2021 Groundwater Monitoring Report Revision 1

For

Essential 1 Gas Station (Former Shoreside Texaco)
Mile 100 / 100.7 Seward Highway
Girdwood, Alaska 99587
ADEC File. No. 2105.26.001

Prepared for:

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
555 CORDOVA STREET
ANCHORAGE, ALASKA 99501

Prepared by:

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April 2022

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April 2022

Prepared by:

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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
ADOT&PF	Alaska Department of Transportation and Public Facilites
AK	Alaska Method
bgs	Below ground surface
DRO	Diesel Range Organics
EMI	Environmental Management, Inc.
FSG	Field Sampling Guidance
IDW	Investigation Derived Waste
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
mg/L	Milligrams per liter
PAH	Polycyclic Aromatic Hydrocarbons
PPE	Personal Protective Equipment
QC	Quality Control
QEP	Qualified Environmental Professional
RPD	Relative Percent Difference
SGS	SGS North America
UST	Underground Storage Tank
VOC	Volatile Organic Compounds

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This report describes the annual groundwater monitoring event conducted at the Essential 1 gas station (former Shoreside Texaco) in Girdwood, Alaska, undertaken by Environmental Management, Inc. (EMI) on September 10, 2021.

Groundwater monitoring activities were conducted under EMI's work plan that was approved by the Alaska Department of Environmental Conservation (ADEC) on August 13, 2021. This work was performed under contract with Shoreside Petroleum, Inc., the owner of the site. Previous quarterly sampling events prior to September 2020 were conducted by Tellus, Ltd.

1.0 SITE DESCRIPTION AND BACKGROUND

The site is the Essential 1 gas station (former Shoreside Texaco), which is located at 29383 Seward Highway, Girdwood, Alaska (Mile 100.7); Due to previously identified petroleum contamination the site is an ADEC listed contaminated site, ADEC File No. 2105.26.001.

According to the site chronology listed on the ADEC Contaminated Sites Database, contamination was originally identified at the site during the removal of two gasoline underground storage tanks (UST) in 1995. Additional contamination was identified in 2000 during the removal of a diesel dispenser and associated piping. A release investigation conducted in 2002 identified petroleum-based contamination extending to depths down to 62 feet below ground surface (bgs), in several locations. Between the 2002 release investigation and a 2014 borehole investigation, six monitoring wells were installed at the site. Three of the wells, MW1, MW2, and MW3, represent a deeper aquifer at the site and the total well depths extend down to approximately 80 feet below ground surface (bgs). These three wells have had sufficient water volume and have been monitored on a regular basis since at least 2016; however, the other three wells, MW4a, MW5 and MW6, which represent a shallower aquifer and extend to approximately 50 feet bgs, have had insufficient water for sampling and viable samples have never been collected from them. In 2020 free product was observed in two of the shallow aquifer wells, MW5 and MW6.

Prior to this September 2021 sampling event, sampling has been conducted on a quarterly basis. Gasoline range organics (GRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX) have not been detected in any monitoring event, while diesel range organics (DRO) were only detected above their groundwater cleanup level once, in well MW2 in August 2019 (Table 2). Following EMI's September 2020 sampling event, which again showed no contamination within the deep aquifer, EMI recommended a reduction in the sampling frequency from quarterly to annually. This

sampling event, which is the subject of this report, is the first sampling event under the reduced frequency.

2.0 PROJECT PURPOSE AND OBJECTIVES

The purpose of the groundwater sampling was to collect additional data from the wells in the deeper aquifer, including MW3 which was unable to be located during the September 2020 sampling event, to show that contamination has not migrated to the groundwater in this aquifer. The objectives also included investigating the shallow aquifer wells (MW4a, MW5 and MW6) to determine if free product was still present within the wells and/or to determine if there was sufficient volume for sampling.

3.0 CONTAMINANTS OF CONCERN

The ADEC Contaminated Site's database identifies contamination associated with two gasoline USTs. Due to the age of those former USTs (installed in 1972), leaded gasoline was likely used. Previous investigations included the analyses of constituents typically found in gasoline during the time period including lead, EDB, polyaromatic hydrocarbons (PAH), and 1,2-DCB; none of these contaminants were detected. In addition, GRO and BTEX were analyzed over seven monitoring events between October 2016 and May 2020. GRO and BTEX were not detected and have thus been removed from the sampling program, however the full suite of volatile organic compounds (VOC), including MTBE, had not been analyzed. The constituents of potential concern (COPC) associated with the site as identified in previous investigations include the following petroleum-related compounds: diesel range organics (DRO), VOC (including MTBE), and PAH.

Water samples collected during the field activities compared to the cleanup levels outlined in the following regulations:

- Groundwater: Table C in 18 AAC 75.345, *Oil and Other Hazardous Substances Pollution Control* (November 18, 2021)

4.0 FIELD ACTIVITIES

Field activities were conducted on September 10, 2021. Andy Coulson, ADEC Qualified Environmental Professional (QEP), served as the field lead. Photographs of the field activities are provided in Appendix A. Field notes are included in Appendix B. A figure showing the monitoring well locations is provided as Figure 2.

4.1 Work Plan Variances

The following work plan variances are noted:

- Monitoring well MW3 could not be located using a metal detector and was therefore not sampled. This well was also unable to be located in 2020.

- Free product was observed in wells MW5 and MW6; no laboratory samples were collected from these wells. Free product was also believed present in MW2 and because of this, not sampled (see discussion related to MW2).

- There was insufficient water in well MW4a to collect a sample.

4.2 Groundwater Sampling

Due to insufficient well volume and/or the presence of free product, only one well was sampled during this event, MW1. Monitoring well MW1 was sampled and purged using a submersible pump and low flow methods as presented in the Environmental Protection Agency's 2010 *Low Stress (Low-Flow) Purging and Sampling Procedures for the Collection of Groundwater Samples from Monitoring Wells*. The pump was lowered to draw water from three feet below the water's surface in the well; the screened interval of the well was not reported in previous site documentation. Well MW1 was purged for one hour and twelve minutes prior to sampling. A YSI 556 multi-parameter meter was connected to the sampling apparatus using a flow-through cell and was used to monitor temperature, pH, conductivity, redox potential and dissolved oxygen. The well was purged until three well volumes had been removed. Purge water was collected in five-gallon buckets. The analytical water samples were collected by filling the laboratory-provided, hydrochloric acid-preserved and non-preserved sample containers from the discharge tube of the flow-through cell. Containers for VOC analysis were filled first, followed by containers for PAH analysis, then containers for DRO analysis. Sample containers were immediately placed in a cooler with frozen gel ice after being filled.

As previously stated, only MW1 was sampled during this event, which represents the deeper aquifer. From this well a primary and duplicate sample were collected; these are samples 18190-MW1-091021 and 18190-MW77-091021, respectively.

Of the other two deep aquifer wells, MW2 was not sampled due to the perceived presence of free product in the well (see discussion below regarding this) and MW3 was not sampled due to it being unable to be located, even when using a metal detector.

From the shallow aquifer wells, none were sampled. This is because wells MW5 and MW6 had free product up to 0.2 feet thick present. No sample was collected from well MW4a because there was insufficient water in the well to collect a sample.

4.3 Decontamination Procedures

All equipment was decontaminated between use in different wells and after sampling was complete. Equipment was decontaminated using a three-bucket process where it was first brushed in potable water with Alconox, then rinsed with potable water, and then rinsed with deionized water. Potable water was obtained from the faucet in the gas station building. The flow-through chamber was fully disassembled and all parts and fittings were decontaminated individually. The pump was decontaminated using a brush, and also powered up and briefly ran in water from each decontamination bucket. Long pieces of reusable equipment such as the water level meter and the electrical leader to the pump were fully submerged such that the entire length taken off the roll

during their most recent use was submerged in each stage of decontamination; in addition, this length was also pulled through a brush while in the Alconox and water bucket.

After decontaminating the interface probe after using it in well MW5, sheen was observed on water in the first (water and alconox) bucket. When this happened, the water from all three decontamination buckets was containerized in a different bucket and replaced with new water, and the product interface probe was decontaminated a second time in the new water.

5.0 INVESTIGATIVE DERIVED WASTE MANAGEMENT

Investigation derived waste (IDW) included decontamination water, purge water from well sampling, and disposable personal protective equipment (PPE) and sampling equipment.

Purge and decontamination water, which totaled approximately 15 gallons, were combined into three five-gallon buckets. A Contaminated Media Transport and Treatment or Disposal Approval form has been completed and submitted to ADEC. This request was approved by ADEC on November 11, 2021. The water was disposed of at US Ecology Alaska, LLC, located at 2020 Viking Drive, Anchorage, Alaska 99501 on December 20, 2021. The ADEC approved transport request and the bill of lading are included in Appendix D.

Disposable sampling equipment included nitrile gloves and tubing. These were disposed of as solid waste in the dumpster on site.

6.0 RESULTS

The following describes the results of the 2021 groundwater monitoring activities.

6.1 Surface Observations

The following observations were made of surface conditions at the site during groundwater monitoring on September 10, 2021:

- Well MW3 could not be located. Previously, both EMI and Shoreside personnel searched the area between the store building and AST where figures in previous reports had shown MW3, and where shoreside personnel had observed previous sampling events being conducted. During this event, a metal detector was used to try and locate the well to no avail. (Photo 1)
- In 2020, the Alaska Department of Transportation and Public Facilities (ADOT&PF) had a project ongoing on roads near the site. As part of this project, pavement around well MW4a had been removed, along with its surface monument. The road construction project has been completed and the damaged monument has been repaired. (Photo 2)
- The surface monuments of wells MW2 and MW5 (Photo 3) had filled in with sediment and water above the level of the well casing when opened. Small flecks of sheen were observed on the water inside these surface monuments. This water and sediment was removed by

hand prior to opening the plug on the well casing. In MW2, the seal between the well casing and plug appeared to be intact, but in MW5 the plug had floated loose of the casing.

6.2 Subsurface Observations

The oil/water interface probe indicated that petroleum may be present in both monitoring wells MW1 an MW2 with an approximate thickness of 0.01 feet. However, there was not visual or olfactory evidence of free product when sampling MW1.

In MW5 there was no product detected with the interface probe, however the probe did have a sheen on it when removed from the well and it also had a petroleum odor; sheen was observed on the decontamination water after decontaminating the product interface probe and tape after measuring this well, and the decontamination water was replaced with fresh potable water. In 2020, 0.25 feet of free product was measured in this well.

Within monitoring well MW6 0.21 feet of free product was detected with the interface probe. The presence of free product was confirmed by observing product on the probe once it was removed from the well along with a petroleum odor.

Table 1 Depths to product, groundwater, and well base

Well	Well Elevation[1]	Depth to Water[2]	Depth to Well Base[2]	Groundwater Elevation[1]	Depth to Product[2]	Product Thickness (2021)[2]	Product Thickness (2020)[2]
MW1	99.87	69.44	80.77	30.43	69.43	0.01	-
MW2	98.97	68.54	77.36	30.43	68.53	0.01	-
MW4a	98.53	47.79	50.40	50.74	-	-	-
MW5	98.85	46.37	49.89	52.48	-	-	0.25
MW6	99.85	47.31	50.38	52.54	47.10	0.21	0.16

Notes

1 Elevation recorded in feet relative to a horizontal strut on a utility pole northeast of MW2, which was arbitrarily assigned an elevation of 100 ft.

2 All depths are recorded in feet from the highest point of the well casing

\- Product was not observed in these wells

6.3 Groundwater Analytical Results

Samples for laboratory analysis were submitted to SGS North America (SGS) in Anchorage, Alaska. In accordance with the approved work plan the samples were analyzed for diesel range organics (DRO) by method AK 102, volatile organic compounds (VOC) by EPA method 8260D, and polycyclic aromatic hydrocarbon (PAH) by EPA method 8270D.

Analysis of the two samples (primary and duplicate) collected during this effort found all analytes to be below the laboratory reporting limits. With the exception of 1,2,3-trichloropropane all reporting limits were below ADEC groundwater cleanup levels.

Table 2 presents the analytical results. The laboratory report is included in Appendix C.

7.0 QUALITY CONTROL

The ADEC Laboratory Data Review checklist was completed for the laboratory report. Both the checklist and report are included in Appendix C. At the time of receipt at the laboratory the cooler temperature was 3.8°C, which is within the acceptable range. Sample condition was documented as being acceptable with no containers broken or leaking, vials were free of air bubbles, sample containers matched the COC, and the samples were received and analyzed within hold times.

The laboratory quality control (QC) samples did have some failures with regards to recoveries in the laboratory control samples (LCS) and laboratory control sample duplicates (LCSD). The relative percent difference (RPD) for naphthalene was also outside of the acceptable range between the LCS and LCSD. Surrogates toluene-D8 and 4-bromoflorobenzene also had failed recoveries in the method blank. Additionally, in the matrix spike and matrix spike duplicate there were some failed surrogate recoveries and some RPDs that were outside of range.

The above stated issues related to the laboratory QC data does not have any significant impact on the data since analysis of the field samples found all analytes to be below the laboratory reporting limits, and with the exception of 1,2,3-trichloropropane, all reporting limits were below the ADEC cleanup levels.

The RPD could not be calculated for the field samples due to the primary and duplicate samples being non-detect for all analytes.

No other discrepancies that would affect project conclusion were noted.

8.0 CONCLUSION

During this sampling event only one well was sampled, monitoring well MW1. The oil/water interface probe indicated that free product may be present in both MW1 and MW2. Due to the perceived presence of the free product, MW2 was not sampled. Even though MW1 also had an indication of free product, the QEP decided to sample the well to get some data on the deep aquifer. At no time during the purging of the well or during the sample collection was indications of contamination observed. There was no sheen, oil droplets, odor or other indicators of contamination. The two samples collected, sample 18190-MW1-091021 and duplicate sample 18190-M77-091021 did not have any analytes detected above the laboratory's reporting limit. For all primary contaminants of concern the reporting limits were below the cleanup level. Based on this data it appears the deep aquifer still remains free of contamination. The reason for the indication of free product by the interface probe remains unknown as no visual or olfactory indicators were observed during purging and sampling. This should be further evaluated during future events if probe again indicates the potential for free product. During future events, wells MW1 and MW2 should be sampled even if product is indicated; however, sampling may be suspended if free product is visually confirmed in these wells.

During the September 2020 and September 2021 sampling events sufficient effort has been taken to try and located MW3, to no avail. At this point MW3 should be considered to be inaccessible for sampling.

The shallow aquifer wells MW4a, MW5 and MW6 have never yielded a viable sample due the combination or insufficient water volume and the presence of free product. These wells are still useful for monitoring the depth of the free product and they should continue to be investigated during future monitoring events.

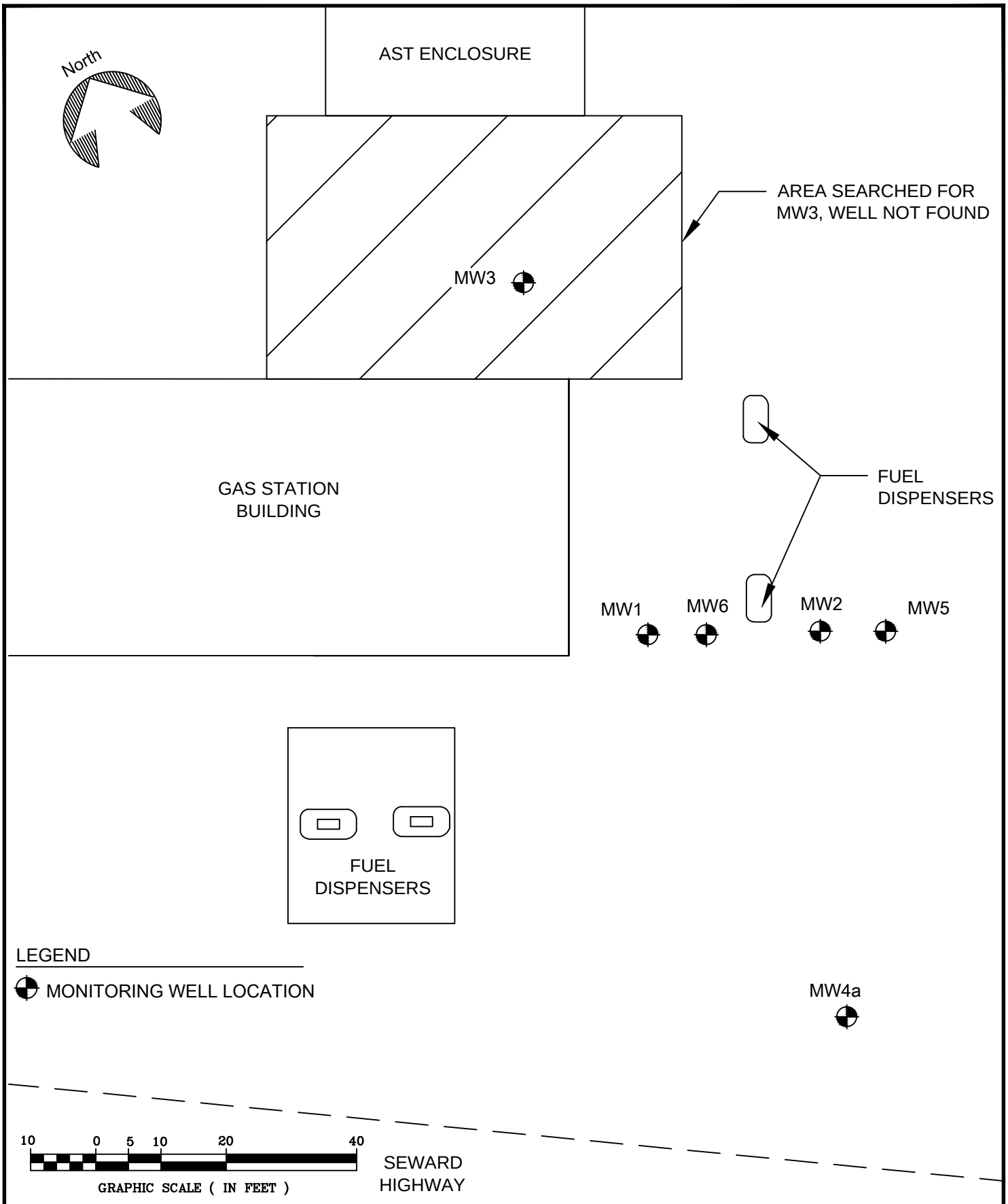
Table 2 DRO results of samples from monitoring wells on at the Essential 1 Gas Station. All results are shown in milligrams per liter (mg/L). GRO and BTEX were analyzed for in samples from October 2016 through May 2020 and were never detected.

Date	MW1		MW2		MW3	
September-21	0.566	u	-		-	
September-20	0.652	u,1	0.625	u	-	
May-20	**0.213**	**j**	**0.268**	**j**	**0.329**	**j**
December-19	0.25	u	0.25	u	0.25	u
August-19	**0.25**		**2.2**		**0.33**	
October-17	0.26	u	0.25	u	0.25	u
May-17	0.099	u	0.10	u	0.10	u
October-16	**0.11**		0.10	u	0.10	u

Key

	1	Lowest non-detect reporting limit shown
-		No sample was collected from this well during this sampling event
0.652	u	DRO was not detected above the reporting limit of 0.652 mg/L
0.213	**j**	DRO was detected at an estimated concentration of 0.213 mg/L
0.25		DRO was detected at 0.25 mg/L
2.2		DRO was detected at 2.2 mg/L, and this concentration is greater than DRO's cleanup level of 1.5 mg/L

VICINITY MAP	ESSENTIAL 1 STATION, 29383 SEWARD HIGHWAY, GIRDWOOD, ALASKA	EMI Consulting, Engineering & Training	EMI JOB: 18190 DRAWN: HJD REVIEWED: AVC DATE: 6/25/2021	FIGURE 1



SITE MAP	ESSENTIAL 1 STATION, 29383 SEWARD HIGHWAY, GIRDWOOD, ALASKA	EMI Consulting, Engineering & Training	EMI JOB: 18190 DRAWN: HJD REVIEWED: AVC DATE: 6/25/2021	FIGURE 2

APPENDIX A

Photo Log

Photo Log

Photo 1: Area where records indicate MW3 is located. The white van and gold truck could not be moved, but their locations were thoroughly searched in 2020 and are paved. September 10, 2021, facing west.

Photo 2: Monitoring well MW4a with new surface monument. September 10, 2021, facing south.

Photo Log

Photo 3: Silt accumulated in the surface monument of MW5. September 10, 2021.

Photo 4: Sheen observed on decontamination water after measuring MW5. September 10, 2021.

APPENDIX B

Field Notes

Bird Creek essential 1 sept 2021

Andy Carlson - EM QEP

On site 11:10

Cloudy ~60°F rained recently, calm.

No luck finding MW5 w/ metal detector.

MW 4A WL 47.79
base 50.40
No odor noted, bottom ~½ of probe coated in mud/silt.

MW 6 product at 47.10
water at 47.31 >3.07
base of well 50.38
Fuel odor residue on probe
Sheen on/odor in decon water after decanting tape.

13:00 MW5 - surface normal silt - appears to have floated off - only loosely on casing

WL 46.37 > 3.52
base 49.89
~2 inches silt on probe
- sheen on silt on probe, odor
- no product detection by interface probe

MW2 - Casing completely coated by sand + silt, some by hand.

GW Elev 30.44 product tape just past 68.5
WL 68.54
well base 77.36

MW 1 product tape 69.43
GW Elev 30.43 WL 69.44
well base 80.77

11.33 · 0.16 1.81 = MW
6.44 to 3rd

Rita in the Rain

	BS	HI	FS	Elev.
TBS1	3.56			100.00
		103.58		
MW4	4.81		5.05	98.53
		103.34		
TBS1			3.34	100.00
TBS1	3.77			100.00
		103.77		
MW5	4.79		4.92	98.85
		103.64		
TBS1			3.64	100.00
TBS1	3.58			100.00
		103.58		
MW6	3.85		3.73	99.85
		103.70		
TBS1			3.70	100.00
TBS1	3.72			100.00
		103.72		
MW2	4.78		4.74	98.98
		103.76		
TBS1			3.79	99.97 ✗

Scale: 1 square = _____

	BS	HI	FS	Elev
TBS1	3.70			100.00
		103.70		
MW2	4.78		4.73	98.97
		103.75		
TBS1			3.76	99.99
TBS2	3.67			100.00
		103.67		
MW1	3.65		3.80	99.87
		103.52		
TBS1			3.52	100.00

MW1 - setting pump initially at 71.97

began pumping at 16:07
pump at 70.10, WL neither not detecting

Time	WL	°C	%O2	mS/cm	pH	ORP
16:14	-	6.2	8.60	104.1	6.20	275.7
16:18	-	5.6	9.23	101.6	6.68	261
16:39	69.50	5.3	9.59	1.8	7.37	217.9
17:13	69.51	5.5	10.03	101.2	7.90	163.5

Scale: 1 square = _____

Rite in the Rain

16:20 pausing purging to see if sheen appears.

16:22 no sheen, restarted pump

17:05 restarted pump

17:26 >3 wv purged (>7 gallons) collected samples 16190 - MW1 - 091021 and its duplicate 16190 - MW77 - 091021 each 3 x 40 ml w/HCl 2 x 250 ml no pres 2 x 250 ml w/HCl

17:30 MW1 - w/ 69.49 product 69.48

Survey ties - feet

	N. Corner	S. Corner
N. Corner		36.1
MW 1	41.8	21.3
MW 6	46.8	29.0
MW 2	69.8	61.5
MW 5	71.2	65.5
MW 4a	98.6	70.3

18:16 off site.

Rite in the Rain

APPENDIX C

Laboratory Reports and ADEC Laboratory Data Review Checklists

Laboratory Report of Analysis

To: Environmental Mgmt Inc (EMI)
206 E Fireweed Ln #201
Anchorage, AK 99503
(907)272-9336

Report Number: **1215973**

Client Project: **18190 Essential 1**

Dear Andy Coulson,

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 Alexandra 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.

_____

Alexandra Daniel Date
Project Manager
Alexandra.Daniel@sgs.com

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

Member of SGS Group

Case Narrative

SGS Client: **Environmental Mgmt Inc (EMI)**
SGS Project: **1215973**
Project Name/Site: **18190 Essential 1**
Project Contact: **Andy Coulson**

Refer to sample receipt form for information on sample condition.

LCSD for HBN 1825633 [VXX/3785 (1636753) LCSD

8260D - LCSD recoveries for several analytes do not meet QC criteria. These analytes were not reported above the LOQ in the associated samples.
8260D - LCS/LCSD RPD for naphthalene does not meet QC criteria. This analyte was not reported above the LOQ in the associated samples.

MB for HBN 1825633 [VXX/37856] (1636751) MB

8260D - Surrogate recovery for 4-bromofluorobenzene does not meet QC criteria.

MB for HBN 1825978 [VXX/37888] (1637560) MB

8260D - Surrogate recovery for toluene-d8 does not meet QC criteria, however the associated analytes were not detected above the LOQ.

1215976003MS (1636319) MS

8270D SIM - PAH MS recoveries for multiple analytes do not meet QC criteria. Refer to the LCS for accuracy requirements.
8270D SIM - PAH surrogate recoveries for 2-methylnaphthalene-d10 and fluoranthene-d10 do not meet QC criteria.

1215976003MSD (1636320) MSD

8270D SIM - PAH MS/MSD RPDs for multiple analytes do not meet QC criteria. These analytes were not detected above the LOQ in the parent sample.

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

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Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. 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.

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

Member of SGS Group

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
18190-MW1-091021	1215973001	09/10/2021	09/13/2021	Water (Surface, Eff., Ground)
18190-MW77-091021	1215973002	09/10/2021	09/13/2021	Water (Surface, Eff., Ground)
Trip Blank	1215973003	09/10/2021	09/13/2021	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO Low Volume (W)
SW8260D	Volatile Organic Compounds (W) FULL

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Results of **18190-MW1-091021**

Client Sample ID: **18190-MW1-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973001
Lab Project ID: 1215973

Collection Date: 09/10/21 17:26
Received Date: 09/13/21 14:00
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	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
2-Methylnaphthalene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Acenaphthene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Acenaphthylene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Anthracene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Benzo(a)Anthracene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Benzo[a]pyrene	0.0182	U	0.0182	0.00564	ug/L	1		09/20/21 23:27
Benzo[b]Fluoranthene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Benzo[g,h,i]perylene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Benzo[k]fluoranthene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Chrysene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Dibenzo[a,h]anthracene	0.0182	U	0.0182	0.00564	ug/L	1		09/20/21 23:27
Fluoranthene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Fluorene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Indeno[1,2,3-c,d] pyrene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Naphthalene	0.0909	U	0.0909	0.0282	ug/L	1		09/20/21 23:27
Phenanthrene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Pyrene	0.0455	U	0.0455	0.0136	ug/L	1		09/20/21 23:27
Surrogates								
2-Methylnaphthalene-d10 (surr)	52.7		42-86		%	1		09/20/21 23:27
Fluoranthene-d10 (surr)	60.1		50-97		%	1		09/20/21 23:27

Batch Information

Analytical Batch: XMS12899
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 09/20/21 23:27
Container ID: 1215973001-F

Prep Batch: XXX45561
Prep Method: SW3535A
Prep Date/Time: 09/14/21 12:30
Prep Initial Wt./Vol.: 275 mL
Prep Extract Vol: 1 mL

Print Date: 09/30/2021 2:29:29PM

Results of **18190-MW1-091021**

Client Sample ID: **18190-MW1-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973001
Lab Project ID: 1215973

Collection Date: 09/10/21 17:26
Received Date: 09/13/21 14:00
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	0.566	U	0.566	0.189	mg/L	1		09/22/21 20:18
Surrogates								
5a Androstane (surr)	79.6		50-150		%	1		09/22/21 20:18

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/22/21 20:18
Container ID: 1215973001-D

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Print Date: 09/30/2021 2:29:29PM

Results of **18190-MW1-091021**

Client Sample ID: **18190-MW1-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973001
Lab Project ID: 1215973

Collection Date: 09/10/21 17:26
Received Date: 09/13/21 14:00
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	0.500	U	0.500	0.150	ug/L	1		09/15/21 15:06
1,1,1-Trichloroethane	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,1,2,2-Tetrachloroethane	0.500	U	0.500	0.150	ug/L	1		09/15/21 15:06
1,1,2-Trichloroethane	0.400	U	0.400	0.120	ug/L	1		09/15/21 15:06
1,1-Dichloroethane	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,1-Dichloroethene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,1-Dichloropropene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,2,3-Trichlorobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,2,3-Trichloropropane	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,2,4-Trichlorobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,2,4-Trimethylbenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,2-Dibromo-3-chloropropane	10.0	U	10.0	3.10	ug/L	1		09/15/21 15:06
1,2-Dibromoethane	0.0750	U	0.0750	0.0180	ug/L	1		09/15/21 15:06
1,2-Dichlorobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,2-Dichloroethane	0.500	U	0.500	0.200	ug/L	1		09/15/21 15:06
1,2-Dichloropropane	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,3,5-Trimethylbenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,3-Dichlorobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
1,3-Dichloropropane	0.500	U	0.500	0.150	ug/L	1		09/15/21 15:06
1,4-Dichlorobenzene	0.500	U	0.500	0.150	ug/L	1		09/15/21 15:06
2,2-Dichloropropane	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
2-Butanone (MEK)	10.0	U	10.0	3.10	ug/L	1		09/15/21 15:06
2-Chlorotoluene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
2-Hexanone	10.0	U	10.0	3.10	ug/L	1		09/15/21 15:06
4-Chlorotoluene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
4-Isopropyltoluene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
4-Methyl-2-pentanone (MIBK)	10.0	U	10.0	3.10	ug/L	1		09/15/21 15:06
Benzene	0.400	U	0.400	0.120	ug/L	1		09/15/21 15:06
Bromobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
Bromochloromethane	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
Bromodichloromethane	0.500	U	0.500	0.150	ug/L	1		09/15/21 15:06
Bromoform	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
Bromomethane	6.00	U	6.00	3.00	ug/L	1		09/15/21 15:06
Carbon disulfide	10.0	U	10.0	3.10	ug/L	1		09/15/21 15:06
Carbon tetrachloride	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06
Chlorobenzene	0.500	U	0.500	0.150	ug/L	1		09/15/21 15:06
Chloroethane	1.00	U	1.00	0.310	ug/L	1		09/15/21 15:06

Results of **18190-MW1-091021**

Client Sample ID: **18190-MW1-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973001
Lab Project ID: 1215973

Collection Date: 09/10/21 17:26
Received Date: 09/13/21 14:00
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	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Chloromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
cis-1,2-Dichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
cis-1,3-Dichloropropene	0.500 U		0.500	0.150	ug/L	1		09/15/21 15:06
Dibromochloromethane	0.500 U		0.500	0.150	ug/L	1		09/15/21 15:06
Dibromomethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Dichlorodifluoromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Freon-113	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:06
Hexachlorobutadiene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Isopropylbenzene (Cumene)	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Methylene chloride	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:06
Methyl-t-butyl ether	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:06
Naphthalene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
n-Butylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
n-Propylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
o-Xylene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		09/15/21 15:06
sec-Butylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Styrene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
tert-Butylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Tetrachloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Toluene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
trans-1,2-Dichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
trans-1,3-Dichloropropene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Trichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Trichlorofluoromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:06
Vinyl acetate	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:06
Vinyl chloride	0.150 U		0.150	0.0500	ug/L	1		09/15/21 15:06
Xylenes (total)	3.00 U		3.00	1.00	ug/L	1		09/15/21 15:06
Surrogates								
1,2-Dichloroethane-D4 (surr)	118		81-118		%	1		09/15/21 15:06
4-Bromofluorobenzene (surr)	96.4		85-114		%	1		09/15/21 15:06
Toluene-d8 (surr)	99.5		89-112		%	1		09/15/21 15:06

Print Date: 09/30/2021 2:29:29PM

Results of **18190-MW1-091021**

Client Sample ID: **18190-MW1-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973001
Lab Project ID: 1215973

Collection Date: 09/10/21 17:26
Received Date: 09/13/21 14:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 15:06
Container ID: 1215973001-A

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **18190-MW77-091021**

Client Sample ID: **18190-MW77-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973002
Lab Project ID: 1215973

Collection Date: 09/10/21 17:36
Received Date: 09/13/21 14:00
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	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
2-Methylnaphthalene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Acenaphthene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Acenaphthylene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Anthracene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Benzo(a)Anthracene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Benzo[a]pyrene	0.0204	U	0.0204	0.00633	ug/L	1		09/20/21 23:48
Benzo[b]Fluoranthene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Benzo[g,h,i]perylene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Benzo[k]fluoranthene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Chrysene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Dibenzo[a,h]anthracene	0.0204	U	0.0204	0.00633	ug/L	1		09/20/21 23:48
Fluoranthene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Fluorene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Indeno[1,2,3-c,d] pyrene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Naphthalene	0.102	U	0.102	0.0316	ug/L	1		09/20/21 23:48
Phenanthrene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Pyrene	0.0510	U	0.0510	0.0153	ug/L	1		09/20/21 23:48
Surrogates								
2-Methylnaphthalene-d10 (surr)	56.9		42-86		%	1		09/20/21 23:48
Fluoranthene-d10 (surr)	66.3		50-97		%	1		09/20/21 23:48

Batch Information

Analytical Batch: XMS12899
Analytical Method: 8270D SIM LV (PAH)
Analyst: LAW
Analytical Date/Time: 09/20/21 23:48
Container ID: 1215973002-F

Prep Batch: XXX45561
Prep Method: SW3535A
Prep Date/Time: 09/14/21 12:30
Prep Initial Wt./Vol.: 245 mL
Prep Extract Vol: 1 mL

Print Date: 09/30/2021 2:29:29PM

Results of **18190-MW77-091021**

Client Sample ID: **18190-MW77-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973002
Lab Project ID: 1215973

Collection Date: 09/10/21 17:36
Received Date: 09/13/21 14:00
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	0.588	U	0.588	0.196	mg/L	1		09/22/21 20:28
Surrogates								
5a Androstane (surr)	80.1		50-150		%	1		09/22/21 20:28

Batch Information

Analytical Batch: XFC16086
Analytical Method: AK102
Analyst: JMG
Analytical Date/Time: 09/22/21 20:28
Container ID: 1215973002-D

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 09/18/21 15:55
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

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Results of **18190-MW77-091021**

Client Sample ID: **18190-MW77-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973002
Lab Project ID: 1215973

Collection Date: 09/10/21 17:36
Received Date: 09/13/21 14:00
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	0.500 U		0.500	0.150	ug/L	1		09/15/21 15:21
1,1,1-Trichloroethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
1,1,2,2-Tetrachloroethane	0.500 U		0.500	0.150	ug/L	1		09/21/21 17:57
1,1,2-Trichloroethane	0.400 U		0.400	0.120	ug/L	1		09/15/21 15:21
1,1-Dichloroethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
1,1-Dichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
1,1-Dichloropropene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
1,2,3-Trichlorobenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
1,2,3-Trichloropropane	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
1,2,4-Trichlorobenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
1,2,4-Trimethylbenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
1,2-Dibromo-3-chloropropane	10.0 U		10.0	3.10	ug/L	1		09/21/21 17:57
1,2-Dibromoethane	0.0750 U		0.0750	0.0180	ug/L	1		09/15/21 15:21
1,2-Dichlorobenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
1,2-Dichloroethane	0.500 U		0.500	0.200	ug/L	1		09/15/21 15:21
1,2-Dichloropropane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
1,3,5-Trimethylbenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
1,3-Dichlorobenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
1,3-Dichloropropane	0.500 U		0.500	0.150	ug/L	1		09/15/21 15:21
1,4-Dichlorobenzene	0.500 U		0.500	0.150	ug/L	1		09/21/21 17:57
2,2-Dichloropropane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
2-Butanone (MEK)	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:21
2-Chlorotoluene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
2-Hexanone	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:21
4-Chlorotoluene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
4-Isopropyltoluene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
4-Methyl-2-pentanone (MIBK)	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:21
Benzene	0.400 U		0.400	0.120	ug/L	1		09/15/21 15:21
Bromobenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
Bromochloromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Bromodichloromethane	0.500 U		0.500	0.150	ug/L	1		09/15/21 15:21
Bromoform	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Bromomethane	6.00 U		6.00	3.00	ug/L	1		09/15/21 15:21
Carbon disulfide	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:21
Carbon tetrachloride	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Chlorobenzene	0.500 U		0.500	0.150	ug/L	1		09/15/21 15:21
Chloroethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21

Results of **18190-MW77-091021**

Client Sample ID: **18190-MW77-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973002
Lab Project ID: 1215973

Collection Date: 09/10/21 17:36
Received Date: 09/13/21 14:00
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	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Chloromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
cis-1,2-Dichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
cis-1,3-Dichloropropene	0.500 U		0.500	0.150	ug/L	1		09/15/21 15:21
Dibromochloromethane	0.500 U		0.500	0.150	ug/L	1		09/15/21 15:21
Dibromomethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Dichlorodifluoromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Freon-113	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:21
Hexachlorobutadiene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
Isopropylbenzene (Cumene)	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Methylene chloride	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:21
Methyl-t-butyl ether	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:21
Naphthalene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
n-Butylbenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
n-Propylbenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
o-Xylene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		09/15/21 15:21
sec-Butylbenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
Styrene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
tert-Butylbenzene	1.00 U		1.00	0.310	ug/L	1		09/21/21 17:57
Tetrachloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Toluene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
trans-1,2-Dichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
trans-1,3-Dichloropropene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Trichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Trichlorofluoromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 15:21
Vinyl acetate	10.0 U		10.0	3.10	ug/L	1		09/15/21 15:21
Vinyl chloride	0.150 U		0.150	0.0500	ug/L	1		09/15/21 15:21
Xylenes (total)	3.00 U		3.00	1.00	ug/L	1		09/15/21 15:21
Surrogates								
1,2-Dichloroethane-D4 (surr)	105		81-118		%	1		09/15/21 15:21
4-Bromofluorobenzene (surr)	112		85-114		%	1		09/21/21 17:57
Toluene-d8 (surr)	95.5		89-112		%	1		09/15/21 15:21

Print Date: 09/30/2021 2:29:29PM

Results of **18190-MW77-091021**

Client Sample ID: **18190-MW77-091021**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973002
Lab Project ID: 1215973

Collection Date: 09/10/21 17:36
Received Date: 09/13/21 14:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 15:21
Container ID: 1215973002-A

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Analytical Batch: VMS21201
Analytical Method: SW8260D
Analyst: MDT
Analytical Date/Time: 09/21/21 17:57
Container ID: 1215973002-B

Prep Batch: VXX37888
Prep Method: SW5030B
Prep Date/Time: 09/21/21 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973003
Lab Project ID: 1215973

Collection Date: 09/10/21 17:26
Received Date: 09/13/21 14:00
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	0.500	U	0.500	0.150	ug/L	1		09/15/21 13:07
1,1,1-Trichloroethane	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,1,2,2-Tetrachloroethane	0.500	U	0.500	0.150	ug/L	1		09/15/21 13:07
1,1,2-Trichloroethane	0.400	U	0.400	0.120	ug/L	1		09/15/21 13:07
1,1-Dichloroethane	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,1-Dichloroethene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,1-Dichloropropene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,2,3-Trichlorobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,2,3-Trichloropropane	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,2,4-Trichlorobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,2,4-Trimethylbenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,2-Dibromo-3-chloropropane	10.0	U	10.0	3.10	ug/L	1		09/15/21 13:07
1,2-Dibromoethane	0.0750	U	0.0750	0.0180	ug/L	1		09/15/21 13:07
1,2-Dichlorobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,2-Dichloroethane	0.500	U	0.500	0.200	ug/L	1		09/15/21 13:07
1,2-Dichloropropane	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,3,5-Trimethylbenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,3-Dichlorobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
1,3-Dichloropropane	0.500	U	0.500	0.150	ug/L	1		09/15/21 13:07
1,4-Dichlorobenzene	0.500	U	0.500	0.150	ug/L	1		09/15/21 13:07
2,2-Dichloropropane	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
2-Butanone (MEK)	10.0	U	10.0	3.10	ug/L	1		09/15/21 13:07
2-Chlorotoluene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
2-Hexanone	10.0	U	10.0	3.10	ug/L	1		09/15/21 13:07
4-Chlorotoluene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
4-Isopropyltoluene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
4-Methyl-2-pentanone (MIBK)	10.0	U	10.0	3.10	ug/L	1		09/15/21 13:07
Benzene	0.400	U	0.400	0.120	ug/L	1		09/15/21 13:07
Bromobenzene	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
Bromochloromethane	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
Bromodichloromethane	0.500	U	0.500	0.150	ug/L	1		09/15/21 13:07
Bromoform	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
Bromomethane	6.00	U	6.00	3.00	ug/L	1		09/15/21 13:07
Carbon disulfide	10.0	U	10.0	3.10	ug/L	1		09/15/21 13:07
Carbon tetrachloride	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07
Chlorobenzene	0.500	U	0.500	0.150	ug/L	1		09/15/21 13:07
Chloroethane	1.00	U	1.00	0.310	ug/L	1		09/15/21 13:07

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973003
Lab Project ID: 1215973

Collection Date: 09/10/21 17:26
Received Date: 09/13/21 14:00
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	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Chloromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
cis-1,2-Dichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
cis-1,3-Dichloropropene	0.500 U		0.500	0.150	ug/L	1		09/15/21 13:07
Dibromochloromethane	0.500 U		0.500	0.150	ug/L	1		09/15/21 13:07
Dibromomethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Dichlorodifluoromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Ethylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Freon-113	10.0 U		10.0	3.10	ug/L	1		09/15/21 13:07
Hexachlorobutadiene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Isopropylbenzene (Cumene)	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Methylene chloride	10.0 U		10.0	3.10	ug/L	1		09/15/21 13:07
Methyl-t-butyl ether	10.0 U		10.0	3.10	ug/L	1		09/15/21 13:07
Naphthalene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
n-Butylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
n-Propylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
o-Xylene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
P & M -Xylene	2.00 U		2.00	0.620	ug/L	1		09/15/21 13:07
sec-Butylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Styrene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
tert-Butylbenzene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Tetrachloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Toluene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
trans-1,2-Dichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
trans-1,3-Dichloropropene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Trichloroethene	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Trichlorofluoromethane	1.00 U		1.00	0.310	ug/L	1		09/15/21 13:07
Vinyl acetate	10.0 U		10.0	3.10	ug/L	1		09/15/21 13:07
Vinyl chloride	0.150 U		0.150	0.0500	ug/L	1		09/15/21 13:07
Xylenes (total)	3.00 U		3.00	1.00	ug/L	1		09/15/21 13:07
Surrogates								
1,2-Dichloroethane-D4 (surr)	107		81-118		%	1		09/15/21 13:07
4-Bromofluorobenzene (surr)	103		85-114		%	1		09/15/21 13:07
Toluene-d8 (surr)	99.1		89-112		%	1		09/15/21 13:07

Print Date: 09/30/2021 2:29:29PM

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **18190 Essential 1**
Lab Sample ID: 1215973003
Lab Project ID: 1215973

Collection Date: 09/10/21 17:26
Received Date: 09/13/21 14:00
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS21184
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/15/21 13:07
Container ID: 1215973003-A

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 09/15/21 09:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 09/30/2021 2:29:29PM

Method Blank

Blank ID: MB for HBN 1825633 [VXX/37856]
Blank Lab ID: 1636751

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215973001, 1215973002, 1215973003

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 1825633 [VXX/37856]
Blank Lab ID: 1636751

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215973001, 1215973002, 1215973003

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)	106	81-118		%
4-Bromofluorobenzene (surr)	115*	85-114		%
Toluene-d8 (surr)	100	89-112		%

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Method Blank

Blank ID: MB for HBN 1825633 [VXX/37856]
Blank Lab ID: 1636751

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215973001, 1215973002, 1215973003

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS21184
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 9/15/2021 9:30:00AM

Prep Batch: VXX37856
Prep Method: SW5030B
Prep Date/Time: 9/15/2021 9:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1215973 [VXX37856]
Blank Spike Lab ID: 1636752
Date Analyzed: 09/15/2021 09:45

Spike Duplicate ID: LCSD for HBN 1215973 [VXX37856]
Spike Duplicate Lab ID: 1636753
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215973001, 1215973002, 1215973003

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	26.9	90	30	32.0	107	(78-124)	17.10	(< 20)
1,1,1-Trichloroethane	30	31.8	106	30	29.4	98	(74-131)	7.70	(< 20)
1,1,2,2-Tetrachloroethane	30	31.8	106	30	32.1	107	(71-121)	0.90	(< 20)
1,1,2-Trichloroethane	30	30.7	102	30	32.2	107	(80-119)	5.10	(< 20)
1,1-Dichloroethane	30	31.0	103	30	29.7	99	(77-125)	4.30	(< 20)
1,1-Dichloroethene	30	29.9	100	30	28.5	95	(71-131)	4.90	(< 20)
1,1-Dichloropropene	30	29.5	98	30	30.1	100	(79-125)	2.00	(< 20)
1,2,3-Trichlorobenzene	30	30.7	102	30	37.6	125	(69-129)	20.10 *	(< 20)
1,2,3-Trichloropropane	30	32.8	109	30	35.5	118	(73-122)	7.90	(< 20)
1,2,4-Trichlorobenzene	30	29.0	97	30	34.0	113	(69-130)	16.00	(< 20)
1,2,4-Trimethylbenzene	30	32.1	107	30	31.7	106	(79-124)	1.50	(< 20)
1,2-Dibromo-3-chloropropane	30	31.7	106	30	30.8	103	(62-128)	2.80	(< 20)
1,2-Dibromoethane	30	27.8	93	30	29.2	97	(77-121)	4.70	(< 20)
1,2-Dichlorobenzene	30	30.2	101	30	30.8	103	(80-119)	2.00	(< 20)
1,2-Dichloroethane	30	30.6	102	30	30.6	102	(73-128)	0.06	(< 20)
1,2-Dichloropropane	30	30.4	101	30	25.7	86	(78-122)	16.60	(< 20)
1,3,5-Trimethylbenzene	30	32.3	108	30	35.3	118	(75-124)	8.70	(< 20)
1,3-Dichlorobenzene	30	29.1	97	30	30.4	101	(80-119)	4.60	(< 20)
1,3-Dichloropropane	30	27.9	93	30	29.4	98	(80-119)	5.30	(< 20)
1,4-Dichlorobenzene	30	28.8	96	30	30.1	100	(79-118)	4.40	(< 20)
2,2-Dichloropropane	30	31.0	103	30	29.8	99	(60-139)	3.80	(< 20)
2-Butanone (MEK)	90	82.1	91	90	77.0	86	(56-143)	6.40	(< 20)
2-Chlorotoluene	30	33.9	113	30	38.3	128 *	(79-122)	12.10	(< 20)
2-Hexanone	90	83.8	93	90	82.9	92	(57-139)	1.00	(< 20)
4-Chlorotoluene	30	34.9	116	30	37.7	126 *	(78-122)	7.60	(< 20)
4-Isopropyltoluene	30	28.2	94	30	29.5	99	(77-127)	4.80	(< 20)
4-Methyl-2-pentanone (MIBK)	90	85.1	95	90	75.5	84	(67-130)	11.90	(< 20)
Benzene	30	30.3	101	30	29.1	97	(79-120)	4.10	(< 20)
Bromobenzene	30	31.1	104	30	35.1	117	(80-120)	12.00	(< 20)
Bromochloromethane	30	27.1	90	30	27.2	91	(78-123)	0.37	(< 20)
Bromodichloromethane	30	31.0	103	30	27.5	92	(79-125)	11.80	(< 20)
Bromoform	30	26.0	87	30	30.6	102	(66-130)	16.20	(< 20)
Bromomethane	30	33.5	112	30	34.5	115	(53-141)	2.80	(< 20)
Carbon disulfide	45	46.1	102	45	43.4	97	(64-133)	5.90	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1215973 [VXX37856]
Blank Spike Lab ID: 1636752
Date Analyzed: 09/15/2021 09:45

Spike Duplicate ID: LCSD for HBN 1215973 [VXX37856]
Spike Duplicate Lab ID: 1636753
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215973001, 1215973002, 1215973003

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	31.2	104	30	30.7	102	(72-136)	1.60	(< 20)
Chlorobenzene	30	27.0	90	30	31.2	104	(82-118)	14.50	(< 20)
Chloroethane	30	35.0	117	30	34.3	114	(60-138)	2.20	(< 20)
Chloroform	30	30.0	100	30	28.1	94	(79-124)	6.30	(< 20)
Chloromethane	30	25.1	84	30	24.2	81	(50-139)	3.50	(< 20)
cis-1,2-Dichloroethene	30	30.0	100	30	29.6	99	(78-123)	1.10	(< 20)
cis-1,3-Dichloropropene	30	30.3	101	30	29.0	97	(75-124)	4.40	(< 20)
Dibromochloromethane	30	29.9	100	30	31.7	106	(74-126)	5.90	(< 20)
Dibromomethane	30	28.7	96	30	29.6	99	(79-123)	3.20	(< 20)
Dichlorodifluoromethane	30	31.5	105	30	30.0	100	(32-152)	5.00	(< 20)
Ethylbenzene	30	27.9	93	30	32.7	109	(79-121)	15.70	(< 20)
Freon-113	45	46.6	104	45	44.4	99	(70-136)	5.00	(< 20)
Hexachlorobutadiene	30	28.1	94	30	32.1	107	(66-134)	13.30	(< 20)
Isopropylbenzene (Cumene)	30	29.6	99	30	32.5	108	(72-131)	9.60	(< 20)
Methylene chloride	30	28.6	96	30	28.1	94	(74-124)	2.10	(< 20)
Methyl-t-butyl ether	45	47.7	106	45	46.9	104	(71-124)	1.70	(< 20)
Naphthalene	30	25.9	86	30	33.4	111	(61-128)	25.40	* (< 20)
n-Butylbenzene	30	29.5	98	30	30.5	102	(75-128)	3.60	(< 20)
n-Propylbenzene	30	35.8	119	30	39.1	130	* (76-126)	8.70	(< 20)
o-Xylene	30	28.3	94	30	33.6	112	(78-122)	17.20	(< 20)
P & M -Xylene	60	58.7	98	60	69.6	116	(80-121)	17.00	(< 20)
sec-Butylbenzene	30	34.5	115	30	31.8	106	(77-126)	8.20	(< 20)
Styrene	30	27.1	90	30	32.3	108	(78-123)	17.70	(< 20)
tert-Butylbenzene	30	34.5	115	30	36.3	121	(78-124)	5.00	(< 20)
Tetrachloroethene	30	27.9	93	30	29.3	98	(74-129)	5.00	(< 20)
Toluene	30	26.6	89	30	32.4	108	(80-121)	19.80	(< 20)
trans-1,2-Dichloroethene	30	30.4	101	30	29.3	98	(75-124)	3.80	(< 20)
trans-1,3-Dichloropropene	30	31.7	106	30	32.6	109	(73-127)	2.70	(< 20)
Trichloroethene	30	27.6	92	30	29.3	98	(79-123)	6.10	(< 20)
Trichlorofluoromethane	30	34.1	114	30	32.9	110	(65-141)	3.40	(< 20)
Vinyl acetate	30	32.0	107	30	32.0	107	(54-146)	0.08	(< 20)
Vinyl chloride	30	31.1	104	30	29.5	99	(58-137)	5.10	(< 20)
Xylenes (total)	90	87.0	97	90	103	115	(79-121)	17.00	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215973 [VXX37856]
Blank Spike Lab ID: 1636752
Date Analyzed: 09/15/2021 09:45

Spike Duplicate ID: LCSD for HBN 1215973 [VXX37856]
Spike Duplicate Lab ID: 1636753
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215973001, 1215973002, 1215973003

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		104	30		106	(81-118)	1.90	
4-Bromofluorobenzene (surr)	30		107	30		111	(85-114)	3.50	
Toluene-d8 (surr)	30		99	30		107	(89-112)	8.40	

Batch Information

Analytical Batch: **VMS21184**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX37856**
Prep Method: **SW5030B**
Prep Date/Time: **09/15/2021 09:00**
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 1825978 [VXX/37888]
Blank Lab ID: 1637560

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215973002

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	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-Dichlorobenzene	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
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	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
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	106	81-118		%
4-Bromofluorobenzene (surr)	106	85-114		%
Toluene-d8 (surr)	114*	89-112		%

Batch Information

Analytical Batch: VMS21201
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: MDT
Analytical Date/Time: 9/21/2021 11:33:00AM

Prep Batch: VXX37888
Prep Method: SW5030B
Prep Date/Time: 9/21/2021 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 1215973 [VXX37888]
Blank Spike Lab ID: 1637561
Date Analyzed: 09/21/2021 11:48

Spike Duplicate ID: LCSD for HBN 1215973 [VXX37888]
Spike Duplicate Lab ID: 1637562
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215973002

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,2,2-Tetrachloroethane	30	29.9	100	30	30.3	101	(71-121)	1.40	(< 20)
1,2,3-Trichlorobenzene	30	29.2	97	30	30.4	101	(69-129)	4.20	(< 20)
1,2,3-Trichloropropane	30	31.2	104	30	31.7	106	(73-122)	1.60	(< 20)
1,2,4-Trichlorobenzene	30	28.6	95	30	29.6	99	(69-130)	3.40	(< 20)
1,2,4-Trimethylbenzene	30	32.3	108	30	32.5	108	(79-124)	0.80	(< 20)
1,2-Dibromo-3-chloropropane	30	30.0	100	30	30.4	101	(62-128)	1.30	(< 20)
1,2-Dichlorobenzene	30	30.0	100	30	30.5	102	(80-119)	1.80	(< 20)
1,3,5-Trimethylbenzene	30	30.9	103	30	31.4	105	(75-124)	1.50	(< 20)
1,3-Dichlorobenzene	30	30.0	100	30	30.5	102	(80-119)	1.80	(< 20)
1,4-Dichlorobenzene	30	29.8	99	30	30.3	101	(79-118)	1.70	(< 20)
2-Chlorotoluene	30	32.5	108	30	32.2	107	(79-122)	1.10	(< 20)
4-Chlorotoluene	30	32.1	107	30	32.5	108	(78-122)	1.10	(< 20)
4-Isopropyltoluene	30	29.7	99	30	30.3	101	(77-127)	2.00	(< 20)
Bromobenzene	30	29.6	99	30	30.1	100	(80-120)	1.80	(< 20)
Hexachlorobutadiene	30	27.4	92	30	27.8	93	(66-134)	1.20	(< 20)
Naphthalene	30	27.7	92	30	28.9	96	(61-128)	4.10	(< 20)
n-Butylbenzene	30	29.6	99	30	30.1	100	(75-128)	1.40	(< 20)
n-Propylbenzene	30	34.1	114	30	34.1	114	(76-126)	0.06	(< 20)
sec-Butylbenzene	30	31.8	106	30	32.2	107	(77-126)	1.30	(< 20)
tert-Butylbenzene	30	32.1	107	30	32.6	109	(78-124)	1.70	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30		111	30		112	(81-118)	0.21	
4-Bromofluorobenzene (surr)	30		104	30		105	(85-114)	0.67	
Toluene-d8 (surr)	30		100	30		100	(89-112)	0.33	

Batch Information

Analytical Batch: **VMS21201**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **MDT**

Prep Batch: **VXX37888**
Prep Method: **SW5030B**
Prep Date/Time: **09/21/2021 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 09/30/2021 2:29:39PM

Method Blank

Blank ID: MB for HBN 1825521 [XXX/45561]
Blank Lab ID: 1636317

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215973001, 1215973002

Results by **8270D SIM LV (PAH)**

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	53.8	42-86		%
Fluoranthene-d10 (surr)	66.3	50-97		%

Batch Information

Analytical Batch: XMS12899
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: LAW
Analytical Date/Time: 9/20/2021 9:03:00PM

Prep Batch: XXX45561
Prep Method: SW3535A
Prep Date/Time: 9/14/2021 12:30:03PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 09/30/2021 2:29:42PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215973 [XXX45561]
Blank Spike Lab ID: 1636318
Date Analyzed: 09/20/2021 21:24

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215973001, 1215973002

Results by **8270D SIM LV (PAH)**

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	2	1.32	66	(41-115)
2-Methylnaphthalene	2	1.24	62	(39-114)
Acenaphthene	2	1.47	74	(48-114)
Acenaphthylene	2	1.55	77	(35-121)
Anthracene	2	1.51	75	(53-119)
Benzo(a)Anthracene	2	1.46	73	(59-120)
Benzo[a]pyrene	2	1.48	74	(53-120)
Benzo[b]Fluoranthene	2	1.36	68	(53-126)
Benzo[g,h,i]perylene	2	1.68	84	(44-128)
Benzo[k]fluoranthene	2	1.61	81	(54-125)
Chrysene	2	1.50	75	(57-120)
Dibenzo[a,h]anthracene	2	1.68	84	(44-131)
Fluoranthene	2	1.45	72	(58-120)
Fluorene	2	1.53	77	(50-118)
Indeno[1,2,3-c,d] pyrene	2	1.63	81	(48-130)
Naphthalene	2	1.41	71	(43-114)
Phenanthrene	2	1.54	77	(53-115)
Pyrene	2	1.47	74	(53-121)
Surrogates				
2-Methylnaphthalene-d10 (surr)	2		55	(42-86)
Fluoranthene-d10 (surr)	2		64	(50-97)

Batch Information

Analytical Batch: **XMS12899**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **Agilent GC 7890B/5977A SWA**
Analyst: **LAW**

Prep Batch: **XXX45561**
Prep Method: **SW3535A**
Prep Date/Time: **09/14/2021 12:30**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1215976003
MS Sample ID: 1636319 MS
MSD Sample ID: 1636320 MSD

Analysis Date: 09/20/2021 21:44
Analysis Date: 09/20/2021 22:05
Analysis Date: 09/20/2021 22:26
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215973001, 1215973002

Results by **8270D SIM LV (PAH)**

		Matrix Spike (ug/L)				Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)		Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1-Methylnaphthalene	0.0232U	1.82	.874	48		1.82	0.937	52	41-115	7.00	(< 20)
2-Methylnaphthalene	0.0232U	1.82	.827	46		1.82	0.888	49	39-114	7.00	(< 20)
Acenaphthene	0.0232U	1.82	.855	47	*	1.82	0.958	53	48-114	11.30	(< 20)
Acenaphthylene	0.0232U	1.82	1.05	58		1.82	1.09	60	35-121	3.20	(< 20)
Anthracene	0.0232U	1.82	.774	43	*	1.82	1.03	57	53-119	28.10	* (< 20)
Benzo(a)Anthracene	0.0232U	1.82	.761	42	*	1.82	1.22	67	59-120	46.10	* (< 20)
Benzo[a]pyrene	0.00925U	1.82	.749	41	*	1.82	1.12	61	53-120	39.40	* (< 20)
Benzo[b]Fluoranthene	0.0232U	1.82	.693	38	*	1.82	1.13	62	53-126	47.90	* (< 20)
Benzo[g,h,i]perylene	0.0232U	1.82	.796	44	*	1.82	1.09	60	44-128	30.90	* (< 20)
Benzo[k]fluoranthene	0.0232U	1.82	.818	45	*	1.82	1.19	65	54-125	36.70	* (< 20)
Chrysene	0.0232U	1.82	.801	44	*	1.82	1.19	66	57-120	39.30	* (< 20)
Dibenzo[a,h]anthracene	0.00925U	1.82	.81	45		1.82	1.10	60	44-131	30.10	* (< 20)
Fluoranthene	0.0232U	1.82	.745	41	*	1.82	1.13	62	58-120	40.90	* (< 20)
Fluorene	0.0232U	1.82	.869	48	*	1.82	1.04	57	50-118	17.70	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0232U	1.82	.767	42	*	1.82	1.09	60	48-130	35.00	* (< 20)
Naphthalene	0.0463U	1.82	1.12	62		1.82	1.14	63	43-114	1.70	(< 20)
Phenanthrene	0.0268J	1.82	.817	44	*	1.82	1.05	56	53-115	25.00	* (< 20)
Pyrene	0.0167J	1.82	.76	41	*	1.82	1.16	63	53-121	41.50	* (< 20)
Surrogates											
2-Methylnaphthalene-d10 (surr)		1.82	.747	41	*	1.82	0.831	46	42-86	10.60	
Fluoranthene-d10 (surr)		1.82	.678	37	*	1.82	1.03	57	50-97	41.10	

Batch Information

Analytical Batch: XMS12899
Analytical Method: 8270D SIM LV (PAH)
Instrument: Agilent GC 7890B/5977A SWA
Analyst: LAW
Analytical Date/Time: 9/20/2021 10:05:00PM

Prep Batch: XXX45561
Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
Prep Date/Time: 9/14/2021 12:30:00PM
Prep Initial Wt./Vol.: 275.00mL
Prep Extract Vol: 1.00mL

Print Date: 09/30/2021 2:29:45PM

Method Blank

Blank ID: MB for HBN 1825731 [XXX/45584]
Blank Lab ID: 1636904

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1215973001, 1215973002

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.200	mg/L
Surrogates				
5a Androstane (surr)	84.8	60-120		%

Batch Information

Analytical Batch: XFC16088
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: JMG
Analytical Date/Time: 9/24/2021 1:04:00PM

Prep Batch: XXX45584
Prep Method: SW3520C
Prep Date/Time: 9/18/2021 3:55:00PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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

Member of SGS Group

Blank Spike Summary

Blank Spike ID: LCS for HBN 1215973 [XXX45584]
Blank Spike Lab ID: 1636905
Date Analyzed: 09/22/2021 18:10

Spike Duplicate ID: LCSD for HBN 1215973 [XXX45584]
Spike Duplicate Lab ID: 1636906
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1215973001, 1215973002

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	18.4	92	20	16.4	82	(75-125)	11.60	(< 20)
Surrogates									
5a Androstane (surr)	0.4		104	0.4		97	(60-120)	7.20	

Batch Information

Analytical Batch: **XFC16086**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **JMG**

Prep Batch: **XXX45584**
Prep Method: **SW3520C**
Prep Date/Time: **09/18/2021 15:55**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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

Member of SGS Group

1215973

SGS

SGS NORTH AMERICA INC. CHAIN OF CUSTODY RECORD

SGS Environmental Services
200 West Potter Road
Anchorage, AK 99518
(907) 562-2343
www.sgs.com/alaska

PH 358307 cq

SECTION 1

CLIENT: EMI

CONTACT: Andy Coulson | PHONE #: 907-272-9336

PROJECT NAME: 18190 Essential 1 | PROJECT/ PWSID/ PERMIT #:

REPORTS TO: Andy Coulson | E-MAIL: acoulson@emi-alaska.com

INVOICE TO: EMI | QUOTE #: | P.O. #:

INSTRUCTIONS: SECTIONS 1-5 MUST BE FILLED OUT. OMISSIONS MAY DELAY THE ONSET OF ANALYSIS.

SECTION 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 (Multi-incre-mental)	PRESERVATIVE: HCl	HCl	none							REMARKS/ LOC ID
							VOC (8260)	DRO (AK 102)	PAH (8270 SIMS)							
1 A-G	18190-MW1-091021	09/10/21	17:26	GW	7	G	✓	✓	✓							
2 A-G	18190-MW77-091021	09/10/21	17:36	GW	7	G	✓	✓	✓							
3 A-L	Trip Blank			W		G	✓									

AC

SECTION 5

	DATE	TIME	
RELINQUISHED BY:(1)	09/13/21	14:02	RECEIVED BY:
RELINQUISHED BY:(2)	DATE	TIME	RECEIVED BY:
RELINQUISHED BY:(3)	DATE	TIME	RECEIVED BY:
RELINQUISHED BY:(4)	9/13/21	1400	RECEIVED FOR LABORATORY BY: MM

SECTION 4 DOD Project? NO

COC ID:

Cooler ID:

DATA DELIVERABLE REQUIREMENTS:

REQUESTED TURNAROUND TIME AND/OR SPECIAL INSTRUCTIONS

Standard turnaround

TEMP BLANK °C: 3.8 D23 OR AMBIENT [ ]

(See attached Sample Receipt Form)

CHAIN OF CUSTODY SEAL: (CIRCLE) H.O

INTACT BROKEN ABSENT

(See attached Sample Receipt Form)

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http://www.sgs.com/terms-and-conditions

e-Sample Receipt Form

SGS Workorder #: **1215973**

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	Absent, HD
COC accompanied samples?	Yes	
DOD: Were samples received in COC corresponding coolers?	N/A	
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 @ 3.8 °C Therm. ID: D23
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.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC informatio		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020B).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

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

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1215973001-A	HCL to pH < 2	OK			
1215973001-B	HCL to pH < 2	OK			
1215973001-C	HCL to pH < 2	OK			
1215973001-D	HCL to pH < 2	OK			
1215973001-E	HCL to pH < 2	OK			
1215973001-F	No Preservative Required	OK			
1215973001-G	No Preservative Required	OK			
1215973002-A	HCL to pH < 2	OK			
1215973002-B	HCL to pH < 2	OK			
1215973002-C	HCL to pH < 2	OK			
1215973002-D	HCL to pH < 2	OK			
1215973002-E	HCL to pH < 2	OK			
1215973002-F	No Preservative Required	OK			
1215973002-G	No Preservative Required	OK			
1215973003-A	HCL to pH < 2	OK			
1215973003-B	HCL to pH < 2	OK			
1215973003-C	HCL to pH < 2	OK			

Container Condition Glossary

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

OK - The container was received at an acceptable pH for the analysis requested.
BU - The container was received with headspace greater than 6mm.
DM - The container was received damaged.
FR - The container was received frozen and not usable for Bacteria or BOD analyses.
IC - The container provided for microbiology analysis was not a laboratory-supplied, pre-sterilized container and therefore was not suitable for analysis.
NC- The container provided was not preserved or was under-preserved. The method does not allow for additional preservative added after collection.
PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
QN - Insufficient sample quantity provided.

Laboratory Data Review Checklist

Completed By:

Glenn Hasburgh

Title:

Environmental Scientist / QEP

Date:

12/13/2021

CS Report Name:

Report Date:

9/30/2021

Consultant Firm:

Environmental Management, Inc.

Laboratory Name:

SGS North America – Anchorage, Alaska

Laboratory Report Number:

1215973

ADEC File Number:

2105.26.001

Hazard Identification Number:

23166

1215973

1. Laboratory

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

   ◉ Yes ○ No Comments:

   b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

   ○ Yes ○ No Comments:

   NA, samples were not transferred.

2. Chain of Custody (CoC)

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

   ◉ Yes ○ No Comments:

   b. Correct Analyses requested?

   ◉ Yes ○ No Comments:

3. Laboratory Sample Receipt Documentation

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

   ◉ Yes ○ No Comments:

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

   ◉ Yes ○ No Comments:

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

   ◉ Yes ○ No Comments:

   None were broken or leaking.

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 Comments:

There were no discrepancies.

e. Data quality or usability affected?

Comments:

No, there is nothing to indicate data quality or usability has been affected.

4. Case Narrative

a. Present and understandable?

(•) Yes ( ) No Comments:

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

(•) Yes ( ) No Comments:

c. Were all corrective actions documented?

(•) Yes ( ) No Comments:

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

Comments:

There were multiple failed recoveries of surrogates in the lab QC samples. Many were not detected above the LOQ in the primary samples. In others, the narrative does not state specific effect.

5. Samples Results

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

(•) Yes ( ) No Comments:

b. All applicable holding times met?

(•) Yes ( ) No Comments:

c. All soils reported on a dry weight basis?

○ Yes ○ No Comments:

NA, soils were not sampled.

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

○ Yes ○ No Comments:

The LOQ fo r1,2,3-Trichloropropane is above the cleanup level. However, this is not a primary contaminant of concern.

e. Data quality or usability affected?

○ Yes ◉ No Comments:

There slightly elevated LOQ does not impact the usability of the data.

6. QC Samples

a. Method Blank

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

◉ Yes ○ No Comments:

ii. All method blank results less than limit of quantitation (LOQ)?

◉ Yes ○ No Comments:

iii. If above LOQ, what samples are affected?

Comments:

NA, all were below the LOQ.

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

○ Yes ○ No Comments:

NA, there were no affected samples.

v. Data quality or usability affected?

Comments:

No, there is nothing to indicate data quality or usability has been affected.

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

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

(●) Yes ( ) No Comments:

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

( ) Yes ( ) No Comments:

NA, metals nor inorganics were analyzed.

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

( ) Yes (●) No Comments:

No, there were elevated recoveries for multiple analytes, however, these analytes were not detected above the LOQ in the field samples.

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

( ) Yes (●) No Comments:

RPD for naphthalene was high in LCS/LCSD. This analyte was not detected in the field samples.

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

Comments:

None of the samples are affected because the analytes with failures were note detected in the field samples.

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

(●) Yes ( ) No Comments:

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

Comments:

This has no effect on usability since the analytes were not detected in the field samples.

c. Surrogates – Organics Only

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

(•) Yes ( ) No Comments:

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

( ) Yes (•) No Comments:

There were failed recoveries in multiple QC samples. All recoveries for field samples were acceptable.

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

(•) Yes ( ) No Comments:

Yes

iv. Data quality or usability affected?

Comments:

Data quality nor usability are affected because the analytes with the failed recoveries were not detected above the LOQ.

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

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

(•) Yes ( ) No Comments:

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

( ) Yes (•) No Comments:

Only one cooler was used which was hand delivered to the lab.

iii. All results less than LOQ?

(•) Yes ( ) No Comments:

Yes

iv. If above LOQ, what samples are affected?

Comments:

None, all results were below the LOQ.

v. Data quality or usability affected?

Comments:

No, there is nothing to indicate data quality or usability has been affected.

e. Field Duplicate

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

◉ Yes ○ No Comments:

ii. Submitted blind to lab?

◉ Yes ○ No Comments:

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

○ Yes ○ No Comments:

All results were below LOQ, therefore, RPD could not be calculated.

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

Comments:

No, there is nothing to indicate data quality or usability has been affected.

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

○ Yes ◉ No ○ Not Applicable

i. All results less than LOQ?

○ Yes ○ No Comments:

NA, an equipment blank was not collected.

ii. If above LOQ, what samples are affected?

Comments:

NA, an equipment blank was not collected.

iii. Data quality or usability affected?

Comments:

Data quality or usability is not affected because all analytes in the field samples were below the LOQ.

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

a. Defined and appropriate?

◉ Yes ○ No Comments:

APPENDIX D

Disposal Documentation

CERTIFICATE OF DISPOSAL/RECYCLE

US ecology

GENERATOR: SHORESIDE PETROLEUM
6401 LAKE OTIS PKWY
ANCHORAGE, AK 99507

DISPOSAL FACILITY: US ECOLOGY ALASKA LLC
2020 VIKING DRIVE
ANCHORAGE, AK 99501

EPA ID NUMBER: EXEMPT
MANIFEST/DOCUMENT #: BOL80565
DATE OF DISPOSAL/RECYCLE: DEC-20-2021

LINE	WASTE DESCRIPTION	CONTAINERS	TYPE	QUANTITY	UOM
1	OILY WATER (DM05)	3	DM	15	G

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

PREPARED BY: Michael Cooney

SIGNATURE: _____ **DATE:** DEC 2 0 2021

425 Outer Springer Loop Road - Palmer, AK 99645 - (907) 258-1558 - Fax (907) 746-3651 - Toll Free (877) 375-5040

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites and Prevention Preparedness and Response Programs

Contaminated Media Transport and Treatment or Disposal Approval Form

DEC HAZARD/SPILL ID #	NAME OF CONTAMINATED SITE OR SPILL	
23166	Essential 1 (former Shoreside Texaco) Bird Creek	
CONTAMINATED SITE OR SPILL LOCATION – ADDRESS OR OTHER APPROPRIATE DESCRIPTION		
Mile 101 / 100.7 Seward Highway, Girdwood, Alaska 99587		
CURRENT PHYSICAL LOCATION OF MEDIA	**SOURCE OF THE CONTAMINATION (DAY TANK, WASH BAY, FIRE TRAINING PIT, LUST, ETC.)**	
Same, in 3 closed 5 gallon buckets	leaking underground storage tank	
CONTAMINANTS OF CONCERN	**ESTIMATED VOLUME**	**DATE(S) GENERATED**
Petroleum / Diesel	15 gallons	September 10, 2021
POST TREATMENT ANALYSIS REQUIRED *(such as GRO, DRO, RRO, VOCs, metals, PFAS, and/or Chlorinated Solvents)*		
None		
COMMENTS OR OTHER IMPORTANT INFORMATION		
Decontamination and purge water from groundwater monitoring event; 1 well sampled. No DRO, VOC, or PAH analytes were detected in the sampled well. This water will be transported to Shoreside Petroleum's facility at 6401 Lake Otis Pkwy, Anchorage, AK, where it will be placed into their used oil tank which is regularly pumped out and treated by NRC.		

TREATMENT FACILITY, LANDFILL, AND/OR FINAL DESTINATION OF MEDIA	PHYSICAL ADDRESS/PHONE NUMBER
US Ecology	2020 Viking Drive, Anchorage, Alaska 99501 - (907) 258-1558
RESPONSIBLE PARTY	**ADDRESS/PHONE NUMBER**
Shoreside Petroleum	6401 Lake Otis Parkway, Anchorage, Alaska 99507 - (907) 344-4571
WASTE MANAGEMENT CO. / ORGANIZER	**ADDRESS/PHONE NUMBER**
US Ecology	619 East Ship Creek Avenue, Suite 309, Alaska 99501 - (907) 258-1558

***Note, disposal of polluted soil in a landfill requires prior approval from the landfill operator and ADEC Solid Waste Program.**

Andy Coulson
Name of the Person Requesting Approval (printed)

Environmental Scientist / EMI
Title/Association

Andy Coulson
Signature

11/10/2021
Date

(907) 272-9336
Phone Number

Jessica Hall

----------DEC USE ONLY----------

Based on the information provided, ADEC approves transport of the above mentioned material. The Responsible Party or their consultant must submit to the DEC Project Manager a copy of weight receipts of the loads transported and a post treatment analytical report, if disposed of at an approved treatment facility. The contaminated soil shall be transported as a covered load in compliance with 18 AAC 60.015.

DEC Project Manager Name (printed)

Project Manager Title

Signature

Date

Phone Number