	29.1	97	30	28.9	96	(78-124)	0.79	(< 20)
Tetrachloroethene	30	28.9	96	30	28.3	94	(74-129)	1.90	(< 20)
Toluene	30	27.8	93	30	27.2	91	(80-121)	2.30	(< 20)
trans-1,2-Dichloroethene	30	27.7	92	30	27.5	92	(75-124)	0.62	(< 20)
trans-1,3-Dichloropropene	30	26.8	89	30	27.0	90	(73-127)	0.78	(< 20)
Trichloroethene	30	28.6	95	30	28.4	95	(79-123)	0.63	(< 20)
Trichlorofluoromethane	30	27.4	91	30	26.4	88	(65-141)	3.70	(< 20)
Vinyl acetate	30	29.5	98	30	29.9	100	(54-146)	1.20	(< 20)
Vinyl chloride	30	25.4	85	30	24.7	82	(58-137)	2.70	(< 20)
Xylenes (total)	90	87.1	97	90	86.3	96	(79-121)	0.85	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39403]
Blank Spike Lab ID: 1694298
Date Analyzed: 10/27/2022 22:15

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39403]
Spike Duplicate Lab ID: 1694299
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365005, 1226365008, 1226365010, 1226365013

Results by **SW8260D**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		97	30		98	(81-118)	1.10	
4-Bromofluorobenzene (surr)	30		100	30		99	(85-114)	1.00	
Toluene-d8 (surr)	30		100	30		99	(89-112)	0.71	

Batch Information

Analytical Batch: **VMS22106**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **AZL**

Prep Batch: **VXX39403**
Prep Method: **SW5030B**
Prep Date/Time: **10/27/2022 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1847397 [VXX/39404]
Blank Lab ID: 1694353

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365009, 1226365011, 1226365012

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

Method Blank

Blank ID: MB for HBN 1847397 [VXX/39404]
Blank Lab ID: 1694353

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365009, 1226365011, 1226365012

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
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)	99.5	81-118		%
4-Bromofluorobenzene (surr)	102	85-114		%
Toluene-d8 (surr)	98	89-112		%

Method Blank

Blank ID: MB for HBN 1847397 [VXX/39404]
Blank Lab ID: 1694353

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365009, 1226365011, 1226365012

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS22107
Analytical Method: SW8260D
Instrument: VPA 780/5975 GC/MS
Analyst: AZL
Analytical Date/Time: 10/27/2022 2:25:00PM

Prep Batch: VXX39404
Prep Method: SW5030B
Prep Date/Time: 10/27/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39404]
Blank Spike Lab ID: 1694354
Date Analyzed: 10/27/2022 14:40

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39404]
Spike Duplicate Lab ID: 1694355
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365009, 1226365011, 1226365012

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	30.3	101	30	29.3	98	(78-124)	3.40	(< 20)
1,1,1-Trichloroethane	30	28.3	94	30	28.4	95	(74-131)	0.25	(< 20)
1,1,2,2-Tetrachloroethane	30	30.2	101	30	30.2	101	(71-121)	0.03	(< 20)
1,1,2-Trichloroethane	30	30.1	100	30	28.7	96	(80-119)	4.90	(< 20)
1,1-Dichloroethane	30	28.1	94	30	27.8	93	(77-125)	1.30	(< 20)
1,1-Dichloroethene	30	27.5	92	30	27.3	91	(71-131)	0.51	(< 20)
1,1-Dichloropropene	30	29.4	98	30	30.0	100	(79-125)	2.00	(< 20)
1,2,3-Trichlorobenzene	30	31.2	104	30	31.0	103	(69-129)	0.71	(< 20)
1,2,3-Trichloropropane	30	29.5	98	30	29.2	98	(73-122)	0.85	(< 20)
1,2,4-Trichlorobenzene	30	31.3	104	30	31.1	104	(69-130)	0.80	(< 20)
1,2,4-Trimethylbenzene	30	31.1	104	30	31.7	106	(79-124)	1.80	(< 20)
1,2-Dibromo-3-chloropropane	30	29.4	98	30	28.9	96	(62-128)	1.70	(< 20)
1,2-Dibromoethane	30	30.6	102	30	29.1	97	(77-121)	5.10	(< 20)
1,2-Dichlorobenzene	30	28.7	96	30	28.7	96	(80-119)	0.14	(< 20)
1,2-Dichloroethane	30	27.5	92	30	26.6	89	(73-128)	3.50	(< 20)
1,2-Dichloropropane	30	30.5	102	30	29.7	99	(78-122)	2.60	(< 20)
1,3,5-Trimethylbenzene	30	30.6	102	30	31.1	104	(75-124)	1.60	(< 20)
1,3-Dichlorobenzene	30	29.3	98	30	29.4	98	(80-119)	0.37	(< 20)
1,3-Dichloropropane	30	30.3	101	30	29.4	98	(80-119)	3.20	(< 20)
1,4-Dichlorobenzene	30	29.4	98	30	29.4	98	(79-118)	0.17	(< 20)
2,2-Dichloropropane	30	28.7	96	30	28.8	96	(60-139)	0.24	(< 20)
2-Butanone (MEK)	90	90.4	100	90	87.1	97	(56-143)	3.70	(< 20)
2-Chlorotoluene	30	29.1	97	30	29.8	99	(79-122)	2.20	(< 20)
2-Hexanone	90	91.3	101	90	87.9	98	(57-139)	3.80	(< 20)
4-Chlorotoluene	30	30.1	100	30	30.3	101	(78-122)	0.63	(< 20)
4-Isopropyltoluene	30	31.3	104	30	32.3	108	(77-127)	3.10	(< 20)
4-Methyl-2-pentanone (MIBK)	90	98.5	109	90	94.7	105	(67-130)	3.90	(< 20)
Benzene	30	29.5	98	30	29.3	98	(79-120)	0.54	(< 20)
Bromobenzene	30	29.3	98	30	29.9	100	(80-120)	2.00	(< 20)
Bromochloromethane	30	28.8	96	30	27.5	92	(78-123)	4.60	(< 20)
Bromodichloromethane	30	29.8	99	30	28.8	96	(79-125)	3.30	(< 20)
Bromoform	30	30.9	103	30	29.1	97	(66-130)	6.20	(< 20)
Bromomethane	30	27.4	91	30	26.9	90	(53-141)	2.10	(< 20)
Carbon disulfide	45	40.9	91	45	40.4	90	(64-133)	1.20	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39404]
Blank Spike Lab ID: 1694354
Date Analyzed: 10/27/2022 14:40

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39404]
Spike Duplicate Lab ID: 1694355
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365009, 1226365011, 1226365012

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	29.1	97	30	29.3	98	(72-136)	0.58	(< 20)
Chlorobenzene	30	29.9	100	30	28.5	95	(82-118)	4.70	(< 20)
Chloroethane	30	26.1	87	30	24.6	82	(60-138)	6.00	(< 20)
Chloroform	30	28.2	94	30	27.3	91	(79-124)	3.10	(< 20)
Chloromethane	30	25.1	84	30	24.7	82	(50-139)	1.70	(< 20)
cis-1,2-Dichloroethene	30	28.5	95	30	28.3	94	(78-123)	0.70	(< 20)
cis-1,3-Dichloropropene	30	31.0	103	30	30.2	101	(75-124)	2.60	(< 20)
Dibromochloromethane	30	30.3	101	30	28.7	96	(74-126)	5.40	(< 20)
Dibromomethane	30	29.3	98	30	27.7	92	(79-123)	5.70	(< 20)
Dichlorodifluoromethane	30	20.1	67	30	20.1	67	(32-152)	0.25	(< 20)
Ethylbenzene	30	30.1	100	30	29.4	98	(79-121)	2.30	(< 20)
Freon-113	45	41.6	92	45	41.6	92	(70-136)	0.02	(< 20)
Hexachlorobutadiene	30	30.9	103	30	31.7	106	(66-134)	2.70	(< 20)
Isopropylbenzene (Cumene)	30	30.2	101	30	29.8	99	(72-131)	1.20	(< 20)
Methylene chloride	30	30.1	100	30	28.2	94	(74-124)	6.60	(< 20)
Methyl-t-butyl ether	45	46.8	104	45	45.3	101	(71-124)	3.40	(< 20)
Naphthalene	30	32.6	109	30	32.5	108	(61-128)	0.40	(< 20)
n-Butylbenzene	30	30.7	102	30	31.7	106	(75-128)	3.40	(< 20)
n-Propylbenzene	30	29.5	98	30	30.6	102	(76-126)	3.50	(< 20)
o-Xylene	30	30.2	101	30	29.8	100	(78-122)	1.30	(< 20)
P & M -Xylene	60	60.3	100	60	58.6	98	(80-121)	2.80	(< 20)
sec-Butylbenzene	30	30.3	101	30	31.5	105	(77-126)	3.90	(< 20)
Styrene	30	31.3	104	30	30.6	102	(78-123)	2.10	(< 20)
tert-Butylbenzene	30	30.1	100	30	30.9	103	(78-124)	2.70	(< 20)
Tetrachloroethene	30	29.2	97	30	29.0	97	(74-129)	0.86	(< 20)
Toluene	30	28.2	94	30	27.5	92	(80-121)	2.30	(< 20)
trans-1,2-Dichloroethene	30	28.6	95	30	27.5	92	(75-124)	3.80	(< 20)
trans-1,3-Dichloropropene	30	31.6	105	30	30.1	100	(73-127)	4.80	(< 20)
Trichloroethene	30	29.4	98	30	29.2	97	(79-123)	0.62	(< 20)
Trichlorofluoromethane	30	29.4	98	30	25.0	83	(65-141)	16.00	(< 20)
Vinyl acetate	30	31.8	106	30	30.2	101	(54-146)	4.90	(< 20)
Vinyl chloride	30	25.1	84	30	25.3	84	(58-137)	0.95	(< 20)
Xylenes (total)	90	90.5	101	90	88.5	98	(79-121)	2.30	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39404]
Blank Spike Lab ID: 1694354
Date Analyzed: 10/27/2022 14:40

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39404]
Spike Duplicate Lab ID: 1694355
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365009, 1226365011, 1226365012

Results by **SW8260D**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		96	30		92	(81-118)	4.60	
4-Bromofluorobenzene (surr)	30		101	30		102	(85-114)	0.39	
Toluene-d8 (surr)	30		101	30		99	(89-112)	1.40	

Batch Information

Analytical Batch: **VMS22107**
Analytical Method: **SW8260D**
Instrument: **VPA 780/5975 GC/MS**
Analyst: **AZL**

Prep Batch: **VXX39404**
Prep Method: **SW5030B**
Prep Date/Time: **10/27/2022 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1847638 [VXX/39422]
Blank Lab ID: 1695417

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365005

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.200U	0.400	0.120	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	104	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	100	89-112		%

Batch Information

Analytical Batch: VMS22117
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: AZL
Analytical Date/Time: 10/28/2022 11:51:00AM

Prep Batch: VXX39422
Prep Method: SW5030B
Prep Date/Time: 10/28/2022 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [VXX39422]
Blank Spike Lab ID: 1695418
Date Analyzed: 10/28/2022 12:07

Spike Duplicate ID: LCSD for HBN 1226365 [VXX39422]
Spike Duplicate Lab ID: 1695419
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365005

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	30	30.6	102	30	29.7	99	(79-120)	2.80	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		97	30		97	(81-118)	0.59	
4-Bromofluorobenzene (surr)	30		100	30		101	(85-114)	0.56	
Toluene-d8 (surr)	30		100	30		98	(89-112)	1.10	

Batch Information

Analytical Batch: **VMS22117**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **AZL**

Prep Batch: **VXX39422**
Prep Method: **SW5030B**
Prep Date/Time: **10/28/2022 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1846764 [XXX/47207]
Blank Lab ID: 1692550

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365009, 1226365011, 1226365012

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	0.0250U	0.0500	0.0148	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0148	ug/L
Acenaphthene	0.0250U	0.0500	0.0148	ug/L
Acenaphthylene	0.0250U	0.0500	0.0148	ug/L
Anthracene	0.0250U	0.0500	0.0148	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0148	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00600	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0148	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0148	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0148	ug/L
Chrysene	0.0250U	0.0500	0.0148	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00600	ug/L
Fluoranthene	0.0250U	0.0500	0.0148	ug/L
Fluorene	0.0250U	0.0500	0.0148	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0148	ug/L
Naphthalene	0.0500U	0.100	0.0312	ug/L
Phenanthrene	0.0500U	0.100	0.0310	ug/L
Pyrene	0.0250U	0.0500	0.0148	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	70.8	38-100		%
Fluoranthene-d10 (surr)	77.2	30-111		%

Batch Information

Analytical Batch: XMS13427
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: NGG
Analytical Date/Time: 10/30/2022 10:44:00PM

Prep Batch: XXX47207
Prep Method: SW3535A
Prep Date/Time: 10/20/2022 2:12:54PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [XXX47207]
Blank Spike Lab ID: 1692551
Date Analyzed: 10/30/2022 23:05

Spike Duplicate ID: LCSD for HBN 1226365 [XXX47207]
Spike Duplicate Lab ID: 1692552
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365001, 1226365002, 1226365003, 1226365004, 1226365006, 1226365007, 1226365009, 1226365011, 1226365012

Results by **8270D SIM (PAH)**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	2	1.45	73	2	1.41	71	(41-115)	2.80	(< 20)
2-Methylnaphthalene	2	1.48	74	2	1.41	70	(39-114)	4.90	(< 20)
Acenaphthene	2	1.64	82	2	1.56	78	(48-114)	4.50	(< 20)
Acenaphthylene	2	1.58	79	2	1.53	76	(35-121)	3.50	(< 20)
Anthracene	2	1.62	81	2	1.54	77	(53-119)	5.10	(< 20)
Benzo(a)Anthracene	2	1.51	75	2	1.38	69	(59-120)	8.80	(< 20)
Benzo[a]pyrene	2	1.82	91	2	1.70	85	(53-120)	7.00	(< 20)
Benzo[b]Fluoranthene	2	1.68	84	2	1.55	77	(53-126)	8.40	(< 20)
Benzo[g,h,i]perylene	2	1.98	99	2	1.85	93	(44-128)	6.60	(< 20)
Benzo[k]fluoranthene	2	1.67	84	2	1.55	78	(54-125)	7.20	(< 20)
Chrysene	2	1.58	79	2	1.45	73	(57-120)	8.30	(< 20)
Dibenzo[a,h]anthracene	2	1.81	90	2	1.72	86	(44-131)	5.10	(< 20)
Fluoranthene	2	1.56	78	2	1.43	71	(58-120)	9.00	(< 20)
Fluorene	2	1.64	82	2	1.56	78	(50-118)	4.90	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.98	99	2	1.83	92	(48-130)	7.40	(< 20)
Naphthalene	2	1.48	74	2	1.45	72	(43-114)	2.10	(< 20)
Phenanthrene	2	1.64	82	2	1.57	78	(53-115)	4.40	(< 20)
Pyrene	2	1.56	78	2	1.46	73	(53-121)	6.40	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2		72	2		68	(38-100)	5.10	
Fluoranthene-d10 (surr)	2		79	2		72	(30-111)	8.10	

Batch Information

Analytical Batch: **XMS13427**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **NGG**

Prep Batch: **XXX47207**
Prep Method: **SW3535A**
Prep Date/Time: **10/20/2022 14:12**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

Print Date: 11/10/2022 3:18:29PM

Method Blank

Blank ID: MB for HBN 1846981 [XXX/47216]
Blank Lab ID: 1692947

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365005, 1226365008, 1226365010

Results by **8270D SIM (PAH)**

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	0.0250U	0.0500	0.0148	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0148	ug/L
Acenaphthene	0.0250U	0.0500	0.0148	ug/L
Acenaphthylene	0.0250U	0.0500	0.0148	ug/L
Anthracene	0.0250U	0.0500	0.0148	ug/L
Benzo(a)Anthracene	0.0170J	0.0500	0.0148	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00600	ug/L
Benzo[b]Fluoranthene	0.0164J	0.0500	0.0148	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0148	ug/L
Benzo[k]fluoranthene	0.0162J	0.0500	0.0148	ug/L
Chrysene	0.0250U	0.0500	0.0148	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00600	ug/L
Fluoranthene	0.0173J	0.0500	0.0148	ug/L
Fluorene	0.0250U	0.0500	0.0148	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0148	ug/L
Naphthalene	0.0500U	0.100	0.0312	ug/L
Phenanthrene	0.0313J	0.100	0.0310	ug/L
Pyrene	0.0250U	0.0500	0.0148	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	78.2	42-86		%
Fluoranthene-d10 (surr)	86.5	50-97		%

Batch Information

Analytical Batch: XMS13420
Analytical Method: 8270D SIM (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: NGG
Analytical Date/Time: 10/25/2022 9:32:00PM

Prep Batch: XXX47216
Prep Method: SW3535A
Prep Date/Time: 10/21/2022 2:41:47PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [XXX47216]
Blank Spike Lab ID: 1692948
Date Analyzed: 10/25/2022 21:52

Spike Duplicate ID: LCSD for HBN 1226365 [XXX47216]
Spike Duplicate Lab ID: 1692949
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365005, 1226365008, 1226365010

Results by **8270D SIM (PAH)**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	2	1.33	67	2	1.31	65	(41-115)	1.70	(< 20)
2-Methylnaphthalene	2	1.30	65	2	1.30	65	(39-114)	0.16	(< 20)
Acenaphthene	2	1.52	76	2	1.50	75	(48-114)	1.20	(< 20)
Acenaphthylene	2	1.37	69	2	1.35	67	(35-121)	2.00	(< 20)
Anthracene	2	1.60	80	2	1.54	77	(53-119)	3.40	(< 20)
Benzo(a)Anthracene	2	1.44	72	2	1.47	74	(59-120)	2.30	(< 20)
Benzo[a]pyrene	2	1.59	80	2	1.61	81	(53-120)	0.97	(< 20)
Benzo[b]Fluoranthene	2	1.55	77	2	1.61	81	(53-126)	4.20	(< 20)
Benzo[g,h,i]perylene	2	1.92	96	2	1.91	96	(44-128)	0.32	(< 20)
Benzo[k]fluoranthene	2	1.71	85	2	1.69	84	(54-125)	1.00	(< 20)
Chrysene	2	1.60	80	2	1.60	80	(57-120)	0.12	(< 20)
Dibenzo[a,h]anthracene	2	1.90	95	2	1.90	95	(44-131)	0.14	(< 20)
Fluoranthene	2	1.51	75	2	1.49	75	(58-120)	1.00	(< 20)
Fluorene	2	1.60	80	2	1.57	79	(50-118)	1.90	(< 20)
Indeno[1,2,3-c,d] pyrene	2	1.81	91	2	1.82	91	(48-130)	0.52	(< 20)
Naphthalene	2	1.21	61	2	1.21	61	(43-114)	0.42	(< 20)
Phenanthrene	2	1.59	80	2	1.54	77	(53-115)	3.30	(< 20)
Pyrene	2	1.51	76	2	1.50	75	(53-121)	0.91	(< 20)
Surrogates									
2-Methylnaphthalene-d10 (surr)	2		77	2		77	(42-86)	0.59	
Fluoranthene-d10 (surr)	2		82	2		84	(50-97)	2.00	

Batch Information

Analytical Batch: **XMS13420**
Analytical Method: **8270D SIM (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **NGG**

Prep Batch: **XXX47216**
Prep Method: **SW3535A**
Prep Date/Time: **10/21/2022 14:41**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL

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Method Blank

Blank ID: MB for HBN 1847250 [XXX/47241]
Blank Lab ID: 1693553

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365001, 1226365002, 1226365003, 1226365004, 1226365005, 1226365006, 1226365007, 1226365008, 1226365009, 1226365010, 1226365011, 1226365012

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.200	mg/L
Surrogates				
5a Androstane (surr)	85.1	60-120		%

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK102
Instrument: Agilent 7890B R
Analyst: HMW
Analytical Date/Time: 10/27/2022 2:20:00PM

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/2022 4:26:18PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [XXX47241]
Blank Spike Lab ID: 1693554
Date Analyzed: 10/27/2022 14:30

Spike Duplicate ID: LCSD for HBN 1226365 [XXX47241]
Spike Duplicate Lab ID: 1693555
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365001, 1226365002, 1226365003, 1226365004, 1226365005, 1226365006, 1226365007, 1226365008, 1226365009, 1226365010, 1226365011, 1226365012

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	15.8	79	20	16.4	82	(75-125)	4.10	(< 20)
Surrogates									
5a Androstane (surr)	0.4		93	0.4		93	(60-120)	0.12	

Batch Information

Analytical Batch: **XFC16383**
Analytical Method: **AK102**
Instrument: **Agilent 7890B R**
Analyst: **HMW**

Prep Batch: **XXX47241**
Prep Method: **SW3520C**
Prep Date/Time: **10/26/2022 16:26**
Spike Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL

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Method Blank

Blank ID: MB for HBN 1847250 [XXX/47241]
Blank Lab ID: 1693553

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1226365001, 1226365002, 1226365003, 1226365004, 1226365005, 1226365006, 1226365007, 1226365008, 1226365009, 1226365010, 1226365011, 1226365012

Results by **AK103**

Parameter	Results	LOQ/CL	DL	Units
Residual Range Organics	0.250U	0.500	0.200	mg/L
Surrogates				
n-Triacontane-d62 (surr)	84.4	60-120		%

Batch Information

Analytical Batch: XFC16383
Analytical Method: AK103
Instrument: Agilent 7890B R
Analyst: HMW
Analytical Date/Time: 10/27/2022 2:20:00PM

Prep Batch: XXX47241
Prep Method: SW3520C
Prep Date/Time: 10/26/2022 4:26:18PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1226365 [XXX47241]
Blank Spike Lab ID: 1693554
Date Analyzed: 10/27/2022 14:30

Spike Duplicate ID: LCSD for HBN 1226365 [XXX47241]
Spike Duplicate Lab ID: 1693555
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1226365001, 1226365002, 1226365003, 1226365004, 1226365005, 1226365006, 1226365007, 1226365008, 1226365009, 1226365010, 1226365011, 1226365012

Results by **AK103**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Residual Range Organics	20	15.1	76	20	14.9	74	(60-120)	1.70	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4		78	0.4		78	(60-120)	0.48	

Batch Information

Analytical Batch: **XFC16383**
Analytical Method: **AK103**
Instrument: **Agilent 7890B R**
Analyst: **HMW**

Prep Batch: **XXX47241**
Prep Method: **SW3520C**
Prep Date/Time: **10/26/2022 16:26**
Spike Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 0.4 mg/L Extract Vol: 1 mL

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Page 1 of 2

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

Section 1

CLIENT:	DNA Enviromental		
CONTACT:	Daniel Frank	PHONE #:	
PROJECT NAME:	Nenana RR Site	Project/Permit Number:	
		NPDL Number(DOD):	
REPORTS TO:		E-MAIL:	Daniel.Frank@dnaenviro.com
INVOICE TO:		QUOTE #:	
		P.O. #:	

Section 3

Preservative: HCl | HCl | HCl | HNO_3

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Sample Type (Comp / Grab / MI)	Analysis*: AK101 GRO	AK102/103 DRO/RRO	8260 VOC	6020 Total Pb	8270 PAHs					REMARKS/LOC ID
1AK	10-13-22-MW-~~10~~ 1	10/13/22	1505	WA	9	9	X	X	X	X	X					
2AK	10-13-22-MW-2	10/13/22	1420				X	X	X	X	X					
3AK	10-13-22-MW-3	10/13/22	1700				X	X	X	X	X					
4AK	10-13-22-MW-4	10/13/22	1600				X	X	X	X	X					
5AK	10-~~13~~-22-MW-5 (14)	10/14/22	1015				X	X	X	X	X					
6AK	10-13-22-MW-6	10/13/22	1315				X	X	X	X	X					
7AK	10-13-22-MW-10R	10/13/22	1212				X	X	X	X	X					
8AK	10-~~13~~-22-MW-11 (14)	10/14/22	1150				X	X	X	X	X					
9AK	10-13-22-MW-14	10/13/22	1845				X	X	X	X	X					
10AK	10-~~13~~-22-MW-15 (14)	10/14/22	0930				X	X	X	X	X					

NOTE:
*The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Comments:
Volume for 6020 to be pulled from the 1-Liter PAHs.

Section 4

DOD Project? YES (NO)

Data Deliverables Requested: DataView / Level 4 / SEDD / ERPIMS / EQUIS / Other:_____

Turnaround Time Requested: (Standard) / Rush

Requested Rush Report Date:_____

SGS Sample Receipt (Lab Use Only)

Delivery Method: (Client) / Commercial

Did each cooler have a corresponding COC? (Yes) / No

Chain of Custody Seal Condition: INTACT / BROKEN / (ABSENT)

COC Seal Location(s): N/A

Section 5

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	Cooler ID	Temperature (°C)	Therm. ID
	10/14/22	1407		1	4.0	D23
	10/17/22	1520		2	1.9	D50
				3	4.5	D23
	10/18/22	9:10				

If more than three coolers are received, or for documentation of non-compliant coolers, use form FS-0029.
4 = 3.9 D50

Note: If temp. is outside 0-6° and samples were not taken <8 hours ago OR are waste samples, Client or PM should initial here or attach an email change order to proceed with analysis. If ice is present, note on form F102B.

Intials:_____

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F083-Blank_COC_20181228

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Profile #: Int.:

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

Section 1

CLIENT:	DNA Enviromental		
CONTACT:	Daniel Frank	PHONE #:	
PROJECT NAME:	Nenana RR Site	Project/Permit Number: NPDL Number(DOD):	
REPORTS TO:		E-MAIL:	Daniel.Frank@dnaenviro.com
INVOICE TO:		QUOTE #: P.O. #:	

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Sample Type (Comp / Grab / MI)	Analysis* AK101 GRO (HCl)	AK102/103 DRO/RRO (HCl)	8260 VOC (HCl)	6020 Total Pb (HNO3)	8270 PAHs	REMARKS/LOC ID
11AK	10-13-22-RB-1	10/13/22	1800	WA	9	9	X	X	X	X	X	
DF	~~10-13-22-FB-1~~						~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	
12AK	10-13-22-FD-1	10/13/22	1200	WA	9		X	X	X	X	X	
13AK	TRIP BLANK	10/13/22		WA	1		X		X			

NOTE: *The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

10/14/22

Comments:

Section 4

DOD Project? YES NO

Data Deliverables Requested: DataView, Level 4, SEDD, ERPIMS, EQUIS, Other:

Turnaround Time Requested

Standard

Rush

Requested Rush Report Date:

SGS Sample Receipt (Lab Use Only)

Delivery Method: Client Commercial

Did each cooler have a corresponding COC? Yes No

Chain of Custody Seal Condition: INTACT BROKEN ABSENT

COC Seal Location(s):

Section 5

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	Cooler ID	Temperature (°C)	Therm. ID
	10/14/22	1407		Pg 1		
	10/17/22	1500				
	10/18/22	9:10				

If more than three coolers are received, or for documentation of non-compliant coolers, use form FS-0029.

Note: If temp. is outside 0-6° and samples were not taken <8 hours ago OR are waste samples, Client or PM should initial here or attach an email change order to proceed with analysis. If ice is present, note on form F102B.

Intials:

Laboratory Use Only

http://www.sgs.com/terms-and-conditions

e-Sample Receipt Form FBK

SGS Workorder #: **DNA** | DNA

Review Criteria	Condition (Yes, No, N/A	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
☐ **Exemption permitted if chilled & collected <8 hours ago, or for samples where chilling is not required		
Temperature blank compliant* (i.e., 0-6 °C after CF)?	Yes	Cooler ID: 1 @ 4.0 °C Therm. ID: D23
	Yes	Cooler ID: 2 @ 1.9 °C Therm. ID: D50
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.	Yes	Cooler ID: 3 @ 4.5 °C Therm. ID: D23
	Yes	Cooler ID: 4 @ 3.9 °C Therm. ID: D50
If >6°C, were samples collected <8 hours ago?		
If <0°C, were sample containers ice free?		
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	N/C	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were samples in good condition (no leaks/cracks/breakage)?	Yes	
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/C	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	
For Rush/Short Hold Time, was RUSH/Short HT email sent?	Yes	PAH break hold 10/20

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

Additional notes (if applicable):

SGS Profile #		0

e-Sample Receipt Form

SGS Workorder #:	1226365	1226365

Review Criteria	Condition (Yes, No, N/A	Exceptions Noted below
Chain of Custody / Temperature Requirements	*Note:* Temperature and COC seal information is found on the chain of custody form	
DOD only: Did all sample coolers have a corresponding COC?	Yes	
If <0°C, were sample containers ice free?	N/A	
Note containers received with ice:		
Identify any containers received at non-compliant temperature: *(Use form FS-0029 if more space is needed)*		
Holding Time / Documentation / Sample Condition Requirements	*Note:* Refer to form F-083 "Sample Guide" for specific holding times and sample containers.	
Were samples received within analytical holding time?	Yes	
Do sample labels match COC? Record discrepancies.	Yes	
Note: *If information on containers differs from COC, default to COC information for login. If times differ <1hr, record details & login per COC.*		
Were analytical requests clear? *(i.e. method is specified for analyses with multiple option for method (Eg, BTEX 8021 vs 8260, Metals 6020 vs 200.8)*	Yes	
Were proper containers (type/mass/volume/preservative)used? Note: Exemption for metals analysis by 200.8/6020 in water.	Yes	
Volatile Analysis Requirements (VOC, GRO, LL-Hg, etc.)		
Were all soil VOAs received with a corresponding % solids container?	N/A	
Were Trip Blanks (e.g., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (e.g., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with Methanol+BFB?	N/A	

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

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1226365001-A	HCL to pH < 2	OK	1226365005-F	HCL to pH < 2	OK
1226365001-B	HCL to pH < 2	OK	1226365005-G	HCL to pH < 2	OK
1226365001-C	HCL to pH < 2	OK	1226365005-H	HCL to pH < 2	OK
1226365001-D	HCL to pH < 2	OK	1226365005-I	No Preservative Required	OK
1226365001-E	HCL to pH < 2	OK	1226365005-J	No Preservative Required	OK
1226365001-F	HCL to pH < 2	OK	1226365005-K	HNO3 to pH < 2	OK
1226365001-G	HCL to pH < 2	OK	1226365006-A	HCL to pH < 2	OK
1226365001-H	HCL to pH < 2	OK	1226365006-B	HCL to pH < 2	OK
1226365001-I	No Preservative Required	OK	1226365006-C	HCL to pH < 2	OK
1226365001-J	No Preservative Required	OK	1226365006-D	HCL to pH < 2	OK
1226365001-K	HNO3 to pH < 2	OK	1226365006-E	HCL to pH < 2	OK
1226365002-A	HCL to pH < 2	OK	1226365006-F	HCL to pH < 2	OK
1226365002-B	HCL to pH < 2	OK	1226365006-G	HCL to pH < 2	OK
1226365002-C	HCL to pH < 2	OK	1226365006-H	HCL to pH < 2	OK
1226365002-D	HCL to pH < 2	OK	1226365006-I	No Preservative Required	OK
1226365002-E	HCL to pH < 2	OK	1226365006-J	No Preservative Required	OK
1226365002-F	HCL to pH < 2	OK	1226365006-K	HNO3 to pH < 2	OK
1226365002-G	HCL to pH < 2	OK	1226365007-A	HCL to pH < 2	OK
1226365002-H	HCL to pH < 2	OK	1226365007-B	HCL to pH < 2	OK
1226365002-I	No Preservative Required	OK	1226365007-C	HCL to pH < 2	OK
1226365002-J	No Preservative Required	OK	1226365007-D	HCL to pH < 2	OK
1226365002-K	HNO3 to pH < 2	OK	1226365007-E	HCL to pH < 2	OK
1226365003-A	HCL to pH < 2	OK	1226365007-F	HCL to pH < 2	OK
1226365003-B	HCL to pH < 2	OK	1226365007-G	HCL to pH < 2	OK
1226365003-C	HCL to pH < 2	OK	1226365007-H	HCL to pH < 2	OK
1226365003-D	HCL to pH < 2	OK	1226365007-I	No Preservative Required	OK
1226365003-E	HCL to pH < 2	OK	1226365007-J	No Preservative Required	OK
1226365003-F	HCL to pH < 2	OK	1226365007-K	HNO3 to pH < 2	OK
1226365003-G	HCL to pH < 2	OK	1226365008-A	HCL to pH < 2	OK
1226365003-H	HCL to pH < 2	OK	1226365008-B	HCL to pH < 2	OK
1226365003-I	No Preservative Required	OK	1226365008-C	HCL to pH < 2	OK
1226365003-J	No Preservative Required	OK	1226365008-D	HCL to pH < 2	OK
1226365003-K	HNO3 to pH < 2	OK	1226365008-E	HCL to pH < 2	OK
1226365004-A	HCL to pH < 2	OK	1226365008-F	HCL to pH < 2	OK
1226365004-B	HCL to pH < 2	OK	1226365008-G	HCL to pH < 2	OK
1226365004-C	HCL to pH < 2	OK	1226365008-H	HCL to pH < 2	OK
1226365004-D	HCL to pH < 2	OK	1226365008-I	No Preservative Required	OK
1226365004-E	HCL to pH < 2	OK	1226365008-J	No Preservative Required	OK
1226365004-F	HCL to pH < 2	OK	1226365008-K	HNO3 to pH < 2	OK
1226365004-G	HCL to pH < 2	OK	1226365009-A	HCL to pH < 2	OK
1226365004-H	HCL to pH < 2	OK	1226365009-B	HCL to pH < 2	OK
1226365004-I	No Preservative Required	OK	1226365009-C	HCL to pH < 2	OK
1226365004-J	No Preservative Required	OK	1226365009-D	HCL to pH < 2	OK
1226365004-K	HNO3 to pH < 2	OK	1226365009-E	HCL to pH < 2	OK
1226365005-A	HCL to pH < 2	OK	1226365009-F	HCL to pH < 2	OK
1226365005-B	HCL to pH < 2	OK	1226365009-G	HCL to pH < 2	OK
1226365005-C	HCL to pH < 2	OK	1226365009-H	HCL to pH < 2	OK
1226365005-D	HCL to pH < 2	OK	1226365009-I	No Preservative Required	OK
1226365005-E	HCL to pH < 2	OK	1226365009-J	No Preservative Required	OK

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1226365009-K	HNO3 to pH < 2	OK			
1226365010-A	HCL to pH < 2	OK			
1226365010-B	HCL to pH < 2	OK			
1226365010-C	HCL to pH < 2	OK			
1226365010-D	HCL to pH < 2	OK			
1226365010-E	HCL to pH < 2	OK			
1226365010-F	HCL to pH < 2	OK			
1226365010-G	HCL to pH < 2	OK			
1226365010-H	HCL to pH < 2	OK			
1226365010-I	No Preservative Required	OK			
1226365010-J	No Preservative Required	OK			
1226365010-K	HNO3 to pH < 2	OK			
1226365011-A	HCL to pH < 2	OK			
1226365011-B	HCL to pH < 2	OK			
1226365011-C	HCL to pH < 2	OK			
1226365011-D	HCL to pH < 2	OK			
1226365011-E	HCL to pH < 2	OK			
1226365011-F	HCL to pH < 2	OK			
1226365011-G	HCL to pH < 2	OK			
1226365011-H	HCL to pH < 2	OK			
1226365011-I	No Preservative Required	OK			
1226365011-J	No Preservative Required	OK			
1226365011-K	HNO3 to pH < 2	OK			
1226365012-A	HCL to pH < 2	OK			
1226365012-B	HCL to pH < 2	OK			
1226365012-C	HCL to pH < 2	OK			
1226365012-D	HCL to pH < 2	OK			
1226365012-E	HCL to pH < 2	OK			
1226365012-F	HCL to pH < 2	OK			
1226365012-G	HCL to pH < 2	OK			
1226365012-H	HCL to pH < 2	OK			
1226365012-I	No Preservative Required	OK			
1226365012-J	No Preservative Required	OK			
1226365012-K	HNO3 to pH < 2	OK			
1226365013-A	HCL to pH < 2	OK			
1226365013-B	HCL to pH < 2	OK			
1226365013-C	HCL to pH < 2	OK			
1226365013-D	HCL to pH < 2	OK			
1226365013-E	HCL to pH < 2	OK			
1226365013-F	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

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

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

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ATTACHMENT 5

ADEC Checklists and Data Quality Report

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Arctic Data Services

250 Cushman St. Suite 3D
Fairbanks, AK 99701
907-457-3147

Date:	12/12/2022
Project name:	Crowley Nenana Fuel Terminal – 2022 Groundwater Monitoring
Laboratories:	SGS North America, Inc – Anchorage, AK (SGS Anchorage)
Sample Delivery Groups:	1226365
ADS Project Number:	D22027
Reviewed by:	Leslie Brooks
Title:	Environmental Scientist
Approved by:	Rodney Guritz
Title:	Principal Chemist

To: Mr. Dan Frank
DNA Environmental, LLC
111 W 9th Ave
Anchorage, AK 99501

Data Quality Assessment

This letter summarizes the findings of a data quality assessment (DQA) conducted by Arctic Data Services, LLC (ADS) for the above-referenced project data on behalf of DNA Environmental Consultants, LLC (DNA). Precision, accuracy, sensitivity, representativeness, comparability, and completeness of the data was evaluated by reviewing laboratory-supplied quality assurance/quality control (QA/QC) information as well as conducting independent QA/QC checks on the data. A Stage 2A data validation was conducted in accordance with ADS's *Standard Operating Procedure for Stage 2A Data Validation* (2022). Stage 2A validation includes reviewing sample handling, custody, and sample-batch level QC information and applying data qualifiers to sample results affected by anomalies and QC failures and summarizing the impacts to data quality. Instrument-level QC information is not reviewed. This validation meets the requirements of the Alaska Department of Environmental Conservation (ADEC) *Technical Memorandum 22-001, Guidelines for Data Reporting* (August 2022). In the absence of project-specific control limits or measurement quality objectives (MQOs), laboratory QC sample recoveries and relative percent differences (RPDs) were compared to laboratory control limits. Field-duplicate RPDs were compared to ADEC-recommended MQOs.

Project action limits (PALs) were sourced from following regulations:

- ADEC 18 AAC 75.345 Table C Groundwater Cleanup Levels for groundwater samples.

ADEC laboratory data review checklists were completed for each laboratory work order and are attached to this DQA. Table 1 (attached) provides a tabular summary of results qualified in the course of our review. Table 2 (attached) provides a list of non-detect results lacking adequate analytical sensitivity. The following sections provide a summary of data validation findings for each QA/QC element reviewed; failures or anomalies that had no impact to data quality are discussed in the ADEC laboratory data review checklists and are not further described herein.

Sample Analysis Summary

Analytical results for 11 groundwater samples (including field duplicates) and associated field QC samples (trip blank and equipment blank) were reviewed. The samples were submitted in a single sample delivery group (SDG) to SGS Anchorage for analysis of the following:

- total lead by EPA Method 6020B;
- polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D SIM;
- volatile organic compounds (VOCs) by EPA Method 8260D;
- gasoline range organics (GRO) by Alaska Method AK101;
- diesel range organics (DRO) by Alaska Method AK102; and
- residual range organics (RRO) by Alaska Method AK103.

Sample Preservation, Handling, Custody, and Holding Times

Sample receipt forms were reviewed to check that samples were received in good condition, properly preserved, and within the required temperature range. Chain of custody forms were reviewed to confirm that custody was not breached during sample handling. Dates of sample collection, preparation, and analysis were compared to check that method holding times were not exceeded.

There were no sample-receiving anomalies that affected project-sample data quality.

Method Blanks

The laboratories analyzed and reported a method blank (MB) sample for each preparatory batch, to check for laboratory-based sample contamination. If and where analytes were detected in a MB, corresponding project-sample results were compared to the MB concentration and were considered affected if detected within 10 times the MB concentration. Affected results are qualified with 'B' flags, indicating the results are estimated with a high bias and may be false-positive detections.

The following MB detections affected project-sample data quality.

- **1226365.** Five PAH analytes were detected in method blanks associated with project samples; refer to the checklist for details. Five project-sample results for fluoranthene and phenanthrene were affected; refer to the checklist and Table 1 for details.

Trip Blanks

Trip blanks (TBs) accompany samples for volatile organic analysis and are used to check for potential cross-contamination of samples during sampling, shipping, or storage. An aqueous matrix TB was submitted alongside

groundwater samples for VOC and GRO analysis. If and where analytes were detected in a TB, corresponding project-sample results (generally, all samples transported in the same cooler) were compared to the TB concentration and were considered affected if detected within 10 times the TB concentration.

There were no TB detections that affected project-sample data quality.

Equipment Blanks

Equipment blanks (EBs) are collected from reusable sampling equipment to check for potential cross-contamination of samples from the equipment. In the case where an analyte was detected in the EB, corresponding project-sample results are compared to the EB concentration and are considered potentially affected if detected within 10 times (10X) the EB concentration. Professional judgement is used to determine if data quality was affected for individual results, depending upon relative collection times and concentrations of associated samples.

The following EB detections affected project-sample data quality.

- **1226365.** Five analytes were detected in the equipment blank associated with all project samples; refer to the checklist for details. Forty project-sample results were affected; refer to the checklist and Table 1 for details.

Laboratory Control Samples

The laboratory analyzed and reported a laboratory control sample (LCS) for each preparatory batch, to assess laboratory extraction efficiency and analytical accuracy. In some cases, LCS duplicates (LCSDs) were used to assess analytical precision. LCS/LCSD recovery information and LCSD RPD information (where available) were reviewed.

There were no LCS/LCSD recovery or RPD failures that affected project-sample data quality.

Matrix Spike Samples

Matrix spikes (MS) and MS duplicates (MSD) were analyzed for select organic batches, to evaluate potential matrix interference affecting accuracy and/or precision. MS/MSD recovery and RPDs were evaluated only if the parent sample (the sample spiked for the MS/MSD) was in the project-sample set. Additionally, MS/MSD recovery was only evaluated if the spiking concentration was greater than the native analyte concentration, as a low spiking ratio (compared to native analyte concentration in the parent sample) does not yield useful recovery information.

There were no MS/MSD recovery or RPD failures affecting project-sample data quality; refer to the checklist for details.

Surrogate Recoveries

Samples submitted for organic analyses were spiked with analyte surrogates to evaluate extraction efficiency and to check for matrix interference. Surrogate recoveries were reviewed for each sample and organic analysis performed. Results reported for heavily diluted samples (dilution factor > 10) are not considered affected by surrogate recovery failures.

The following surrogate recovery failures affected project-sample data quality.

- **1226365.** There were three surrogate recovery failures identified in one project sample for the 8260D and 8270D-SIM analyses; refer to the checklist for details. Most failures did not affect project-sample data quality, due to heavy dilution (surrogates diluted out) or high recovery and non-detect associated results. Six results for sample 10-13-22-MW-4 are considered affected and are qualified 'J+' as estimated with a high bias; refer to the checklist and Table 1 for details.

Field Duplicates

Field duplicate samples were collected and submitted to the laboratory for each matrix and 10 project samples; field duplicates were not submitted blind (see checklists for details). RPDs between field-duplicate results were calculated where at least one of the results was quantitatively detected (above the LOQ); where analytes were not detected, the LOQ was used in the calculation. The following MQO was used to evaluate field-duplicate precision: 30% for the groundwater matrix.

There were no field duplicate RPD failures affecting project-sample data quality.

Summary of Data Quality Indicators

The following sections summarize the findings of the above review with respect to the six data quality indicators: sensitivity, precision, accuracy, representativeness, comparability, and completeness.

Sensitivity

Sensitivity describes the ability of the sampling and analytical methodology to meet detection and/or quantitation limit objectives. Analytical sensitivity was evaluated by checking that LODs and LOQs for non-detect results were below relevant PALs. A non-detect result is considered to be adequately sensitive if the LOD is below the PAL.

There were 19 VOC (8260D) analytes that had LODs exceeding PALs for one or more groundwater samples; see Table 2 for details. These results cannot be used to rule out the potential presence of the analyte at concentrations above the PAL for the sampled location. Overall analytical sensitivity is deemed acceptable for the purposes of this project, with exceptions highlighted in Table 2.

Precision

Precision is a measure of the reproducibility of repetitive measurements. Precision was evaluated based on laboratory QC-sample RPDs and field-duplicate RPDs. No results were affected by LCS/LCSD, MS/MSD, or laboratory duplicate RPD failures. No results were affected by field duplicate RPD failures. QC sample and field duplicate RPDs indicated adequate overall precision.

Accuracy

Accuracy is a measure of the correctness, or the closeness, between the true value and the quantity detected. Accuracy was evaluated based on target-analyte recoveries for laboratory QC samples, and surrogate recoveries for project samples. Accuracy also may be affected by sample contamination identified in blank samples, or by sample handling, preservation, or holding time anomalies.

No results were affected by LCS/LCSD or MS/MSD recovery failures. Six results were affected by surrogate recovery failures (high). A total of 43 results were affected by contamination identified in one or more blank samples (MB, EB, or TB). In each case, the direction of bias is indicated where it can be determined. In most cases, impact to data usability was minimal. However, the 1,3,5-trimethylbenzene and 1-methylnaphthalene results for sample 10-13-22-MW-4 and the naphthalene result for sample 10-14-22-MW-12 should be used with caution as these results are biased high and only slightly above the PAL. Overall accuracy is deemed acceptable for the purposes of this project, with exceptions highlighted in Table 1.

Representativeness

Representativeness describes the degree to which data accurately and precisely represent site characteristics. Representativeness is affected by factors such as sample frequency and matrix or contaminant heterogeneity, as well as analytical performance (including sensitivity, accuracy, and precision), sample preservation, handling, and holding times, and sample cross-contamination.

Samples were collected in accordance with an ADEC-approved work plan, and data quality objectives were generally met. Sensitivity, precision, and accuracy were acceptable for the purposes of this project, with exceptions noted above. Overall, results were considered adequately representative of environmental conditions for the purposes of this project.

Comparability

Comparability describes whether two data sets can be considered equivalent with respect to project goals. Comparability is affected by factors such as sampling methodology and analytical performance (including

sensitivity, accuracy, and precision). Comparability was evaluated by checking that standard analytical methods were employed, and analytical performance was acceptable.

Data review findings generally support that the dataset is comparable; however, comparability should be evaluated by the project team considering sample collection methodology and historic results alongside data quality and analytical methodology.

Completeness

Completeness describes the amount of valid data obtained from the sampling events. It is calculated as the percentage of usable measurements compared to the total number of measurements. The dataset is 100% complete, with no data recommended for rejection in the course of this review.

Conclusions

Sensitivity, precision, accuracy, representativeness, comparability, and completeness were deemed acceptable, and the data are usable for the purposes of this project. A total of 49 results were qualified due to QC anomalies; see Table 1 for details. Non-detect results lacking adequate analytical sensitivity are listed in Table 2, with results having LODs exceeding the PAL highlighted grey. No results were recommended for rejection in the course of this review.

Limitations

This review was based solely on information provided by the analytical laboratory in the laboratory reports and electronic deliverables for the SDG(s) reviewed. ADS did not review instrument-level QC elements, such as calibration verification or internal standard response, except to the extent that the laboratory identified instrument-level anomalies in the case narrative. ADS did not conduct independent recalculations of the data (e.g. recalculating results based on instrument responses) or review any raw chemical data (e.g. chromatograms). A data quality assessment reduces the risk of reliance on data of compromised quality; however, it does not eliminate that risk.

Attachments:

Table 1 – Summary of Qualified Data
Table 2 – Analytical Sensitivity Summary
ADEC Laboratory Data Review Checklists: 1226365

Summary of Qualified Data

2022 Nenana Groundwater Monitoring

Data Quality Assessment

Table 1 - Summary of Qualified Data

Lab	SDG	Client_Sample_ID	Matrix	Method	Analyte	CAS	Units	DL	LOD	LOQ	Result	Lab Flag	QC Flags	Note	Final QC Flag	Final Qualified Result	PAL
SGSA	1226365	10-13-22-MW-1	Ground_Water	8260D	*Toluene*	108-88-3	µg/L	0.310	0.500	1.00	0.450	J	B	EB	B	0.450 J B	1100
SGSA	1226365	10-13-22-MW-1	Ground_Water	8270DSIM	*1-Methylnaphthalene*	90-12-0	µg/L	0.0763	0.129	0.258	6.51	NA	B	EB	B	6.51 B	11.0
SGSA	1226365	10-13-22-MW-1	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.0763	0.129	0.258	4.49	NA	B	EB	B	4.49 B	36.0
SGSA	1226365	10-13-22-MW-1	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.161	0.258	0.515	48.7	NA	B	EB	B	48.7 B	1.70
SGSA	1226365	10-13-22-MW-1	Ground_Water	8270DSIM	*Phenanthrene*	85-01-8	µg/L	0.00799	0.0129	0.0258	1.93	NA	B	EB	B	1.93 B	170
SGSA	1226365	10-13-22-MW-2	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.00788	0.0127	0.0253	0.0259	NA	B	EB	B	0.0259 B	1.70
SGSA	1226365	10-13-22-MW-3	Ground_Water	8260D	*Toluene*	108-88-3	µg/L	0.310	0.500	1.00	3.30	NA	B	EB	B	3.30 B	1100
SGSA	1226365	10-13-22-MW-3	Ground_Water	8270DSIM	*1-Methylnaphthalene*	90-12-0	µg/L	0.00374	0.00630	0.0126	1.98	NA	B	EB	B	1.98 B	11.0
SGSA	1226365	10-13-22-MW-3	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.00374	0.00630	0.0126	0.465	NA	B	EB	B	0.465 B	36.0
SGSA	1226365	10-13-22-MW-3	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.0788	0.127	0.253	17.4	NA	B	EB	B	17.4 B	1.70
SGSA	1226365	10-13-22-MW-3	Ground_Water	8270DSIM	*Phenanthrene*	85-01-8	µg/L	0.00783	0.0127	0.0253	0.290	NA	B	EB	B	0.290 B	170
SGSA	1226365	10-13-22-MW-4	Ground_Water	8260D	*1,2,4-Trimethylbenzene*	95-63-6	µg/L	0.310	0.500	1.00	11.6	NA	J+	SURR_%R	J+	11.6 J+	56.0
SGSA	1226365	10-13-22-MW-4	Ground_Water	8260D	*1,3,5-Trimethylbenzene*	108-67-8	µg/L	0.310	0.500	1.00	98.6	NA	J+	SURR_%R	J+	98.6 J+	60.0
SGSA	1226365	10-13-22-MW-4	Ground_Water	8260D	*4-Isopropyltoluene*	99-87-6	µg/L	0.310	0.500	1.00	4.65	NA	J+	SURR_%R	J+	4.65 J+	None
SGSA	1226365	10-13-22-MW-4	Ground_Water	8260D	*Naphthalene*	91-20-3	µg/L	0.310	0.500	1.00	162	NA	J+	SURR_%R	J+	162 J+	1.70

Summary of Qualified Data

Notes:

EB: Equipment blank detection
SURR_%R: Surrogate spike percent recovery failure
MB: Method blank detection

QC Flags:

B: The result is considered estimated, biased high, and a potential false-positive detection, due to contamination.
J+: The quantitation is considered estimated, biased high, due to a QC anomaly.

Definitions:

Yellow highlight indicates a result should be used with caution
Light red highlight indicates a result was flagged for rejection
µg/L: micrograms per liter
SDG: sample delivery group
CAS: Chemical Abstract Service registry number
DL: detection limit
LOD: limit of detection
LOQ: limit of quantitation
QC: quality control
ND/U: non-detect
NA: not applicable

PAL Sources:

Ground_Water ADEC Table C GCL: ADEC 18 AAC 75.345 Table C Groundwater Cleanup Levels

Table 1 - Summary of Qualified Data																	
Lab	SDG	Client_Sample_ID	Matrix	Method	Analyte	CAS	Units	DL	LOD	LOQ	Result	Lab Flag	QC Flags	Note	Final QC Flag	Final Qualified Result	PAL
SGSA	1226365	10-13-22-MW-4	Ground_Water	8260D	*n-Propylbenzene*	103-65-1	µg/L	0.310	0.500	1.00	0.570	J	J+	SURR_%R	J+	0.570 J+	660
SGSA	1226365	10-13-22-MW-4	Ground_Water	8260D	*tert-Butylbenzene*	98-06-6	µg/L	0.310	0.500	1.00	0.700	J	J+	SURR_%R	J+	0.700 J+	690
SGSA	1226365	10-13-22-MW-4	Ground_Water	8260D	*Toluene*	108-88-3	µg/L	0.310	0.500	1.00	1.76	NA	B	EB	B	1.76 B	1100
SGSA	1226365	10-13-22-MW-4	Ground_Water	8270DSIM	*1-Methylnaphthalene*	90-12-0	µg/L	0.0747	0.127	0.253	13.6	NA	B	EB	B	13.6 B	11.0
SGSA	1226365	10-13-22-MW-4	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.0747	0.127	0.253	7.93	NA	B	EB	B	7.93 B	36.0
SGSA	1226365	10-13-22-MW-4	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.158	0.253	0.505	27.7	NA	B	EB	B	27.7 B	1.70
SGSA	1226365	10-13-22-MW-4	Ground_Water	8270DSIM	*Phenanthrene*	85-01-8	µg/L	0.157	0.253	0.505	0.300	J	B	EB	B	0.300 J B	170
SGSA	1226365	10-14-22-MW-5	Ground_Water	8270DSIM	*1-Methylnaphthalene*	90-12-0	µg/L	0.00379	0.00640	0.0128	0.00868	J	B	EB	B	0.00868 J B	11.0
SGSA	1226365	10-14-22-MW-5	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.00379	0.00640	0.0128	0.00849	J	B	EB	B	0.00849 J B	36.0
SGSA	1226365	10-14-22-MW-5	Ground_Water	8270DSIM	*Fluoranthene*	206-44-0	µg/L	0.00379	0.00640	0.0128	0.00985	J	B	MB	B	0.00985 J B	260
SGSA	1226365	10-14-22-MW-5	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.00800	0.0128	0.0256	0.0233	J	B	EB	B	0.0233 J B	1.70
SGSA	1226365	10-14-22-MW-5	Ground_Water	8270DSIM	*Phenanthrene*	85-01-8	µg/L	0.00795	0.0128	0.0256	0.0166	J	B,B	EB,MB	B	0.0166 J B	170
SGSA	1226365	10-13-22-MW-6	Ground_Water	8270DSIM	*1-Methylnaphthalene*	90-12-0	µg/L	0.00381	0.00645	0.0129	0.0268	NA	B	EB	B	0.0268 B	11.0
SGSA	1226365	10-13-22-MW-6	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.00381	0.00645	0.0129	0.0117	J	B	EB	B	0.0117 J B	36.0
SGSA	1226365	10-13-22-MW-6	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.00804	0.0129	0.0258	0.241	NA	B	EB	B	0.241 B	1.70
SGSA	1226365	10-13-22-MW-6	Ground_Water	8270DSIM	*Phenanthrene*	85-01-8	µg/L	0.00799	0.0129	0.0258	0.0736	NA	B	EB	B	0.0736 B	170
SGSA	1226365	10-13-22-MW-10R	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.00385	0.00650	0.0130	0.00435	J	B	EB	B	0.00435 J B	36.0
SGSA	1226365	10-13-22-MW-10R	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.00813	0.0130	0.0260	0.00917	J	B	EB	B	0.00917 J B	1.70
SGSA	1226365	10-14-22-MW-11	Ground_Water	8270DSIM	*1-Methylnaphthalene*	90-12-0	µg/L	0.00378	0.00640	0.0128	0.00438	J	B	EB	B	0.00438 J B	11.0
SGSA	1226365	10-14-22-MW-11	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.00378	0.00640	0.0128	0.00409	J	B	EB	B	0.00409 J B	36.0
SGSA	1226365	10-14-22-MW-11	Ground_Water	8270DSIM	*Fluoranthene*	206-44-0	µg/L	0.00378	0.00640	0.0128	0.00484	J	B	MB	B	0.00484 J B	260
SGSA	1226365	10-13-22-MW-14	Ground_Water	8270DSIM	*1-Methylnaphthalene*	90-12-0	µg/L	0.00374	0.00630	0.0126	0.00612	J	B	EB	B	0.00612 J B	11.0
SGSA	1226365	10-13-22-MW-14	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.00374	0.00630	0.0126	0.00492	J	B	EB	B	0.00492 J B	36.0
SGSA	1226365	10-13-22-MW-14	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.00788	0.0127	0.0253	0.0120	J	B	EB	B	0.0120 J B	1.70
SGSA	1226365	10-14-22-MW-15	Ground_Water	8270DSIM	*1-Methylnaphthalene*	90-12-0	µg/L	0.00372	0.00630	0.0126	0.908	NA	B	EB	B	0.908 B	11.0
SGSA	1226365	10-14-22-MW-15	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.00372	0.00630	0.0126	0.0133	NA	B	EB	B	0.0133 B	36.0
SGSA	1226365	10-14-22-MW-15	Ground_Water	8270DSIM	*Fluoranthene*	206-44-0	µg/L	0.00372	0.00630	0.0126	0.00497	J	B	MB	B	0.00497 J B	260
SGSA	1226365	10-14-22-MW-15	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.00784	0.0126	0.0251	1.89	NA	B	EB	B	1.89 B	1.70

Table 1 - Summary of Qualified Data																	
Lab	**SDG**	**Client_Sample_ID**	**Matrix**	**Method**	**Analyte**	**CAS**	**Units**	**DL**	**LOD**	**LOQ**	**Result**	**Lab Flag**	**QC Flags**	**Note**	**Final QC Flag**	**Final Qualified Result**	**PAL**
SGSA	1226365	10-14-22-MW-15	Ground_Water	8270DSIM	*Phenanthrene*	85-01-8	µg/L	0.00779	0.0126	0.0251	0.0232	J	B,B	EB,MB	B	0.0232 J B	170
SGSA	1226365	10-13-22-FD-1	Ground_Water	8260D	*Toluene*	108-88-3	µg/L	0.310	0.500	1.00	0.450	J	B	EB	B	0.450 J B	1100
SGSA	1226365	10-13-22-FD-1	Ground_Water	8270DSIM	*1-Methylnaphthalene*	90-12-0	µg/L	0.0763	0.129	0.258	5.70	NA	B	EB	B	5.70 B	11.0
SGSA	1226365	10-13-22-FD-1	Ground_Water	8270DSIM	*2-Methylnaphthalene*	91-57-6	µg/L	0.0763	0.129	0.258	3.98	NA	B	EB	B	3.98 B	36.0
SGSA	1226365	10-13-22-FD-1	Ground_Water	8270DSIM	*Naphthalene*	91-20-3	µg/L	0.161	0.258	0.515	44.8	NA	B	EB	B	44.8 B	1.70
SGSA	1226365	10-13-22-FD-1	Ground_Water	8270DSIM	*Phenanthrene*	85-01-8	µg/L	0.00799	0.0129	0.0258	1.68	NA	B	EB	B	1.68 B	170

Analytical Sensitivity Summary

2022 Nenana Groundwater Monitoring

Data Quality Assessment

Table 2 - Analytical Sensitivity Summary													
SDG	**Client Sample ID**	**Matrix**	**Method**	**Analyte**	**CAS**	**Units**	**DL**	**LOD**	**LOQ**	**Result**	**Lab_Flags**	**PAL**	**PAL Source**
1226365	10-13-22-MW-1	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL
1226365	10-13-22-MW-2	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL
1226365	10-13-22-MW-3	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL
1226365	10-13-22-MW-4	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL
1226365	10-13-22-MW-4	Ground_Water	8270DSIM	*Indeno(1,2,3-cd)pyrene*	193-39-5	µg/L	0.0747	0.127	0.253	ND	None	0.190000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*1,1,1,2-Tetrachloroethane*	630-20-6	µg/L	3.00	5.00	10.0	ND	None	5.700000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*1,1,2,2-Tetrachloroethane*	79-34-5	µg/L	3.00	5.00	10.0	ND	None	0.760000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*1,1,2-Trichloroethane*	79-00-5	µg/L	2.40	4.00	8.00	ND	None	0.410000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*1,2,3-Trichlorobenzene*	87-61-6	µg/L	6.20	10.0	20.0	ND	None	7.000000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	6.20	10.0	20.0	ND	None	0.007500	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*1,2,4-Trichlorobenzene*	120-82-1	µg/L	6.20	10.0	20.0	ND	None	4.000000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*1,2-Dibromoethane*	106-93-4	µg/L	0.360	0.750	1.50	ND	None	0.075000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*1,2-Dichloropropane*	78-87-5	µg/L	6.20	10.0	20.0	ND	None	8.200000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*1,4-Dichlorobenzene*	106-46-7	µg/L	3.00	5.00	10.0	ND	None	4.800000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*2-Hexanone*	591-78-6	µg/L	62.0	100	200	ND	None	38.000000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Bromodichloromethane*	75-27-4	µg/L	3.00	5.00	10.0	ND	None	1.300000	ADEC Table C GCL

Analytical Sensitivity Summary

Definitions:

Grey highlight indicates the result LOD exceeds the PAL
µg/L: micrograms per liter
SDG: sample delivery group
CAS: Chemical Abstract Service registry number
DL: detection limit
LOD: limit of detection
LOQ: limit of quantitation
QC: quality control
ND/U: non-detect
NA: not applicable
PAL: project action limit
ADEC: Alaska Department of Environmental Conservation
AAC: Alaska Administrative Code

PAL Sources:

Ground_Water ADEC Table C GCL: ADEC 18 AAC 75.345 Table C Groundwater Cleanup Levels

Table 2 - Analytical Sensitivity Summary													
SDG	**Client Sample ID**	**Matrix**	**Method**	**Analyte**	**CAS**	**Units**	**DL**	**LOD**	**LOQ**	**Result**	**Lab_Flags**	**PAL**	**PAL Source**
1226365	10-14-22-MW-5	Ground_Water	8260D	*Bromomethane*	74-83-9	µg/L	60.0	60.0	120	ND	None	7.500000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Carbon tetrachloride*	56-23-5	µg/L	6.20	10.0	20.0	ND	None	4.600000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Chloroform*	67-66-3	µg/L	6.20	10.0	20.0	ND	None	2.200000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Dibromochloromethane*	124-48-1	µg/L	3.00	5.00	10.0	ND	None	8.700000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Dibromomethane*	74-95-3	µg/L	6.20	10.0	20.0	ND	None	8.300000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Ethylbenzene*	100-41-4	µg/L	6.20	10.0	20.0	ND	None	15.000000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Hexachlorobutadiene*	87-68-3	µg/L	6.20	10.0	20.0	ND	None	1.400000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Methylene chloride*	75-09-2	µg/L	62.0	100	200	ND	None	110.000000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Methyl-tert-butyl ether (MTBE)*	1634-04-4	µg/L	62.0	100	200	ND	None	140.000000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Naphthalene*	91-20-3	µg/L	6.20	10.0	20.0	ND	None	1.700000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Trichloroethene (TCE)*	79-01-6	µg/L	6.20	10.0	20.0	ND	None	2.800000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	8260D	*Vinyl Chloride*	75-01-4	µg/L	1.00	1.50	3.00	ND	None	0.190000	ADEC Table C GCL
1226365	10-14-22-MW-5	Ground_Water	CALC	*1,3-Dichloropropene (Total)*	542-75-6	µg/L	9.20	15.0	30.0	ND	None	4.700000	ADEC Table C GCL
1226365	10-13-22-MW-6	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL
1226365	10-13-22-MW-10R	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL
1226365	10-14-22-MW-11	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL
1226365	10-13-22-MW-14	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL
1226365	10-14-22-MW-15	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL
1226365	10-13-22-FD-1	Ground_Water	8260D	*1,2,3-Trichloropropane*	96-18-4	µg/L	0.310	0.500	1.00	ND	None	0.007500	ADEC Table C GCL

Laboratory Data Review Checklist

Completed By:

Leslie Brooks

Title:

Environmental Scientist

Date:

December 09, 2022

Consultant Firm:

Arctic Data Services, LLC

Laboratory Name:

SGS North America, Inc. - Anchorage, AK

Laboratory Report Number:

1226365

Laboratory Report Date:

November 10, 2022

CS Site Name:

Crowley Nenana Fuel Terminal - Header Areas & Rail Line / Middle Tank Farm

ADEC File Number:

110.38.010 & 110.38.011

Hazard Identification Number:

25655 & 25654

1.) Laboratory

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

(●) Yes ( ) No ( ) N/A

Comments:

All samples were received and analyzed by SGS North America, Inc. - Anchorage, AK (SGS Anchorage). The laboratory is ADEC CS approved for the analyses performed, where required.

1.b) If samples were transferred to another 'network' laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

( ) Yes ( ) No (●) N/A

Comments:

No samples were transferred to or analyzed by another laboratory.

2.) Chain of Custody

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

(●) Yes ( ) No ( ) N/A

Comments:

2.b) Correct analyses requested?

(●) Yes ( ) No ( ) N/A

Comments:

3.) Laboratory Sample Receipt Documentation

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

(●) Yes ( ) No ( ) N/A

Comments:

Samples were received within the acceptable temperature range.

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

(●) Yes ( ) No ( ) N/A

Comments:

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

(●) Yes ( ) No ( ) N/A

Comments:

Samples were received in good condition.

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

( ) Yes ( ) No (●) N/A

Comments:

There were no sample receiving discrepancies.

3.e) Data quality or usability affected?

Data quality or usability were not affected.

4.) Case Narrative

4.a) Present and understandable?

(●) Yes ( ) No ( ) N/A

Comments:

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

(●) Yes ( ) No ( ) N/A

Comments:

The laboratory report case narrative documented a number of QC anomalies which are addressed in the following relevant sections of this checklist.

4.c) Were all corrective actions documented?

(●) Yes ( ) No ( ) N/A

Comments:

The laboratory report case narrative documented the following corrective actions:
10-13-22-MW-2, 10-13-22-MW-6; 8260D - Carryover for naphthalene was suspected for this sample. Sample was re-analyzed outside of hold time and results confirm carryover in the original results. The in-hold data is reported.
10-13-22-MW-4; 8270D SIM - The LOQs are elevated due to sample dilution. The sample was diluted due to matrix interference with the internal standard.

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

The case narrative makes no comments concerning data quality or usability.

5.) Sample Results

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

(●) Yes ( ) No ( ) N/A

Comments:

5.b) All applicable holding times met?

(●) Yes ( ) No ( ) N/A

Comments:

5.c) All soils reported on a dry weight basis?

○ Yes ○ No ◉ N/A

Comments:

No soil samples were analyzed in this work order.

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

○ Yes ◉ No ○ N/A

Comments:

LOQs and LODs for non-detect results were compared to the following project action limits (PALs):
ADEC 18 AAC 75.345 Table C Groundwater Cleanup Levels for groundwater samples.

Analytical sensitivity is considered adequate if the LOD is below the PAL.
The following analytes had LODs exceeding the PAL for the groundwater matrix and 8260D method: 1,1,2,2-tetrachloroethane (1 sample), 1,1,2-trichloroethane (1 sample), 1,2,3-trichlorobenzene (1 sample), 1,2,3-trichloropropane (11 samples), 1,2,4-trichlorobenzene (1 sample), 1,2-dibromoethane (1 sample), 1,2-dichloropropane (1 sample), 1,4-dichlorobenzene (1 sample), 2-hexanone (1 sample), bromodichloromethane (1 sample), bromomethane (1 sample), carbon tetrachloride (1 sample), chloroform (1 sample), dibromomethane (1 sample), hexachlorobutadiene (1 sample), naphthalene (1 sample), trichloroethene (tce) (1 sample), vinyl chloride (1 sample).
The following analytes had LODs exceeding the PAL for the groundwater matrix and CALC method: 1,3-dichloropropene (total) (1 sample).

Refer to the Analytical Sensitivity Summary table (attached) for a full list of non-detect results where the LOD and/or LOQ exceeded the PAL.

5.e) Data quality or usability affected?

Data quality was not affected. Non-detect results where the LOD exceeds the PAL cannot be used to rule out the potential presence of the analyte at concentrations above the PAL for the sampled location.

6.) QC Samples

Method/Lab Blank

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

◉ Yes ○ No ○ N/A

Comments:

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

○ Yes ◉ No ○ N/A

Comments:

Five analytes were detected in method blanks associated with field samples. Refer to the table below for details.

Method	Batch	Analyte	Units	LOQ	Concentration
8270DSIM	XXX47216	Benzo(b)fluoranthene	ug/L	0.05	0.0164
8270DSIM	XXX47216	Fluoranthene	ug/L	0.05	0.0173
8270DSIM	XXX47216	Benzo(k)fluoranthene	ug/L	0.05	0.0162
8270DSIM	XXX47216	Benzo(a)anthracene	ug/L	0.05	0.0170
8270DSIM	XXX47216	Phenanthrene	ug/L	0.10	0.0313

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

Project-sample results are considered affected if the analyte in question is detected within ten times (10X) the associated method blank concentration. Five results were considered affected by method blank contamination. Refer to the table below for details.

Sample ID	Method	Analyte	Units	Result	LOQ	QC Flag
10-14-22-MW-11	8270DSIM	Fluoranthene	ug/L	0.00484	0.0128	B
10-14-22-MW-15	8270DSIM	Fluoranthene	ug/L	0.00497	0.0126	B
10-14-22-MW-5	8270DSIM	Fluoranthene	ug/L	0.00985	0.0128	B
10-14-22-MW-15	8270DSIM	Phenanthrene	ug/L	0.02320	0.0251	B
10-14-22-MW-5	8270DSIM	Phenanthrene	ug/L	0.01660	0.0256	B

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

(●) Yes ( ) No ( ) N/A

Comments:

Affected results were qualified with "B" flags, indicating the results are estimated with a high bias and are potential false-positive detections due to laboratory-based sample contamination.

6.a.v) Data quality or usability affected?

Data quality was affected as described above. Refer to the data quality assessment for discussion of potential impacts to data usability.

Laboratory Control Sample/Duplicate (LCS/LCSD)

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

◉ Yes ○ No ○ N/A

Comments:

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

◉ Yes ○ No ○ N/A

Comments:

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

◉ Yes ○ No ○ N/A

Comments:

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

◉ Yes ○ No ○ N/A

Comments:

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

There were no LCS/LCSD recovery failures. There were no LCSD RPD failures.

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

○ Yes ○ No ◉ N/A

Comments:

No results were affected by LCS/LCSD recovery or RPD failures.

6.b.vii) Data quality or usability affected?

Data quality and usability were not affected.

Matrix Spike/Duplicate (MS/MSD)

Note: Select N/A if MS/MSDs are not required for the project.

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

○ Yes ○ No ◉ N/A

Comments:

Project-specific MS/MSD analysis was not required for the organic methods performed in this work order.

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

○ Yes ○ No ◉ N/A

Comments:

Project-specific MS/MSD analysis was not required for the inorganic methods performed in this work order. However, the lab performed MS/MSD analysis on project sample '10-13-22-MW-1' for batch QC.

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

◉ Yes ○ No ○ N/A

Comments:

There were no MS/MSD recovery failures.

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

◉ Yes ○ No ○ N/A

Comments:

There were no MSD RPD failures.

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

No results were affected by MS/MSD recovery failures.

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

○ Yes ○ No ◉ N/A

Comments:

No results were affected by MS/MSD recovery or RPD failures.

6.c.vii) Data quality or usability affected?

Data quality and usability were not affected.

Surrogates

Note: Surrogates for organic analyses only or Isotope Dilution Analytes (IDA) for isotope dilution methods

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

◉ Yes ○ No ○ N/A

Comments:

6.d.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 ◉ No ○ N/A

Comments:

There were three surrogate recovery failures identified in project samples. Refer to the table below for details.

lab_id	Method	Sample ID	Surrogate	DF	%R	LCL	UCL	Recovery
SGSA	8270DSIM	10-13-22-MW-4	2-Methylnaphthalene-d10	20	711	38	100	High (Heavy Dilution)
SGSA	8260D	10-13-22-MW-4	4-Bromofluorobenzene	1	117	85	114	High
SGSA	8270DSIM	10-13-22-MW-4	Fluoranthene-d10	20	29	30	111	Low (Heavy Dilution)

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

(●) Yes ( ) No ( ) N/A

Comments:

There were six results affected by surrogate recovery failures. Project-sample results are not considered affected by surrogate recovery failures where the sample was heavily diluted (DF > 10). Project-sample results are not considered affected if the associated surrogate was recovered high and the associated analyte was non-detect.
Results affected by high surrogate recovery failures (Recovery > UCL) are qualified 'J+' as estimated with a high bias.

Method	Sample ID	Analyte	Units	Result	QC Flag
8260D	10-13-22-MW-4	1,2,4-Trimethylbenzene	ug/L	11.6	J+
8260D	10-13-22-MW-4	1,3,5-Trimethylbenzene	ug/L	98.6	J+
8260D	10-13-22-MW-4	4-Isopropyltoluene	ug/L	4.65	J+
8260D	10-13-22-MW-4	Naphthalene	ug/L	162	J+
8260D	10-13-22-MW-4	n-Propylbenzene	ug/L	0.570 J	J+
8260D	10-13-22-MW-4	tert-Butylbenzene	ug/L	0.700 J	J+

6.d.iv) Data quality or usability affected?

Data quality is affected as described above. Refer to the data quality assessment for discussion of potential impacts to data usability.

Trip Blanks

Note: Only required for volatile analyses

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

(●) Yes ( ) No ( ) N/A

Comments:

Trip blank sample 'Trip Blank' was submitted alongside field samples for the following volatile organic analyses: 8260D, AK101.

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

(●) Yes ( ) No ( ) N/A

Comments:

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

(●) Yes ( ) No ( ) N/A

Comments:

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

No analytes were detected in the trip blank sample. No sample results were affected.

6.e.v) Data quality or usability affected?

Data quality and usability were not affected.

Field Duplicate(s) or Replicates

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

(●) Yes ( ) No ( ) N/A

Comments:

One field duplicate was collected and submitted, compared to ten primary samples (10% collection frequency), meeting or exceeding the minimum required collection frequency. Refer to the table below for a full list of field duplicates and associated primary samples.

Sample	Association Type	Associated Samples
10-13-22-FD-1	Field_Duplicate	10-13-22-MW-1

6.f.ii) Submitted blind to lab?

○ Yes ◉ No ○ N/A

Comments:

The duplicate sample, 10-13-22-FD-1, was named using an identifier indicating the sample was a duplicate. Samples should be named without these identifiers for future events, to ensure field duplicates are blind to the laboratory.

6.f.iii) Precision – All relative percent differences (RPD) less than specified project objectives? (Recommended: 30% Water/Air, 50% Soil)

◉ Yes ○ No ○ N/A

Comments:

RPDs for each field duplicate sample pair were calculated and compared to the ADEC recommended measurement quality objectives (MQO) for the sample medium, where an analyte was quantitatively detected (above the LOQ) in at least one sample. There were no field duplicate sample pair RPD failures identified.

6.f.iv) Data quality or usability affected?

Data quality and usability were not affected.

Decontamination/Rinsate or Equipment Blanks

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

◉ Yes ○ No ○ N/A

Comments:

One sample was submitted as an equipment blank (EB) to check for potential cross-contamination of samples from reusable sampling equipment. Refer to the table below for a list of EBs and associated field samples.

Matrix	EB Sample	Associated Samples	Collection Datetime
Ground_Water	10-13-22-RB-1	10-13-22-FD-1, 10-13-22-MW-1, 10-13-22-MW-10R, 10-13-22-MW-14, 10-13-22-MW-2, 10-13-22-MW-3, 10-13-22-MW-4, 10-13-22-MW-6, 10-14-22-MW-11, 10-14-22-MW-15, 10-14-22-MW-5	2022-10-13 18:00:00

6.g.ii) All results less than LOQ and project specified objectives?

○ Yes ◉ No ○ N/A

Comments:

Five analytes were detected in the equipment blank sample. Refer to the table below for a full list of detections.

Matrix	Method	EB	QC Type	Analyte	EB Result	LOQ
Ground_Water	8260D	10-13-22-RB-1	Rinsate_Blank	Toluene	0.55000	1.0000
Ground_Water	8270DSIM	10-13-22-RB-1	Rinsate_Blank	1-Methylnaphthalene	0.00654	0.0126
Ground_Water	8270DSIM	10-13-22-RB-1	Rinsate_Blank	2-Methylnaphthalene	0.00859	0.0126
Ground_Water	8270DSIM	10-13-22-RB-1	Rinsate_Blank	Naphthalene	0.02350	0.0253
Ground_Water	8270DSIM	10-13-22-RB-1	Rinsate_Blank	Phenanthrene	0.01400	0.0253

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

Results for samples associated with the equipment blank sample are only considered affected if the analyte in question is detected within 10 times (10X) the associated equipment/decontamination blank concentration. 40 associated project-sample results were detected within the 10X threshold. Professional judgement was used to determine if data quality was affected, dependent upon relative collection times and concentrations of temporally proximal associated samples. The EB corresponds to all groundwater samples submitted in this SDG. Refer to the table for a full list of potentially affected results and qualifiers.

Method	Sample ID	Analyte	Units	LOQ	Result	QC_Flag
8260D	10-13-22-FD-1	Toluene	ug/L	1.0000	0.45000	B
8270DSIM	10-13-22-FD-1	Phenanthrene	ug/L	0.0258	1.68000	B
8270DSIM	10-13-22-FD-1	1-Methylnaphthalene	ug/L	0.2580	5.70000	B
8270DSIM	10-13-22-FD-1	Naphthalene	ug/L	0.5150	44.80000	B
8270DSIM	10-13-22-FD-1	2-Methylnaphthalene	ug/L	0.2580	3.98000	B
8270DSIM	10-13-22-MW-10R	Naphthalene	ug/L	0.0260	0.00917	B
8270DSIM	10-13-22-MW-10R	2-Methylnaphthalene	ug/L	0.0130	0.00435	B
8270DSIM	10-13-22-MW-6	Phenanthrene	ug/L	0.0258	0.07360	B
8270DSIM	10-13-22-MW-6	1-Methylnaphthalene	ug/L	0.0129	0.02680	B
8270DSIM	10-13-22-MW-6	Naphthalene	ug/L	0.0258	0.24100	B
8270DSIM	10-13-22-MW-6	2-Methylnaphthalene	ug/L	0.0129	0.01170	B
8270DSIM	10-13-22-MW-2	Naphthalene	ug/L	0.0253	0.02590	B
8260D	10-13-22-MW-1	Toluene	ug/L	1.0000	0.45000	B
8270DSIM	10-13-22-MW-1	Phenanthrene	ug/L	0.0258	1.93000	B
8270DSIM	10-13-22-MW-1	1-Methylnaphthalene	ug/L	0.2580	6.51000	B
8270DSIM	10-13-22-MW-1	Naphthalene	ug/L	0.5150	48.70000	B
8270DSIM	10-13-22-MW-1	2-Methylnaphthalene	ug/L	0.2580	4.49000	B
8260D	10-13-22-MW-4	Toluene	ug/L	1.0000	1.76000	B
8270DSIM	10-13-22-MW-4	Phenanthrene	ug/L	0.5050	0.30000	B
8270DSIM	10-13-22-MW-4	1-Methylnaphthalene	ug/L	0.2530	13.60000	B
8270DSIM	10-13-22-MW-4	Naphthalene	ug/L	0.5050	27.70000	B
8270DSIM	10-13-22-MW-4	2-Methylnaphthalene	ug/L	0.2530	7.93000	B
8260D	10-13-22-MW-3	Toluene	ug/L	1.0000	3.30000	B
8270DSIM	10-13-22-MW-3	Phenanthrene	ug/L	0.0253	0.29000	B
8270DSIM	10-13-22-MW-3	1-Methylnaphthalene	ug/L	0.0126	1.98000	B
8270DSIM	10-13-22-MW-3	Naphthalene	ug/L	0.2530	17.40000	B
8270DSIM	10-13-22-MW-3	2-Methylnaphthalene	ug/L	0.0126	0.46500	B
8270DSIM	10-13-22-MW-14	1-Methylnaphthalene	ug/L	0.0126	0.00612	B
8270DSIM	10-13-22-MW-14	Naphthalene	ug/L	0.0253	0.01200	B

Method	Sample ID	Analyte	Units	LOQ	Result	QC_Flag
8270DSIM	10-13-22-MW-14	2-Methylnaphthalene	ug/L	0.0126	0.00492	B
8270DSIM	10-14-22-MW-15	Phenanthrene	ug/L	0.0251	0.02320	B
8270DSIM	10-14-22-MW-15	1-Methylnaphthalene	ug/L	0.0126	0.90800	B
8270DSIM	10-14-22-MW-15	Naphthalene	ug/L	0.0251	1.89000	B
8270DSIM	10-14-22-MW-15	2-Methylnaphthalene	ug/L	0.0126	0.01330	B
8270DSIM	10-14-22-MW-5	Phenanthrene	ug/L	0.0256	0.01660	B
8270DSIM	10-14-22-MW-5	1-Methylnaphthalene	ug/L	0.0128	0.00868	B
8270DSIM	10-14-22-MW-5	Naphthalene	ug/L	0.0256	0.02330	B
8270DSIM	10-14-22-MW-5	2-Methylnaphthalene	ug/L	0.0128	0.00849	B
8270DSIM	10-14-22-MW-11	1-Methylnaphthalene	ug/L	0.0128	0.00438	B
8270DSIM	10-14-22-MW-11	2-Methylnaphthalene	ug/L	0.0128	0.00409	B

6.g.iv) Data quality or usability affected?

Affected results are qualified with 'B' flags, indicating the results are estimated with a high bias and may be false-positive detections due to sample cross-contamination. Refer to the Data Quality Assessment for discussion of potential impacts to data usability.

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

7.a) Defined and Appropriate?

○ Yes ○ No ◉ N/A

Comments:

The laboratory qualified estimated results detected between the DL and the LOQ with "J" qualifiers. There were no additional data qualifiers applied by the laboratory.

ATTACHMENT 6

Graphs

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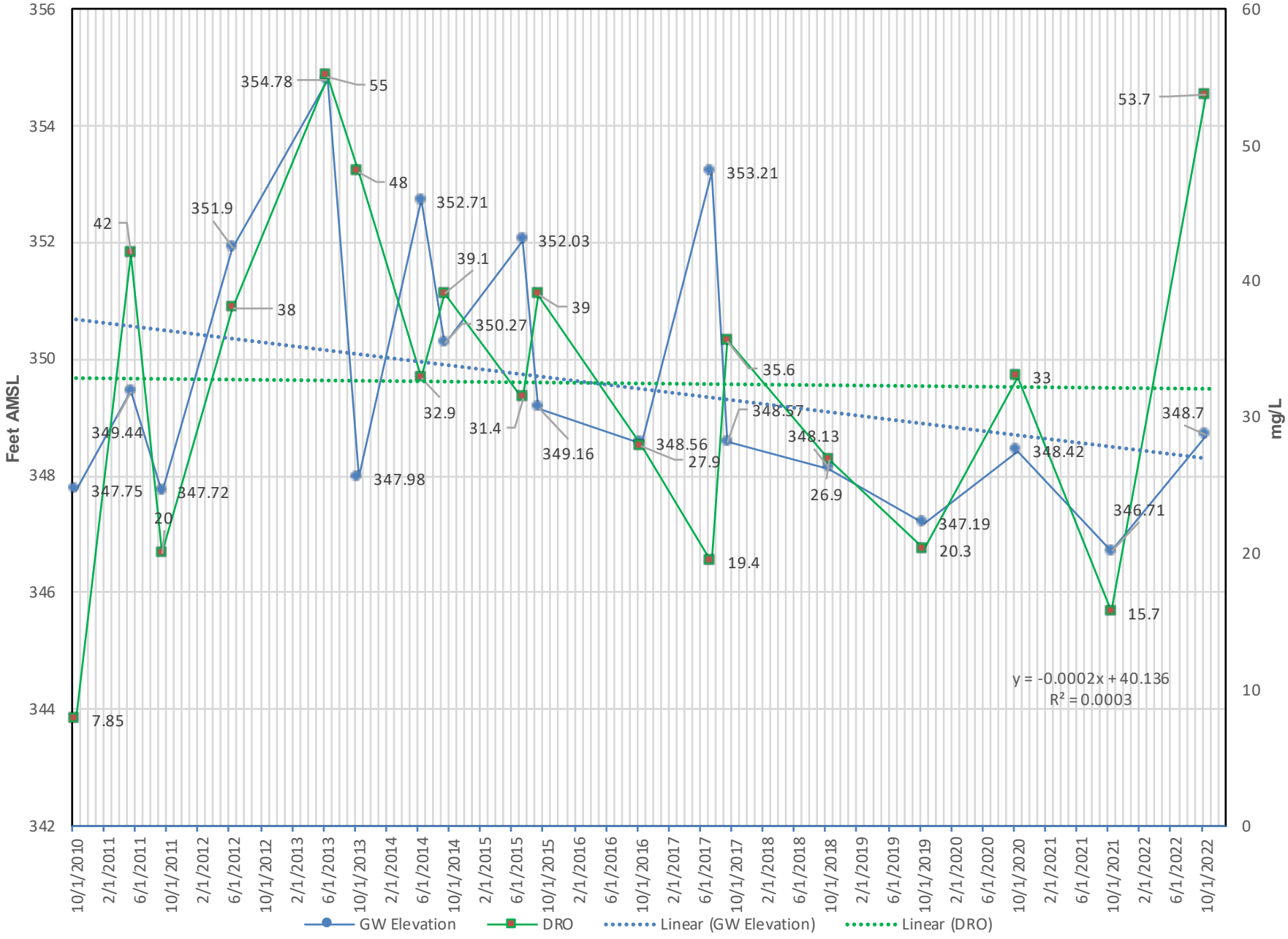
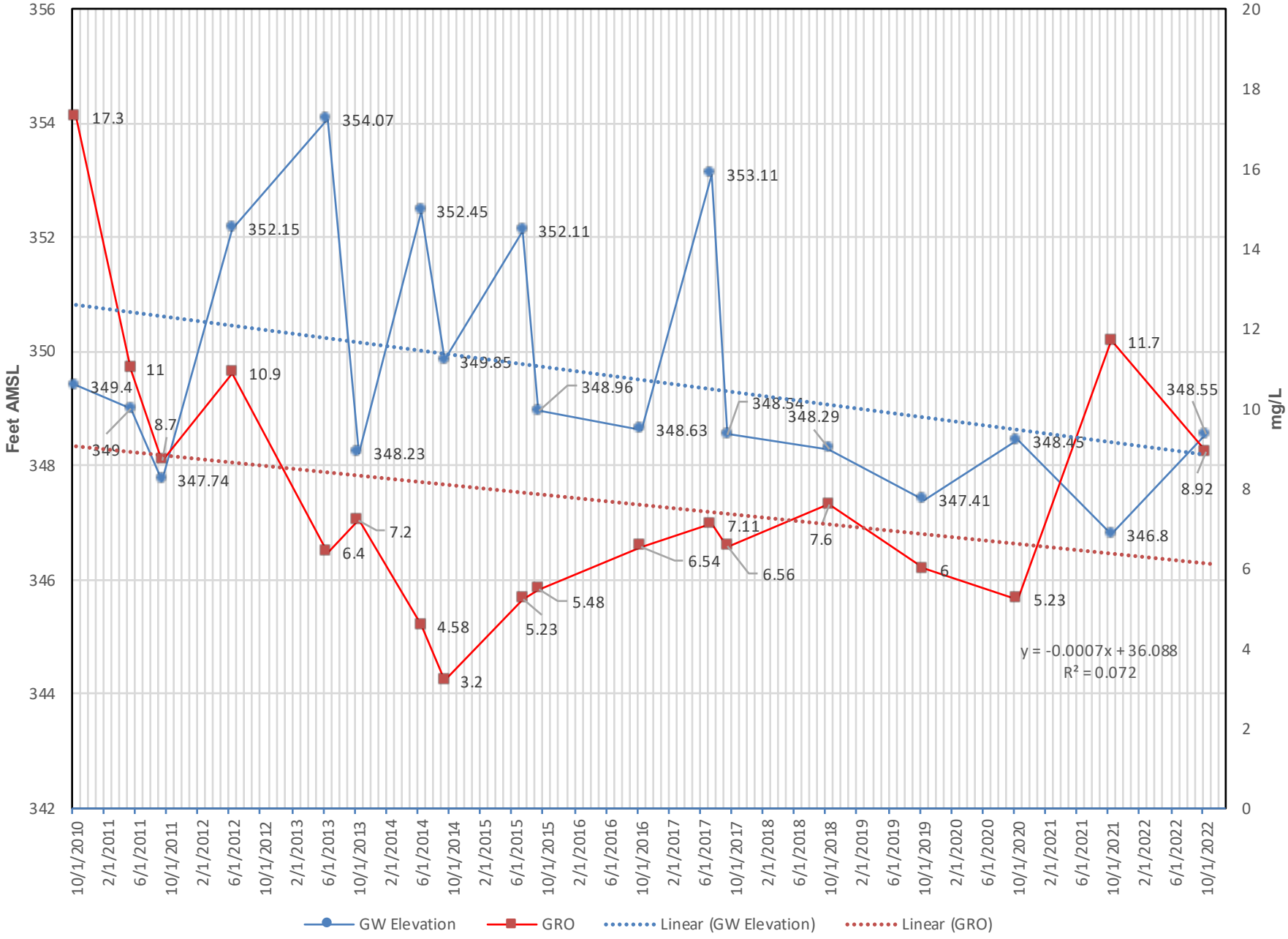
GRAPH 1: MW-4 Water Level vs. DRO Concentrations
Ground Water Monitoring Report – October 2022 Sampling Event
Nenana Header and Rail Line Areas



GRAPH 2: MW-5 Water Level vs. GRO Concentrations
Ground Water Monitoring Report – October 2022 Sampling Event
Nenana Header and Rail Line Areas



ATTACHMENT 7

Mann-Kendall Output

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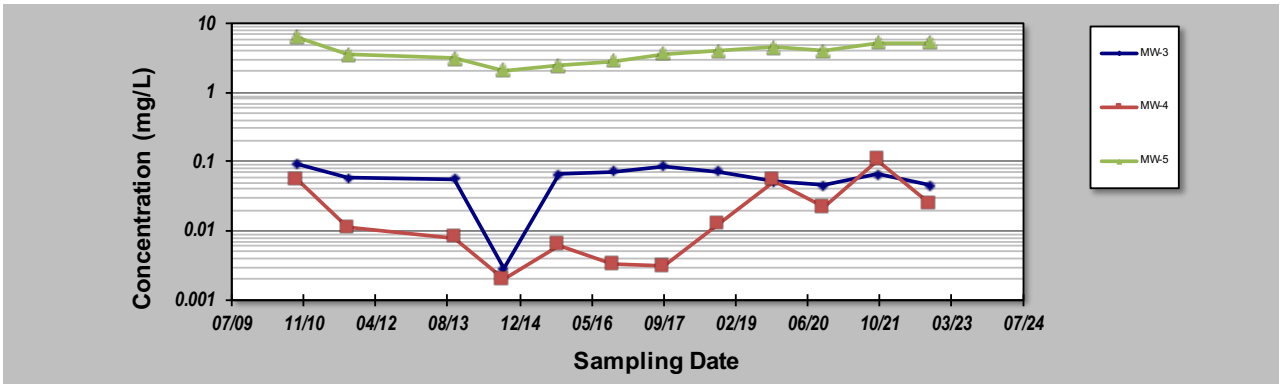
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	21-Dec-22	Job ID:	
Facility Name:	NENANA	Constituent:	Benzene
Conducted By:	DNA Environmental	Concentration Units:	mg/L

Sampling Point ID:	MW-3	MW-4	MW-5				
Sampling Event	Sampling Date	BENZENE CONCENTRATION (mg/L)						
1	10/4/10	0.0927	0.0545	6.27				
2	9/24/11	0.058	0.011	3.5				
3	10/2/13	0.057	0.008	3.1				
4	9/8/14	0.00288	0.00202	2.06				
5	9/23/15	0.0653	0.0063	2.44				
6	10/5/16	0.0733	0.0033	2.85				
7	9/19/17	0.0855	0.00307	3.62				
8	10/11/18	0.0726	0.0127	3.96				
9	10/31/19	0.0515	0.0539	4.51				
10	10/10/20	0.0463	0.0216	4.03				
11	10/21/21	0.0653	0.104	5.2				
12	10/13/22	0.0461	0.0244	5.22				
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.39	1.21	0.32				
Mann-Kendall Statistic (S):		-17	16	28				
Confidence Factor:		86.0%	84.5%	96.9%				
Concentration Trend:		Stable	No Trend	Increasing				



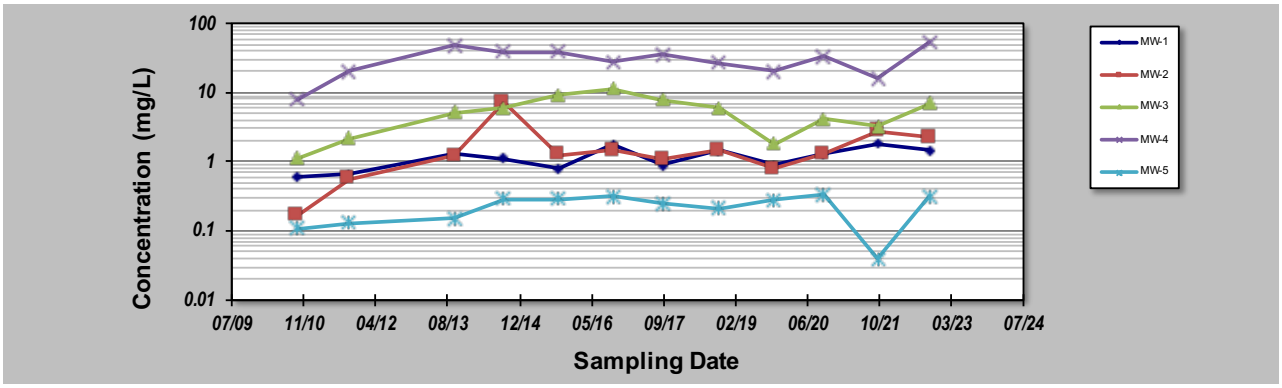
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	21-Dec-22	Job ID:	
Facility Name:	NENANA	Constituent:	DRO
Conducted By:	DNA Environmental	Concentration Units:	mg/L

Sampling Point ID:	MW-1	MW-2	MW-3	MW-4	MW-5		
Sampling Event	Sampling Date	DRO CONCENTRATION (mg/L)						
1	10/4/10	0.604	0.166	1.11	7.85	0.108		
2	9/27/11	0.65	0.57	2.2	20	0.13		
3	10/2/13	1.3	1.2	5.1	48.0	0.15		
4	9/8/14	1.1	7.25	5.94	39.1	0.289		
5	9/23/15	0.788	1.26	9.29	39.0	0.286		
6	10/5/16	1.73	1.44	11.20	27.9	0.315		
7	9/18/17	0.905	1.09	7.88	35.6	0.246		
8	10/10/18	1.460	1.45	6.01	26.9	0.213		
9	10/30/19	0.904	0.797	1.8	20.3	0.278		
10	10/10/20	1.3	1.31	4.19	33	0.337		
11	10/21/21	1.8	2.81	3.19	15.7	0.04		
12	10/13/22	1.47	2.26	6.90	53.7	0.313		
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.35	1.03	0.57	0.44	0.43		
Mann-Kendall Statistic (S):		33	28	10	0	20		
Confidence Factor:		98.7%	96.9%	72.7%	47.3%	90.2%		
Concentration Trend:		Increasing	Increasing	No Trend	Stable	Prob. Increasing		



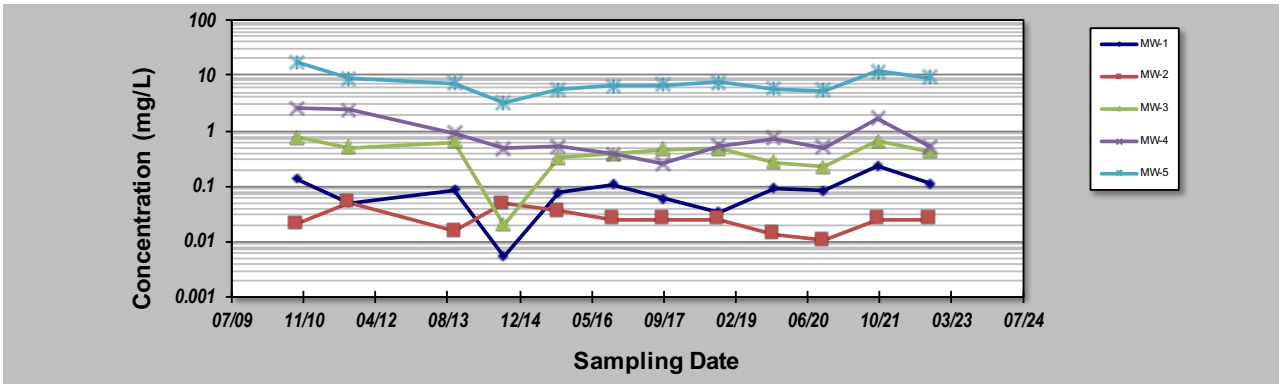
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	21-Dec-22	Job ID:	
Facility Name:	NENANA	Constituent:	GRO
Conducted By:	DNA Environmental	Concentration Units:	mg/L

Sampling Point ID:	MW-1	MW-2	MW-3	MW-4	MW-5		
Sampling Event	Sampling Date	GRO CONCENTRATION (mg/L)						
1	10/4/10	0.134	0.0208	0.770	2.57	17.3		
2	9/27/11	0.05	0.05	0.49	2.4	8.7		
3	10/2/13	0.087	0.0155	0.63	0.92	7.2		
4	9/8/14	0.00535	0.0482	0.0198	0.478	3.2		
5	9/23/15	0.0747	0.0359	0.324	0.512	5.48		
6	10/5/16	0.106	0.025	0.378	0.375	6.54		
7	9/18/17	0.060	0.025	0.451	0.256	6.56		
8	10/10/18	0.035	0.025	0.477	0.53	7.6		
9	10/30/19	0.093	0.0138	0.265	0.718	5.66		
10	10/10/20	0.082	0.0106	0.219	0.505	5.23		
11	10/21/21	0.231	0.025	0.646	1.66	11.7		
12	10/13/22	0.112	0.025	0.423	0.517	8.92		
13								
14								
15								
16								
17								
18								
19								
20								
Coefficient of Variation:		0.64	0.47	0.48	0.84	0.47		
Mann-Kendall Statistic (S):		14	-18	-12	-14	-2		
Confidence Factor:		81.0%	87.5%	77.0%	81.0%	52.7%		
Concentration Trend:		No Trend	Stable	Stable	Stable	Stable		



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.