

SUBMITTED TO:
Municipality of Anchorage
Department of Property and
Facility Management
Facility Maintenance Division
3640 East Tudor Road,
Warehouse No. 1
Anchorage, Alaska 99507

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2020 GROUNDWATER MONITORING ACTIVITIES
Former Second Avenue Easement
Tanks
1021 EAST THIRD AVENUE, ANCHORAGE, ALASKA

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Submitted To: Municipality of Anchorage Department of Property and Facility
Management
Facility Maintenance Division
3640 East Tudor Road, Warehouse No. 1
Anchorage, Alaska 99507
Attn: Travis O'Rourke

Subject: 2020 GROUNDWATER MONITORING ACTIVITIES, FORMER SECOND
AVENUE EASEMENT TANKS, 1021 EAST THIRD AVENUE, ANCHORAGE,
ALASKA

Shannon & Wilson prepared this 2020 groundwater monitoring report for the Former Second Avenue Easement Tanks site located at 1021 East Third Avenue in Anchorage, Alaska. The Property is an active Alaska Department of Environmental Conservation (ADEC) contaminated site (File No. 2100.26.326). Our scope of services was conducted per our proposal dated May 12, 2020. Our services were performed in accordance with the terms and conditions of our MOA Department of Maintenance & Operations *Professional Services Contract No. 29M&0185*. Authorization to proceed with the project was received on June 10, 2020, with Purchase Order 2020002253. This report presents the October and November 2020 groundwater monitoring results and was prepared by the undersigned.

We appreciate the opportunity to be of service to you on this project. If you have questions concerning this report, or we may be of further service, please contact us.

Sincerely,

SHANNON & WILSON, INC.

Prepared by:

Reviewed by:

Alec Rizzo
Environmental Staff

LeeAnne Osgood, P.E.
Associate

AJR:DLO:KLB

EXECUTIVE SUMMARY

The 2020 monitoring event for the former Second Avenue easement tanks was conducted in October and November 2020 and included groundwater sample collection from five monitoring wells. Two parameters (diesel range organics [DRO], and residual range organics [RRO]) were measured at concentrations greater than the applicable ADEC Table C cleanup levels in the samples collected from B4MW and B5MW. Historical data shows that these parameters are consistently detected at concentrations greater than the cleanup levels in these monitoring wells. The remaining analyte concentrations in B3MW, B4MW, B5MW, B11MW, and B17MW were either reported as non-detect or at concentrations less than the respective ADEC Table C cleanup levels.

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ACRONYMS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
AK	Alaska Method
CCIC	Cleanup Complete with Institutional Controls
DQO	Data Quality Objective
DRO	Diesel Range Organics
EPA	Environmental Protection Agency
IDW	Investigation Derived Waste
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
LDRC	Laboratory Data Review Checklist
MAC	Maximum Allowable Concentrations
MOA	Municipality of Anchorage
mg/L	Milligrams per liter
ML&P	Municipal Light & Power
MS/MSD	Matrix Spike/Matrix Spike Duplicate
mV	Millivolts
NRC	NRC Alaska, Inc.
NTU	Nephelometric Turbidity Unit
ORP	Oxidation Reduction Potential
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
RRO	Residual Range Organics
SGS	SGS North America Inc. of Anchorage, Alaska
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1 INTRODUCTION

This report presents the results of Shannon & Wilson's 2020 groundwater monitoring event for the former Second Avenue easement tanks located on the north side of the Brother Francis Shelter, at 1021 East Third Avenue, Anchorage, Alaska. The Alaska Department of Environmental Conservation's (ADEC) File Number is 2100.26.326.

2 SITE AND PROJECT DESCRIPTION

2.1 Site Location and Description

The project site is located near downtown Anchorage, Alaska. The legal description is Block 34B, Lot 1A, East Addition to Original Townsite. The property is located within the southwest quarter of Section 27, Township 13 North, Range 4 West of the Seward Meridian. A vicinity map showing the project site and surrounding area is included as Figure 1.

A site plan showing the project site features including approximate locations of former tanks, borings, test pits, and groundwater monitoring wells is included as Figure 2. The Second Avenue Easement transects the middle of an area that slopes steeply to the north. Except for Monitoring Wells B11MW and B17MW and Boring B15, the tanks, borings, test pits and wells are located within the Second Avenue Easement. Monitoring Wells B11MW and B17MW and Boring B15 are located at the bottom of the slope on the Municipal Light & Power's (ML&P) parcels identified as 1010 and 1040 East First Avenue, respectively.

2.2 Background

Three bulk storage tanks reportedly storing used engine oil for dust suppression were formerly located within the Second Avenue Easement as shown in Figure 2. Previous investigation and cleanup activities conducted by Shannon & Wilson at the project site have included underground storage tank (UST) closures and assessments, release investigations, and groundwater and storm water monitoring. A summary of the previous assessment and cleanup activities is presented in the *Additional Site Characterization, Former Second Avenue Easement Tanks, 1021 East Third Avenue, Anchorage, Alaska* report dated September 2019.

Based on the results of the 2019 Additional Site Characterization, petroleum hydrocarbon-impacted soil remains in the vicinity of the former tanks location. Concentrations of DRO and RRO remaining in the subsurface soil exceed the ADEC Maximum Allowable Cleanup (MAC) levels. Additionally, total lead concentrations in the soil exceed the ADEC cleanup

levels and the resource conservation and recovery act (RCRA) toxicity characteristic criterion for a characteristic hazardous waste.

DRO, RRO, and lead-impacted groundwater is also present on-site with the impacted groundwater plume extending off-site onto the adjacent ML&P parcels. The downgradient lateral extent of the groundwater contaminant plume has been delineated.

2.3 Project Purpose and Objectives

The project purpose is to progress towards a Cleanup Complete with Institutional Controls (CCIC) designation from the ADEC. The objective of this 2020 groundwater monitoring event is monitor contaminant concentrations in the groundwater at the site to qualitatively evaluate concentrations trends. Specific tasks of the 2020 groundwater monitoring event include:

- Collect groundwater samples from Wells B4MW, B5MW, and B11MW and analyze for volatile organic compounds (VOCs), DRO, RRO, and total lead.
- Collect a groundwater sample from Well B17MW and analyze for total lead.
- Manage investigative-derived waste (IDW).

Note Well B3MW was misidentified as Well B4MW and inadvertently sampled during the October 2020 groundwater sampling efforts. Well B4MW was therefore sampled in November 2020.

Soil excavation activities to remove soil impacted with DRO and RRO exceeding the MAC beneath and adjacent to the former tank excavation were not conducted during the 2020 field season. The excavation activities will be scheduled when the Municipality of Anchorage (MOA) secures the necessary funding.

3 FIELD ACTIVITIES

The field activities were conducted in material accordance with our May 17, 2019 *Revised Work Plan for Soil Excavation and Additional Site Characterization, Former Second Avenue Easement Tanks, 1021 East Third Avenue, Anchorage, Alaska*, approved by the ADEC in a letter dated May 22, 2019. This revised work plan detailed groundwater sampling activities to be conducted at the project site in spring and fall 2019. The approval to conduct the October 2020 groundwater sampling event under the May 17, 2019 revised work plan was provided by ADEC in an email dated October 5, 2020.

Field work was conducted by an ADEC-qualified environmental professional, as defined by 18 Alaska Administrative Code (AAC) 75.333. Analytical testing of the project samples was conducted by SGS North America Inc. (SGS) of Anchorage, Alaska. NRC Alaska, Inc. (NRC)

of Anchorage, Alaska disposed of the IDW. SGS and NRC were subcontracted to Shannon & Wilson. Field notes are provided in Appendix A.

3.1 Site Access and Preparation

Prior to initiating the 2020 groundwater monitoring event, permission to access and collect groundwater samples from the on-site and off-site monitoring wells was requested. Shannon & Wilson coordinated with the MOA to access Wells B3MW, B4MW, and B5MW located within the on-site fenced area within the 2nd Avenue easement and with ML&P representatives to request and arrange site access to Wells B11MW and B17MW located on ML&P parcels.

3.2 Groundwater Sampling

On October 15 to 17, 2020, analytical groundwater samples were collected from Wells B3MW, B5MW, B11MW, and B17MW. Monitoring Well B4MW was sampled on November 24, 2020. Sampling was initiated using a water level indicator to measure depth to water in the well casings. Low-flow purging was conducted to reduce the effects of stagnant well casing water on chemical concentrations, and to obtain a groundwater sample that was representative of the surrounding water-bearing formation. The wells were purged and sampled using a submersible pump and dedicated tubing. The submersible pump was placed within the top foot of the groundwater column. The pump rate was adjusted with a goal of limiting the sustained water drawdown to a maximum of 0.3 foot (typical pump rate of 0.3 to 0.5 liters per minute [L/min]). However, drawdown of less than 0.3 foot could not be sustained in the purging of Wells B5MW and B11MW; therefore, the pump was lowered as necessary while remaining within the top foot of the dynamic water column. If a monitoring well purged dry during sampling, the well was allowed to recover to 80 percent of its pre-purge volume prior to collecting a sample.

During the purging process, field personnel monitored water quality parameters (pH, temperature, turbidity, oxidation reduction potential [ORP], and specific conductance), drawdown, and purge volume. Purging was considered complete when at least one well volume was removed and four of the five water quality parameters stabilized. Water quality parameters were considered stabilized when three consecutive measurements collected 3 to 5 minutes apart indicated that parameters were within the following tolerance ranges: pH within 0.1 unit, temperature within 3 percent (minimum 0.2 degree Celsius), specific conductance within 3 percent, ORP within 10 millivolts (mV), and turbidity within 10 percent or less than 10 nephelometric turbidity units (NTU). The water quality parameters stabilized in Well B3MW, B4MW, B5MW, and B17MW during purging. Well B11MW purged dry before water quality parameters could stabilize. The well was allowed to recover overnight (but not greater than 24 hours) prior to being sampled. The final water quality parameters are listed in Table 1.

4 LABORATORY ANALYSIS

The groundwater samples were delivered to SGS using chain-of-custody procedures. The samples were tested on a standard 14-day turnaround time. Each project sample, including a field duplicate groundwater sample, was analyzed for DRO by Alaska Method (AK) 102, RRO by AK 103, VOCs by Environmental Protection Agency (EPA) Method 8260D, and total lead by EPA Method 6020A, except for Sample B17MW. Sample B17MW was only analyzed for total lead by EPA Method 6020A. One trip blank sample accompanied the analytical sample containers from and to the laboratory during each sampling event and was tested for VOCs by EPA Method 8260D. Analytical results are summarized in Table 2. Copies of the laboratory reports are provided in Appendix B. Note that Sample 102104-B4MW in SGS Laboratory Report Number 1205774 was collected from Well B3MW.

5 DISCUSSION OF ANALYTICAL RESULTS

The groundwater results were compared to applicable cleanup levels listed in the Oil and Other Hazardous Substances Pollution Control Regulations, 18 AAC 75 (November 7, 2020). Groundwater criteria are based on Table C, 18 AAC 75.345. The cleanup levels and analytical results for the groundwater samples are listed in Table 2. A summary of historical analytical results is listed in Table 3.

5.1 Monitoring Well Samples

Five groundwater samples (B3MW, B4MW, B5MW, B11MW, and B17MW) and one field duplicate sample (B14MW, collected from Well B3MW) were submitted for laboratory analysis. The DRO concentration reported in Sample B5MW (6.13 milligrams per liter [mg/L]) exceeds the ADEC Table C cleanup level of 1.5 mg/L. The RRO concentrations reported in Samples B4MW (1.33 mg/L) and B5MW (4.64 mg/L) exceed the ADEC Table C cleanup level of 1.1 mg/L.

VOC analytes were detected in Samples B4MW and B5MW at concentrations less than the ADEC Table C cleanup levels. Lead was measured in Samples B3MW, B14MW (collected from Well B3MW), B4MW, B5MW, and B11MW at concentrations less than the ADEC Table C cleanup level of 0.015 mg/L. The maximum lead concentration was reported in Sample B5MW (0.0110 mg/L).

As shown in Table 3, the current groundwater data are generally consistent with the ranges of historical data with the exception of lead. The reported concentrations of lead at Wells B4MW and B11MW have decreased to less than the ADEC Table C cleanup level. Further, the data indicate Well B11MW delineates the down-gradient boundary of the impacted groundwater plume.

5.2 Quality Assurance Summary

The project laboratory implements on-going quality assurance/quality control procedures to evaluate conformance to applicable ADEC data quality objectives (DQOs). Internal laboratory controls to assess data quality for this project include surrogates, method blanks, laboratory control sample/laboratory control sample duplicates (LCS/LCSD), and matrix spike/matrix spike duplicates (MS/MSD) to assess precision, accuracy, and matrix bias. If a DQO was not met, the project laboratory provides a report specific note identifying the problem in the Case Narrative section of the Laboratory Analysis Report (See Appendix B).

External quality controls include field records, a groundwater duplicate sample set, and trip blanks for the groundwater samples. The water trip blank did not contain detectable concentrations of volatile analytes.

Duplicate sample sets were collected to assess the sampling precision and calculate the relative percent difference (RPD). The RPD between the project sample and associated duplicate results is a measure of precision affected by matrix heterogeneity, sampling technique, and laboratory analyses. The ADEC recommends an RPD of less than 30 percent for groundwater field duplicates and 20 percent for laboratory control samples. Except for total lead (68%), the RPD for each of the detected parameters is less than 30 percent. The total lead concentrations detected in the primary sample (0.00309 mg/L) and duplicate sample (0.00152 mg/L) are less than the cleanup level; therefore, the data are considered acceptable for the purposes of this report.

Shannon & Wilson reviewed the SGS data deliverables and completed the ADEC's Laboratory Data Review Checklist (LDRC) for each data package, which are included in Appendix B. Quality control discrepancies and the impact to data quality/usability are described in further detail in the LDRC. In our opinion, no non-conformances that would adversely impact data usability for project data objectives were noted, and we find the project data to be complete and useable to support the project purpose and objectives.

6 INVESTIGATION DERIVED WASTE DISPOSAL

The purge water from Wells B3MW, B4MW, B5MW, B11MW, and B17MW was stored in one, labeled 55-gallon drum. Groundwater samples from Wells B4MW and B5MW had DRO and RRO concentrations greater than the ADEC Table C cleanup levels. Shannon & Wilson coordinated with the ADEC to dispose of the purge water. The ADEC Contaminated Media Transport and Treatment Approval form is provided in Appendix C. On February 2, 2021, NRC transported one drum of IDW to their Anchorage facility for processing and disposal. A copy of the waste manifest is provided in Appendix C.

7 SUMMARY

The 2020 groundwater monitoring activities consisted of collecting groundwater samples to monitor DRO, RRO, and lead-contaminated groundwater at the site. The groundwater samples collected from Well B4MW and B5MW contain DRO and RRO concentrations that exceed the ADEC Table C cleanup levels. Historical data shows that these parameters are consistently detected at concentrations greater than the cleanup levels in these monitoring wells. The remaining analyte concentrations in B3MW, B4MW, B5MW, B11MW, and B17MW were either reported as non-detect or at concentrations less than the respective ADEC Table C cleanup levels.

8 CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of our clients and their representatives in the study of this site. The findings presented within this report are based on the limited sampling and analyses that we conducted. The findings should be construed in the context of the scope of sampling and not as definite conclusions regarding the Site's groundwater conditions. The sampling and analyses performed can only provide you with our professional judgment as to the environmental characteristics of this site, and in no way guarantees that an agency or its staff will reach the same conclusions as Shannon & Wilson, Inc. The data presented in this report should be considered representative of the time of our site assessment. Changes in site conditions can occur over time, due to natural forces or human activity. In addition, changes in government codes, regulations, or laws may occur. Because of such changes beyond our control, our observations and interpretations may need to be revised.

Shannon & Wilson has prepared the attachments in Appendix D, "Important Information About Your Geotechnical/Environmental Report," to clarify use and limitations of our report. You are advised that various state and federal agencies (ADEC, EPA, etc.) may require the reporting of this information. Shannon & Wilson does not assume the responsibility for reporting these findings and therefore, has not, and will not, disclose the results of this study, except with your permission or as required by law.

**TABLE 1
WELL SAMPLING LOG**

	Monitoring Well Number				
	B3MW	B4MW	B5MW	B11MW*	B17MW
Water Level Measurement Data					
Date Water Level Measured	10/15/20	11/24/20	10/15/20	10/15/20	10/15/20
Time Water Level Measured	10:22	11:00	10:10	10:50	10:46
Measured Depth to Water (ft below TOC)	5.16	3.31	10.04	2.16	7.34
Height of TOC bgs (ft)	-0.22	-0.19	-0.22	-0.30	-0.65
Measured Depth to Water (ft bgs)	5.38	3.50	10.26	2.46	7.99
Surveyed TOC Elevation (ft)	96.45	97.45	98.35	78.31	77.83
Water Level Elevation (ft)	91.07	94.14	88.31	76.15	70.49
Purging/Sampling Data					
Date Sampled	10/15/20	11/24/20	10/15/20	10/17/20	10/15/20
Time Sampled	12:12	11:42	13:27	11:35	14:50
Measured Depth to Water (ft below TOC)	5.16	3.31	10.04	2.16	7.34
Total Depth of Well (ft below TOC)	5.93	11.02	12.11	14.94	12.48
Water Column in Well (ft)	0.77	7.71	2.07	12.78	5.14
Gallons per Foot	0.16	0.16	0.16	0.16	0.16
Water Column Volume (gallons)	0.12	1.23	0.33	2.04	0.82
Total Volume Pumped (gallons)	1.7	1.4	0.8	2.1	1.9
Sampling Method	SP	SP	SP	SP	SP
Diameter of Well Casing	2-inch	2-inch	2-inch	2-inch	2-inch
Water Quality Data					
Temperature (°C)	9.51	4.10	8.38	11.30	12.00
Specific Conductance (µS/cm)	650	717	776	628	627
pH (Standard Units)	6.59	6.16	6.43	7.93	6.30
Oxidation Reduction Potential (mV)	-35	6	-44	235	-4
Turbidity (NTU)	0.0	5.8	1.2	191	0.0
Remarks	Duplicate Sample B14MW			Well purged dry; PVC well casing cut down after sampling	

Notes:

Water quality parameters were measured with a Horiba water quality meter and Hach 2100 Turbidimeter.

Level Loop Survey conducted by Shannon & Wilson, Inc. on July 9, 2019

TOC = top of casing

°C = degrees Celsius

ft = feet

mV = millivolt

µS/cm = microsiemens per centimeter

NTU = Nephelometric Turbidity Units

bgs = below ground surface

SS = Swing Sampler

SP = Submersible pump

* = Well B11MW frost jacked; cut down after collecting groundwater sample

TABLE 2
GROUNDWATER SAMPLE ANALYTICAL RESULTS

Parameter Tested	Units	Method*	Groundwater Cleanup Level**	Sample ID Number^ and Water Depth in Feet bgs (See Table 1, Figure 2, and Appendix B)							
				Monitoring Wells						Trip Blanks	
				B3MW 5.38	B14MW~ 5.38	B4MW 3.50	B5MW 10.26	B11MW 2.46	B17MW 7.99	TB1	TB2
Diesel Range Organics (DRO)	mg/L	AK 102	1.5	0.366 J	0.377 J	0.810	6.13	0.345 J	-	-	-
Residual Range Organics (RRO)	mg/L	AK 103	1.1	0.704	0.815	1.33	4.64	0.534	-	-	-
Volatile Organic Compounds (VOCs)											
Benzene	mg/L	EPA 8260D	0.0046	<0.000200	<0.000200	<0.000200	0.000304 J	<0.000200	-	<0.000200	<0.000200
Toluene	mg/L	EPA 8260D	1.1	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500	-	<0.000500	<0.000500
Ethylbenzene	mg/L	EPA 8260D	0.015	<0.000500	<0.000500	<0.000500	0.000460 J	<0.000500	-	<0.000500	<0.000500
Xylenes (total)	mg/L	EPA 8260D	0.190	<0.00150	<0.00150	<0.00150	<0.00150	<0.00150	-	<0.00150	<0.00150
1,2,4-Trimethylbenzene	mg/L	EPA 8260D	0.056	<0.000500	<0.000500	<0.000500	0.00119	<0.000500	-	<0.000500	<0.000500
1,2-Dichloroethane	mg/L	EPA 8260D	0.0017	<0.000250	<0.000250	<0.000250	0.000955	<0.000250	-	<0.000250	<0.000250
Dichlorodifluoromethane - mg/L	mg/L	EPA 8260D	7.3	<0.000500	<0.000500	0.000595 J	<0.000500	<0.000500	-	<0.000500	<0.000500
P & M - Xylenes	mg/L	EPA 8260D	-	<0.00100	<0.00100	<0.00100	0.000667 J	<0.00100	-	<0.00100	<0.00100
sec-Butylbenzene	mg/L	EPA 8260D	2	<0.000500	<0.000500	<0.000500	0.000328 J	<0.000500	-	<0.000500	<0.000500
Other VOCs	mg/L	EPA 8260D	varies	ND	ND	ND	ND	ND	-	ND	ND
Total Lead	mg/L	EPA 6020A	0.015	0.00309 E	0.00152 E	0.000857 J	0.0110	0.00359	<0.000500	-	-

Notes:

- * See Analytical Laboratory Report for compounds tested, methods, and laboratory reporting limits
- ** Groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (November 7, 2020)
- ^ = sample ID No. preceded by 102104-
- mg/L = milligrams per liter
- 0.704** = analyte detected
- 6.13** = reported concentration is equal to or exceeds the ADEC Table C cleanup level
- <0.000200 = analyte not detected; laboratory limit of detection is 0.000200 mg/L
- bgs = below ground surface
- = not applicable
- ~ = duplicate of preceding sample
- J = concentration is an estimate less than the limit of quantitation (LOQ). See the SGS laboratory report for details.
- ND = analyte not detected
- E = result is an estimate due to a primary/field duplicate sample pair relative percent difference (RPD) failure.

TABLE 3
SUMMARY OF HISTORICAL GROUNDWATER DATA

Monitoring Well	Date	Parameter Tested and Cleanup Level* (in mg/L)							
		GRO 2.2	DRO 1.5	RRO 1.1	Benzene 0.0046	Toluene 1.1	Ethylbenzene 0.015	Xylenes 0.190	Lead 0.015
B3MW	8/7/00	0.135	<0.297	<0.495	<0.00100	<0.00100	<0.00100	<0.00100	< 0.0667
	2/22/01	<0.0900	0.660	0.665	<0.000500	<0.00200	<0.00200	<0.00200	-
	6/5/01	<0.0900	<0.495	<0.990	<0.000500	<0.00200	<0.00200	<0.00200	-
	9/10/01	<0.0900	<0.495	<0.990	<0.000500	<0.00200	<0.00200	<0.00200	-
	12/13/01	<0.0900	<0.505	<1.01	<0.000500	<0.00200	<0.00200	<0.00200	-
	6/14/04	<0.0900	<0.341	<0.568	<0.000500	<0.00200	<0.00200	<0.00200	-
	5/6/14	-	-	-	-	-	-	-	-
	10/20/16	-	0.50	0.443 J	<0.000200	<0.000500	<0.000500	<0.00150	<0.000500
	6/27/19	-	0.420 J	0.558	<0.000200	<0.000500	<0.000500	<0.00150	<0.000500
	10/15/20 [^]	Well B3MW removed from the groundwater monitoring program per ADEC September 23, 2019 letter.							
	-	0.377 J~	0.815~	<0.000200	<0.000500	<0.000500	<0.00150	0.00309 E~	
B4MW	8/8/00	<0.0900	1.45	2.77	<0.00100	<0.00100	<0.00100	<0.00100	< 0.0667
	2/22/01	0.917	1.86	2.31	0.00242	<0.00200	0.00351	0.00601	-
	6/5/01	0.518	1.33	1.47	0.00205	0.00633	0.00215	0.00486	-
	9/10/01	0.171	2.18	3.61	0.00107	<0.00200	<0.00200	<0.00200	-
	12/13/01	0.708	1.12	<0.990	0.00317	<0.00200	0.00535	0.01550	-
	6/17/04	0.212	1.01	1.19	0.00117	<0.00200	<0.00200	<0.00200	-
	5/6/14	-	2.60	1.47	0.000230 J	<0.000500	0.000370 J	0.00170 J	0.00501
	10/21/16	-	2.32~	1.18~	<0.000200	<0.000500	<0.000500	<0.00150	0.0224~
	6/27/19	-	1.60 E~	1.27 E~	<0.000200	0.000411 J~	<0.000500	<0.00150	0.0396 E~
	10/28/19	-	5.78 E~	3.29 E~	<0.000200	<0.000500	<0.000500	<0.00150	0.00331 ~
11/24/20	-	0.810	1.33	<0.000200	<0.000500	<0.000500	<0.00150	0.000857 J	
B5MW	8/8/00	<0.0900	1.29	1.24	<0.00100	<0.00100	<0.00100	0.00247	< 0.0667
	2/22/01	0.221	3.89	8.90	0.00102	<0.00200	0.00612	0.01892	-
	6/5/01	0.257	3.68	9.53	0.000932	<0.00200	0.00447	0.01593	-
	9/10/01	0.148	4.32	9.69	0.000897	<0.00200	0.00363	0.00937	-
	12/13/01	0.0904	0.863	1.12	0.000899	0.00240	0.00345	0.01874	-
	6/17/04	<0.0900	0.879	1.16	<0.000500	<0.00200	<0.00200	0.00308	-
	5/6/14	-	1.80	1.79	0.000260 J	<0.000500	0.000440 J	0.00239 J	0.0201
	10/21/16	-	1.57	1.19	<0.000200	<0.000500	<0.000500	<0.00150	0.0399
	6/28/19	-	1.58	1.79	0.000199 J	<0.000500	0.000385 J	0.00156 J	0.0636
	10/28/19	-	2.10	3.97	<0.000200	<0.000500	<0.000500	<0.00150	0.0150
10/15/20	-	6.13	4.64	<0.000200	<0.000500	<0.000500	<0.00150	0.0110	

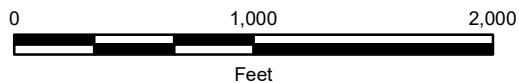
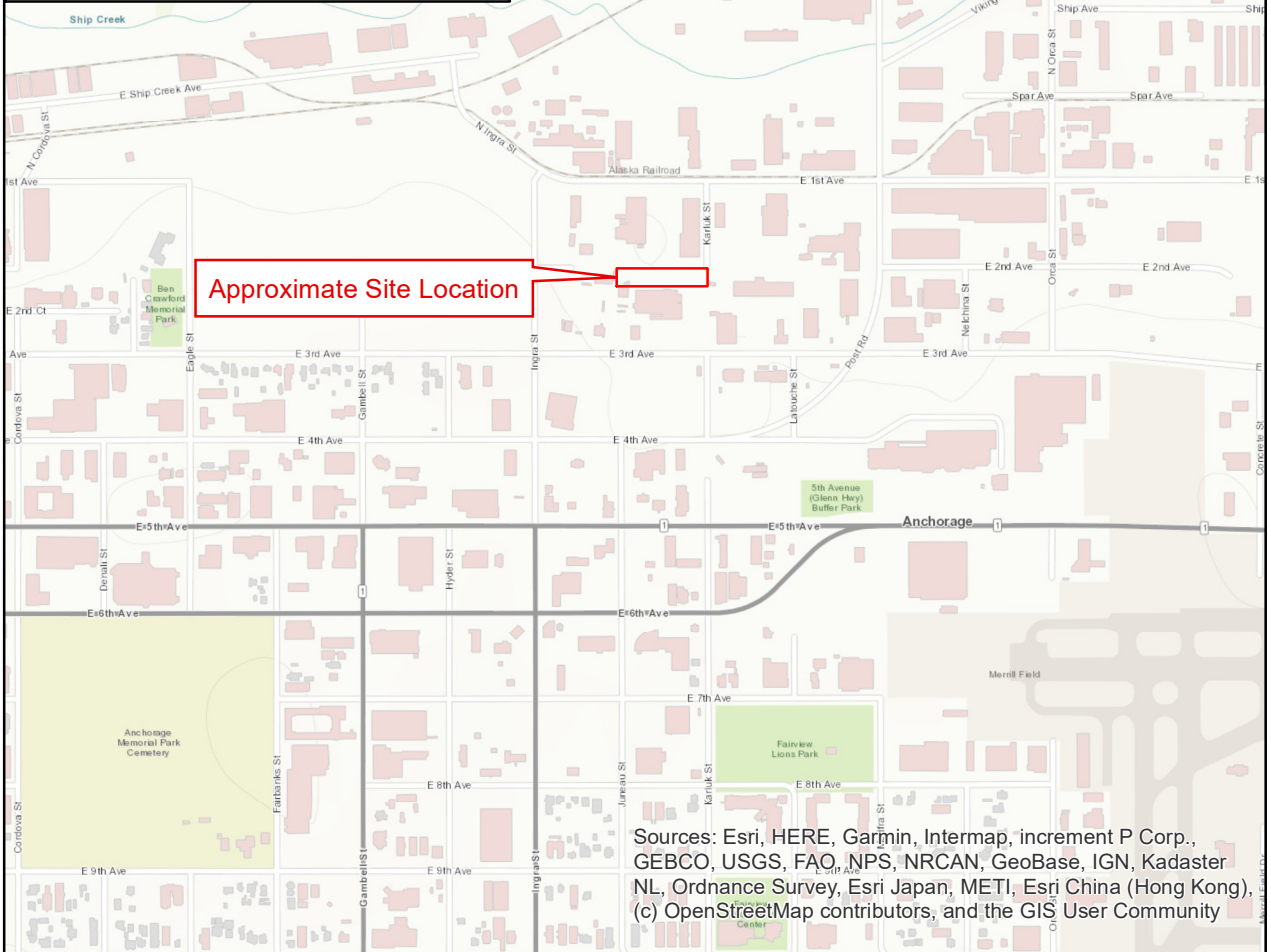
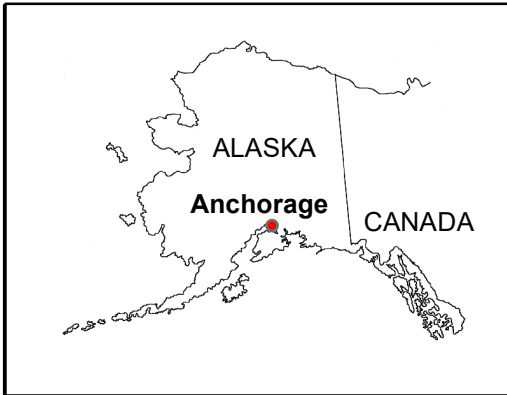
See notes on Page 2.

TABLE 3
SUMMARY OF HISTORICAL GROUNDWATER DATA

Monitoring Well	Date	Parameter Tested and Cleanup Level* (in mg/L)							
		GRO 2.2	DRO 1.5	RRO 1.1	Benzene 0.0046	Toluene 1.1	Ethylbenzene 0.015	Xylenes 0.190	Lead 0.015
B10MW	8/7/00	<0.0900	<0.300	<0.500	<0.00100	<0.00100	<0.00100	<0.00100	<0.0667
	2/22/01†	-	-	-	-	-	-	-	-
	6/5/01	<0.0900	<0.500	<1.00	<0.000500	<0.00200	<0.00200	<0.00200	-
	9/10/01	<0.0900	<0.495	<0.990	<0.000500	<0.00200	<0.00200	<0.00200	-
	12/13/01	<0.0900	<0.495	<0.990	<0.000500	<0.00200	<0.00200	<0.00200	-
	6/17/04	<0.0900	<0.341	<0.568	<0.000500	<0.00200	<0.00200	<0.00200	-
Well B10MW is lost/assumed destroyed.									
B11MW	2/22/01	<0.0900	<0.345	<0.575	<0.000500	<0.00200	<0.00200	<0.00200	-
	6/5/01	<0.0900	<0.538	<1.08	<0.000500	<0.00200	<0.00200	<0.00200	-
	9/10/01	<0.0900	<0.495	<0.990	<0.000500	<0.00200	<0.00200	<0.00200	-
	12/13/01†	-	-	-	-	-	-	-	-
	6/17/04	<0.0900	<0.379	<0.581	<0.000500	<0.00200	<0.00200	<0.00200	-
	5/7/14	-	0.282 J	0.299 J	<0.000200	<0.000500	<0.000500	<0.00150	0.0371
	10/21/16	-	0.627	0.846	<0.000200	<0.000500	<0.000500	<0.00150	0.109
	6/28/19	-	0.221 J	<0.240	<0.000200	<0.000500	<0.000500	<0.00150	0.0395
	10/28/19	-	0.574 J	0.980	<0.000200	<0.000500	<0.000500	<0.00150	0.00576
10/17/20	-	0.345 J	0.534	<0.000200	<0.000500	<0.000500	<0.00150	0.00359	
B12MW	5/6/14	-	1.54~	5.11~	<0.000200	<0.000500	<0.000500	0.00128 J~	0.341~
	10/20/16	-	0.497 J	0.240 J	<0.000200	<0.000500	<0.000500	<0.00150	<0.000500
Well B12MW positioned within planned excavation footprint and not included in groundwater monitoring program.									
B13MW	5/6/14	Water not encountered in well following installation							
	10/14/16	Water not encountered on 10/14/2016. Well Decommissioned 10/14/2016.							
B14MW	5/6/14	-	<0.308	<0.256	<0.000200	<0.000500	<0.000500	<0.00150	<0.000500
	6/27/19	-	0.212 J	<0.236	<0.000200	<0.000500	<0.000500	<0.00150	<0.000500
Well B14MW removed from the groundwater monitoring program per ADEC September 23, 2019 letter.									
B17MW	6/28/19	-	-	-	-	-	-	-	<0.000500
	10/28/19	-	-	-	-	-	-	-	<0.000500
	10/15/20	-	-	-	-	-	-	-	<0.000500

Notes:

- * = groundwater cleanup levels provided in Table 2
- † = monitoring well frozen, not sampled
- mg/L = milligrams per liter
- <0.0900 = analyte not detected; laboratory limit of detection is 0.0900 mg/L
- 1.86** = reported concentration is equal to or exceeds the ADEC cleanup level
- 0.135** = analyte detected
- E = result is an estimate due to a primary/field duplicate sample pair relative percent difference (RPD) failure.
- = not applicable
- ~ = Analytical results for the sample reflect the higher concentrations for a duplicate set
- ^ = B3MW misidentified as B4MW and sampled in 2020 groundwater monitoring event.



1021 East Third Avenue
Anchorage, AK

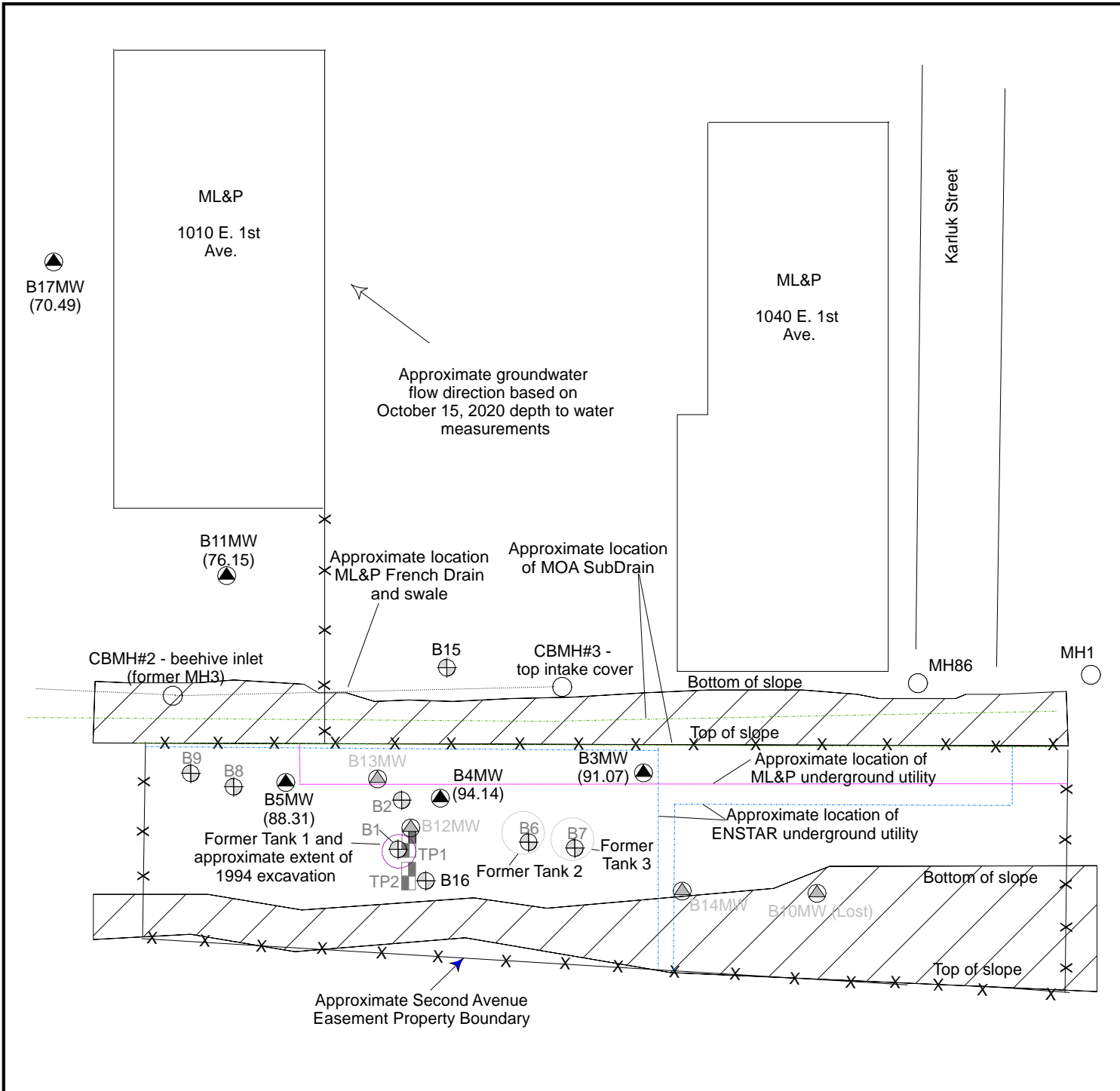
VICINITY MAP

February 2021






102104-003



SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

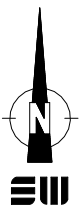
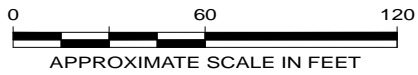
FIG. 1




LEGEND

- 
 Approximate location of soil boring advanced by Shannon & Wilson in September 1996 (Boring B1 and B2), July 2000 (Borings B6, B7, B8, and B9), October 2016 (Borings B15 and B16)
- 
 Approximate location of monitoring well installed by Shannon & Wilson in July 2000 (Well B10MW), April 2014 (Wells B12MW and B13MW), October 2016 (Well B14MW), and June 2019 (B17MW).
- 
 Approximate location of monitoring well sampled in October and November 2020. Approximate groundwater elevation based on water level measurements (taken on October 15, 2020 and November 24, 2020) and June 2019 level-loop survey. The monitoring wells were installed by Shannon & Wilson in July 2000 (Wells B3MW, B4MW, B5MW), February 2011 (Well B11MW), and June 2019 (B17MW).
- 
 Approximate location of Test Pit TP2 advanced by Shannon & Wilson in June 2001.
- 
 Approximate location of former storage tank

- 
 Approximate location of Manhole CBMH#2
- 
 Approximate location of fence/property boundary



1021 East Third Avenue Anchorage, Alaska	
SITE PLAN	
February 2021	102104-003
 SHANNON & WILSON, INC. <small>Geotechnical & Environmental Consultants</small>	Fig. 2

Appendix A: Field Notes

Appendix A

Field Notes

APPENDIX A: FIELD NOTES



LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 102104 Location: 1021 E 3rd Ave Weather: cloudy 39°F
 Well No.: ~~102104~~ B3MW
 Date: 10/15/20 Time Started: 11:10 Time Completed: 12:40
 Develop Date: _____ Develop End Time: _____ (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:22 Date of Depth Measurement: 10/15/20
 Measuring Point (MP): Top of PVC Casing Top of Steel Protective Casing / Other: 10/15/20
 Diameter of Casing: _____ Well Screen Interval: _____
 Total Depth of Well Below MP: 5.79 Product Thickness, if noted: _____
 Depth-to-Water (DTW) Below MP: 5.16 sol bottom, last even 10.83 → 0.91 gal in well
 Water Column in Well: 0.63 (Total Depth of Well Below MP - DTW Below MP)
 Gallons per foot: 0.16
 Gallons in Well: 0.10 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 10/15/20 Time Started: 11:42 Time Completed: 12:30
 Three Well Volumes: 0.3 (Gallons in Well x 3)
 Gallons Purged: 1.7 Depth of Pump (generally 2 ft from bottom): 0.2 From top
 Max. Drawdown (generally 0.3 ft): 0.08 Pump Rate: _____
 Well Purged Dry: Yes No (If yes, use Well Purged Dry Log)

Pump = 695 gpm

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO: (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
11:44	<0.1	0.1	5.23	0.07	11.36	634		6.39	124	458
11:51	0.5	0.2	5.24	0.08	10.51	647		6.25	95	382
11:54	0.7	0.2	5.24	0.08	9.90	653		6.29	51	16.5
11:57	0.9	0.2	5.24	0.08	9.79	654		6.35	26	3.0
12:00	1.1	0.2	5.23	0.07	9.71	653		6.43	4	0.6
12:03	1.3	0.2	5.23	0.07	9.67	652		6.48	-11	0.0

SAMPLING DATA

Odor: none Color: dark brown, sed. to clear
 Sample Designation: ~~102104~~ 102104-B4MW Time / Date: 12:12 10/15/20
 QC Sample Designation: 102104-B14MW Time / Date: 12:42 10/15/20
 QA Sample Designation: _____ Time / Date: _____

Evacuation Method: Submersible Pump / Other: min. valve
 Sampling Method: Submersible Pump / Other: min. valve

Water Quality Instruments Used/Manufacturer/Model Number: Horiba
 Calibration Info (Time, Ranges, etc): 10/15/20 8:00 annual

Remarks: B3MW inadvertently sampled instead of well B4MW

Sampling Personnel: STB

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
 ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

1 well volume



Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 102104 Location: 1021 E. 3rd Ave Site: _____
 Well No.: #4 MW B3MW
 Date: 10/15/20

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
✓ 12:06	1.4	0.8	5.27	0.07	9.62 ✓	652 ✓		6.52 ✓	-21 ✓	0.0 ✓
✓ 12:09	1.5	0.8	5.23	0.07	9.56 ✓	651 ✓		6.56 ✓	-28 ✓	0.0 ✓
✓ 12:12	1.7	0.2	5.23	0.07	9.51 ✓	650 ✓		6.59 ✓	-35 ✓	0.0 ✓
		sample	12:12							

	Interval (minutes)	Pump Rate (mL/min):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
ADEC (May 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA (Jan. 2010)	5	50	<0.3	±3%	±3%	±10%	±0.1	±10	±10% or <5 NTU

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
 ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.



LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 10204 Location: 1021 E. 3rd Ave Weather: cloudy 39°F
 Well No.: B5MW
 Date: 10/15/20 Time Started: 12:40 Time Completed: 14:00
 Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:10 Date of Depth Measurement: 10/15/20
 Measuring Point (MP): Top of PVC Casing Top of Steel Protective Casing / Other: —
 Diameter of Casing: 2" Well Screen Interval: —
 Total Depth of Well Below MP: 12.11 Product Thickness, if noted: —
 Depth-to-Water (DTW) Below MP: 10.04
 Water Column in Well: 2.07 (Total Depth of Well Below MP - DTW Below MP)
 Gallons per foot: 0.16
 Gallons in Well: 0.33 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 10/15/20 Time Started: 12:59 Time Completed: 13:37
 Three Well Volumes: 0.99 (Gallons in Well x 3)
 Gallons Purged: 0.8 Depth of Pump (generally 2 ft from bottom): 11ft
 Max. Drawdown (generally 0.3 ft): 1.30 Pump Rate: 0.1 gpm
 Well Purged Dry: Yes No (If yes, use Well Purged Dry Log)

lower pump

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO: (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
13:05	0.2	0.1	10.61	0.57	8.20	750		6.36	-31	46.4
13:09	0.4	0.1	10.69	0.65	8.24	760		6.35	-33	61.4
13:12	0.5	0.1	10.71	0.67	8.24	762		6.39	-37	52.2
13:16	0.5	0.1	10.89	0.85	8.43	771		6.39	-39	16.7
13:21	0.7	0.1	11.15	1.11	8.39	769		6.41	-42	8.3
13:25	0.8	0.1	11.34	1.30	8.38	776		6.43	-44	1.2

SAMPLING DATA

Odor: none Color: clear
 Sample Designation: 102104 - B5MW Time / Date: 13:27 10/15/20
 QC Sample Designation: — Time / Date: —
 QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: mini
 Sampling Method: Submersible Pump / Other: mini
 Water Quality Instruments Used/Manufacturer/Model Number: Horiba
 Calibration Info (Time, Ranges, etc): 10/15/20 8:00 accuracy

Remarks: —

Sampling Personnel: JKH

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
 ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23

min 1 well ✓



Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: _____ Location: _____ Site: _____
 Well No.: _____
 Date: _____

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

	Interval (minutes)	Pump Rate (mL/min):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
ADEC (May 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA (Jan. 2010)	5	50	<0.3	±3%	±3%	±10%	±0.1	±10	±10% or <5 NTU

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
 ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.



LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 102104 Location: 1021 E. 3rd Ave Weather: Clear 30°F
 Well No.: B11MW
 Date: 10/16/20 Time Started: 11:50 Time Completed: 14:17 JKH
 Develop Date: _____ Develop End Time: _____ (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:50 Date of Depth Measurement: 10/15/20
 Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: _____
 Diameter of Casing: 2" Well Screen Interval: _____
 Total Depth of Well Below MP: 14.94 Product Thickness, if noted: _____
 Depth-to-Water (DTW) Below MP: 2.16
 Water Column in Well: 12.78 (Total Depth of Well Below MP - DTW Below MP)
 Gallons per foot: 0.16
 Gallons in Well: 2.04 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 10/16/20 Time Started: 12:15 Time Completed: 13:21
 Three Well Volumes: 6.13 (Gallons in Well x 3)
 Gallons Purged: 2.1 Depth of Pump (generally 2 ft from bottom): 3' 0" - lowered to
 Max. Drawdown (generally 0.3 ft): 7.43 Pump Rate: 0.1
 Well Purged Dry: BM = 2.31 Yes No (If yes, use Well Purged Dry Log)

lower pump to stay 0.1 l/min
Time: 12:20

Time	Gallons	Pump Rate (L/min)	DTW (ft BMP)	Drawdown (ft)	Temp (°C)	Sp. Cond. (uS/cm)	DD (mg/L)	pH (S.U.)	ORP (mV)	Turb (NTU)
12:20	0.1	0.1	3.35	1.04	11.01	62		5.80	242	15.8
12:23	0.2	0.1	3.70	1.39	9.50	49		5.52	252	41.3
12:26	0.3	0.1	4.19	1.88	10.34	54		5.64	249	57.0
12:29	0.4	0.1	4.39	2.08	10.21	54		5.59	255	58.6
12:32	0.4	0.1	4.91	—	10.36	53		5.53	260	63.7
12:36	0.5	0.1	4.91	2.60	10.75	55		5.70	251	54.1

SAMPLING DATA

Odor: None Color: Clear to tan & cloudy
 Sample Designation: 102104-B11MW Time / Date: 10/17/20 11:35
 QC Sample Designation: _____ Time / Date: _____
 QA Sample Designation: _____ Time / Date: _____

Evacuation Method: Submersible Pump / Other: mini whale
 Sampling Method: Submersible Pump / Other: mini whale
 Water Quality Instruments Used/Manufacturer/Model Number: Horiba & turb #3
 Calibration Info (Time, Ranges, etc): Ancocal 10/16/20
 Remarks: Frost jacked, no holes, test monument lid sticking up 10/17/20 cut down well after collecting sample
 Sampling Personnel: JKH

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
 ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23



Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 102104 Location: _____ Site: _____
 Well No.: B4MW
 Date: 10/16/20

BM = 2.81

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
12:39	—	—	—	—	11.33	54	—	5.63	255	50.7
12:42	0.7	0.1	6.79	4.25	11.06	58	—	5.25	224	63.7
12:46	0.8	0.1	8.07	—	10.54	245	—	6.76	238	309
12:49	1.0	0.2	8.07	5.76	10.79	225	—	6.83	225	510
12:53	1.3	0.2	8.64	6.33	10.52	215	—	7.03	214	7100-0
12:56	1.4	0.1					switch to MicroTPW			turn
12:56	1.4	0.1	8.90	6.59	10.75	207	—	7.11	207	553.3
12:59	1.6	0.2	9.04	6.73	10.70	198	—	7.44	197	758.4
13:02	1.7	0.1	9.37	7.06	10.77	579	—	7.88	185	917.0
13:05	1.8	0.1	9.49	7.18	10.64	653	—	8.06	163	1044
13:08	1.9	0.1	9.56	7.25	10.40	639	—	8.17	160	1071
13:11	2.0	0.1	9.66	7.35	10.20	668	—	8.27	150	71100
13:18	2.1	0.1	9.74	7.43	10.39	720	—	8.39	138	7100
		13:24	turn off pump							1022

Interval (minutes)	Pump Rate (mL/min):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
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ADEC (May 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA (Jan. 2010)	5	50	<0.3	±3%	±3%	±10%	±0.1	±10	±10% or <5 NTU

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
 ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.



WELL PURGED DRY LOG

Shannon & Wilson, Inc.

Job No: 102104 Location: 1021 E, 3rd Ave Weather: clear 30°F
 Concern: _____ Well No.: B11mw
 Date: 10/16/20 - 10/17/20 Time Started: 11:50 (10/16/20) Time Completed: 13:21 14:17 10/16/20
10/17/20 11:05 (10/17/20) 11:58 (10/17/20)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:50 11:50 Date of Depth Measurement: 10/16/20
 Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: Benchmark
 Diameter of Casing: 2" Well Screen Interval: _____
 Total Depth of Well Below MP: 14.94 Product Thickness, if noted: _____
 Depth-to-Water (DTW) Below MP: 2.31 11:5
 Water Column in Well: 12.63 (Total Depth of Well Below MP - DTW Below MP)
 Gallons per foot: 0.16
 Gallons in Well: 2.02 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 10/16/20 Time Started: 12:15 Time Completed: 13:21
 80% Recovery Water Column: 10.10 (Water Column in Well x 0.8)
 80% Recovery DTW: 4.84 (Initial DTW + (Water Col. - 80% Recovery Water Col.)

	Time Well Purged Dry	Time Well Was 80% Recovered	DTW	Pump Rate
<u>10/16/20</u>	<u>13:21</u>	<u>—</u>	<u>9.74</u>	<u>0.1</u>
<u>10/17/20</u>	<u>11:34</u>	<u>11:34</u>	<u>4.81</u>	<u>0.1</u>

FIELD PARAMETERS AT TIME OF SAMPLING

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft BMP):	Temp: (°C)	Sp. Cond.: (uS/cm)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
<u>11:34</u>	<u>0.1</u>	<u>0.1</u>	<u>—</u>	<u>—</u>	<u>11.30</u>	<u>628</u>	<u>7.93</u>	<u>235</u>	<u>191</u>

SAMPLING DATA

Odor: None Color: clear
 Sample Designation: 102104 - B11mw Time / Date: 11:35 10/17/20
 QC Sample Designation: — Time / Date: —
 QA Sample Designation: — Time / Date: —

Evacuation Method: Whale Pump/Bladder Pump / Other: mini whale
 Sampling Method: Whale Pump/Bladder Pump / Other: mini whale

Remarks: 10/17/20 11:10 @ 4.86 j 11:34 start pump 10/17/20 11:41 pump off

Sampling Personnel: JCH



Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Job No: 102104 Location: 1021 E 3rd Ave Weather: cloudy 39°F
 Well No.: B17MW
 Date: 10/15/20 Time Started: 14:14 Time Completed: 15:06
 Develop Date: _____ Develop End Time: _____ (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:46 Date of Depth Measurement: 10/15/20
 Measuring Point (MP) Top of PVC Casing / Top of Steel Protective Casing / Other: _____
 Diameter of Casing: 2" Well Screen Interval: _____
 Total Depth of Well Below MP: 12.46 Product Thickness, if noted: _____
 Depth-to-Water (DTW) Below MP: 7.34
 Water Column in Well: 5.14 (Total Depth of Well Below MP - DTW Below MP)
 Gallons per foot: 0.16
 Gallons in Well: 0.82 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 10/15/20 Time Started: 14:23 Time Completed: 14:51
 Three Well Volumes: 2.47 (Gallons in Well x 3)
 Gallons Purged: 1.9 Depth of Pump (generally 2 ft from bottom): 8.2 ft
 Max. Drawdown (generally 0.3 ft): 0.04 Pump Rate: 0.5
 Well Purged Dry: Yes No (If yes, use Well Purged Dry Log)

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO: (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
14:26	0.2	0.2	7.38	0.04	10.73	589		6.20	-10	117
14:29	0.4	0.4	7.37	0.03	11.03	594		6.32	-7	36.6
14:33	0.6	0.3	7.38	0.04	11.23	598		6.36	-9	25.9
14:38	0.7	0.2	7.38	0.04	11.28	606		6.36	-15	60.0
14:40	1.0	0.4	7.37	0.03	11.59 ^v	614 ^v		6.24	-2	20.0 ^{18.1}
14:43	1.3	0.5	7.37	0.03	11.86 ^v	623 ^v		6.26 ^v	-1 ^v	0.0

change battery - insert

SAMPLING DATA

Odor: none Color: clear
 Sample Designation: 102104-B17MW Time / Date: 10/15/20 14:50
 QC Sample Designation: _____ Time / Date: _____
 QA Sample Designation: _____ Time / Date: _____
 Evacuation Method: Submersible Pump / Other: mini whale
 Sampling Method: Submersible Pump / Other: mini whale
 Water Quality Instruments Used/Manufacturer/Model Number: Hachler
 Calibration Info (Time, Ranges, etc): 10/15/20 auto cal
 Remarks: * lead only *

Sampling Personnel: _____

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
 ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23



Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 102104 Location: 1021 E. 3rd Ave Site: _____
 Well No.: B17 MW
 Date: 10/15/20

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
✓ 14:46	1.6	0.5	7.37	0.03	11.95 v	624 v		6.29 v	-3 v	0.8 v
✓ 14:49	1.9	0.5	7.37	0.03	12.00 v	627 v		6.30 v	-4 v	0.0 v
	Sample		14:50							

	Interval (minutes)	Pump Rate (mL/min):	Drawdown (ft):	Temp: (°C):	Sp. Cond.: (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
ADEC (May 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA (Jan. 2010)	5	50	<0.3	±3%	±3%	±10%	±0.1	±10	±10% or <5 NTU

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
 ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

FIELD ACTIVITIES DAILY LOG

Date 10/15/20 - 10/17/20
 Sheet 1 of 6
 Project No. 102104

Project Name: 1021 E. 3rd Ave

Field activity subject: Groundwater Sampling

Description of daily activities and events:

8:00 calibrate Horiba ~~at curb #2~~

9:29 leave SWI

9:45 check in ML&P

tell about
can't drive
to

time	well	dew	notes
10:10	B5MW	10:04	located W of concrete block in fence to south
10:22	B4MW	5.16	wood flag in fence to south
10:46	B17MW	7.34	
10:50	B11MW	2.16	Frost jacked

15:06 call Henry (ML&P) to

15:26 leave site after putting purge water in 55gal drum (left next to gate to B4MW & B5MW)

10/16/20

9:30 calibrate Horiba

11:45 arrive site & check in ML&P

12:30 leave site

10/17/20

11:00 arrive at site & check in with ML&P
sample B11MW then cut down well

12:00 leave site

Visitors on site: —

Changes from plans/specifications and other special orders and important decisions:
—

Weather conditions: see field notes

Important telephone calls: —

Personnel on site: SKH

Signature: [Signature]

Date: 10/17/20



LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 102107 Location: 1021 E. 31st Ave Weather: 19°F clear
 Well No.: B4MW
 Date: 11-29-2020 Time Started: 10:00 Time Completed: 12:43
 Develop Date: _____ Develop End Time: _____ (24-hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 11:00 Date of Depth Measurement: 11-29-2020
 Measuring Point (MP): Top of PVC Casing / Top of Steel Protective Casing / Other: _____
 Diameter of Casing: 2" Well Screen Interval: _____
 Total Depth of Well Below MP: 11.02 Product Thickness, if noted: _____
 Depth-to-Water (DTW) Below MP: 3.31
 Water Column in Well: 7.71 (Total Depth of Well Below MP - DTW Below MP)
 Gallons per foot: 1.23 0.16
 Gallons in Well: 9.48 1.23 (Water Column in Well x Gallons per foot) WLI - 4

PURGING DATA

Date Purged: 11/29/20 Time Started: 11:16 Time Completed: 11:53
 Three Well Volumes: 3.70 (Gallons in Well x 3)
 Gallons Purged: 1.4 Depth of Pump (generally 2 ft from bottom): ~ 4.2 ft
 Max. Drawdown (generally 0.3 ft): 0.29 Pump Rate: 0.2
 Well Purged Dry: Yes No (If yes, use Well Purged Dry Log)

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO: (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
11:20	0.3	0.1	3.46	0.15	4.48	697		6.35	58	72.4
11:23	0.4	0.2	3.56	0.25	4.05	718		6.32	45	74.3
11:26	0.5	0.2	3.59	0.28	4.27	716		6.30	32	39.0
11:29	0.6	0.2	-	-	4.26	715		6.25	22	16.8
11:32	0.8	0.2	3.59	0.28	4.4	716		6.25	17	12.5
11:35	1.0	0.2	3.60	0.29	4.18 ✓	716 ✓		6.24 ✓	11 ✓	7.5

SAMPLING DATA

Odor: hydro carbon/organic Color: tan *slightly turb*
 Sample Designation: _____ Time / Date: 11:42 11/29/20
 QC Sample Designation: _____ Time / Date: _____
 QA Sample Designation: _____ Time / Date: _____

Evacuation Method: Submersible Pump / Other: mini whole
 Sampling Method: Submersible Pump / Other: "

Water Quality Instruments Used/Manufacturer/Model Number Horiba
 Calibration Info (Time, Ranges, etc) 9:30 11/24/20

Remarks: _____

Sampling Personnel: JEN

WELL CASING VOLUMES (GAL/FT): 1" = 0.04 2" = 0.16 4" = 0.65
 ANNULAR SPACE VOLUME (GAL/FT): 4" casing and 2" well = 0.23



Shannon & Wilson, Inc.

LOW-FLOW WATER SAMPLING LOG

Continued from previous page

Job No: 102104 Location: 1021 E. 3rd Ave Site: _____
 Well No.: B4mw
 Date: 11/29/20

Time:	Gallons:	Pump Rate (L/min):	DTW (ft BMP):	Drawdown (ft):	Temp: (°C)	Sp. Cond (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
<u>11:38</u>	<u>1.2</u>	<u>0.2</u>	<u>3.60</u>	<u>0.29</u>	<u>4.13</u> ✓	<u>717</u> ✓		<u>6.26</u> ✓	<u>6</u> ✓	<u>7.2</u>
<u>11:41</u>	<u>1.4</u>	<u>0.2</u>	<u>3.60</u>	<u>0.29</u>	<u>4.10</u> ✓	<u>717</u> ✓		<u>6.16</u> ✓	<u>6</u> ✓	<u>5.8</u> ✓

	Interval (minutes)	Pump Rate (mL/min):	Drawdown (ft):	Temp: (°C)	Sp. Cond.: (uS/cm)	DO (mg/L)	pH: (S.U.)	ORP: (mV)	Turb: (NTU)
ADEC (May 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA (Jan. 2010)	5	50	<0.3	±3%	±3%	±10%	±0.1	±10	±10% or <5 NTU

EPA guidance requires all parameters to stabilize for 3 consecutive readings before sampling. If not stable within 2 hours, collect sample.
 ADEC guidance requires 3 parameters (4 if using temperature) to stabilize for 3 consecutive readings before sampling.

Brother Francis

1021 E, 3rd Ave

102104

11/24/20

9:30

calibrate Horiba ~~451~~ SWI

9:40

leave SWI (JKH & CP)

10:00

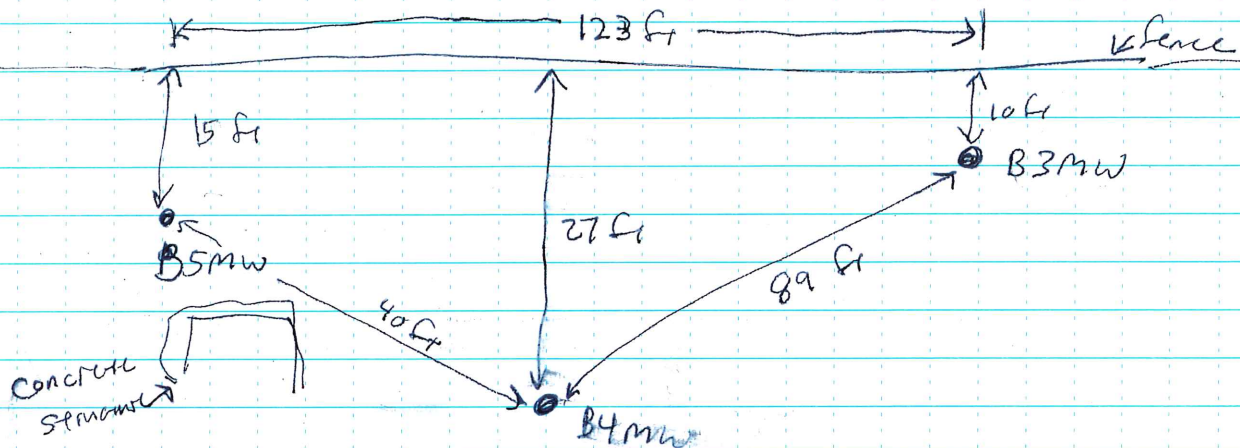
Arrive at site, check in with Steve

10:05

meet Travis (MOA) & locate wells B3MW, B4MW & B5MW, measure swing ties to B4MW

Sample well B4MW

Flag wells B3MW, B4MW & B5MW & label ~~spot~~ markers on fence



leave purge & decan water in 55 gallon drum at site outside of gate

12:42

leave site

13:03

arrive SWI, unload gear, then take samples to SGS.

Appendix B: Results of Analytical Testing

Appendix B

Results of Analytical Testing

By SGS North America, Inc. of Anchorage, Alaska and ADEC Laboratory Data Review Checklist

CONTENTS

- Results of Analytical Testing by SGS North America, Inc. of Anchorage, Alaska
- ADEC Laboratory Data Review Checklist

APPENDIX B: RESULTS OF ANALYTICAL TESTING

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907)433-3241

Report Number: **1205774**

Client Project: **102104 1021 E. 3rd Ave**

Dear Judy Hepner,

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
2020.11.02
14:27:02 -09'00'

Justin Nelson
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1205774**
Project Name/Site: **102104 1021 E. 3rd Ave**
Project Contact: **Judy Hepner**

Refer to sample receipt form for information on sample condition.

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

Print Date: 10/30/2020 4:35:52PM

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, indemnification 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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
102104-B4MW	1205774001	10/15/2020	10/19/2020	Water (Surface, Eff., Ground)
102104-B5MW	1205774002	10/15/2020	10/19/2020	Water (Surface, Eff., Ground)
102104-B11MW	1205774003	10/17/2020	10/19/2020	Water (Surface, Eff., Ground)
102104-B14MW	1205774004	10/15/2020	10/19/2020	Water (Surface, Eff., Ground)
102104-TB	1205774005	10/15/2020	10/19/2020	Water (Surface, Eff., Ground)
102104-B17MW	1205774006	10/15/2020	10/19/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
SW6020B	Metals by ICP-MS
SW8260D	Volatile Organic Compounds (W) FULL

Print Date: 10/30/2020 4:35:57PM

Detectable Results Summary

Client Sample ID: **102104-B4MW**

Lab Sample ID: 1205774001

Metals by ICP/MS

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Lead	3.09	ug/L
Diesel Range Organics	0.366J	mg/L
Residual Range Organics	0.704	mg/L

Client Sample ID: **102104-B5MW**

Lab Sample ID: 1205774002

Metals by ICP/MS

Semivolatile Organic Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Lead	11.0	ug/L
Diesel Range Organics	6.13	mg/L
Residual Range Organics	4.64	mg/L
1,2,4-Trimethylbenzene	1.19	ug/L
1,2-Dichloroethane	0.955	ug/L
Benzene	0.304J	ug/L
Ethylbenzene	0.460J	ug/L
P & M -Xylene	0.667J	ug/L
sec-Butylbenzene	0.328J	ug/L

Client Sample ID: **102104-B11MW**

Lab Sample ID: 1205774003

Metals by ICP/MS

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Lead	3.59	ug/L
Diesel Range Organics	0.345J	mg/L
Residual Range Organics	0.534	mg/L

Client Sample ID: **102104-B14MW**

Lab Sample ID: 1205774004

Metals by ICP/MS

Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Lead	1.52	ug/L
Diesel Range Organics	0.377J	mg/L
Residual Range Organics	0.815	mg/L



Results of 102104-B4MW

Client Sample ID: **102104-B4MW**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774001
Lab Project ID: 1205774

Collection Date: 10/15/20 12:12
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Metals by ICP/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Lead	3.09	1.00	0.310	ug/L	5		10/21/20 06:33

Batch Information

Analytical Batch: MMS10922
Analytical Method: SW6020B
Analyst: ACF
Analytical Date/Time: 10/21/20 06:33
Container ID: 1205774001-C

Prep Batch: MXX33749
Prep Method: SW3010A
Prep Date/Time: 10/20/20 11:34
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL



Results of 102104-B4MW

Client Sample ID: 102104-B4MW
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774001
Lab Project ID: 1205774

Collection Date: 10/15/20 12:12
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15787
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/25/20 17:23
Container ID: 1205774001-A
Prep Batch: XXX44117
Prep Method: SW3520C
Prep Date/Time: 10/23/20 15:42
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15787
Analytical Method: AK103
Analyst: CDM
Analytical Date/Time: 10/25/20 17:23
Container ID: 1205774001-A
Prep Batch: XXX44117
Prep Method: SW3520C
Prep Date/Time: 10/23/20 15:42
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL



Results of 102104-B4MW

Client Sample ID: 102104-B4MW
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774001
Lab Project ID: 1205774

Collection Date: 10/15/20 12:12
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of 102104-B4MW

Client Sample ID: **102104-B4MW**
 Client Project ID: **102104 1021 E. 3rd Ave**
 Lab Sample ID: 1205774001
 Lab Project ID: 1205774

Collection Date: 10/15/20 12:12
 Received Date: 10/19/20 08:08
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Chloromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:06
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:06
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Freon-113	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:06
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:06
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:06
Naphthalene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/20/20 22:06
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Styrene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Toluene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:06
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:06
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		10/20/20 22:06
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/20/20 22:06
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	81-118		%	1		10/20/20 22:06
4-Bromofluorobenzene (surr)	92.5	85-114		%	1		10/20/20 22:06
Toluene-d8 (surr)	98.8	89-112		%	1		10/20/20 22:06

Print Date: 10/30/2020 4:36:02PM

J flagging is activated

Results of 102104-B4MW

Client Sample ID: **102104-B4MW**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774001
Lab Project ID: 1205774

Collection Date: 10/15/20 12:12
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20429
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 10/20/20 22:06
Container ID: 1205774001-D

Prep Batch: VXX36571
Prep Method: SW5030B
Prep Date/Time: 10/20/20 16:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of 102104-B5MW

Client Sample ID: **102104-B5MW**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774002
Lab Project ID: 1205774

Collection Date: 10/15/20 13:27
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Metals by ICP/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Lead	11.0	1.00	0.310	ug/L	5		10/21/20 06:38

Batch Information

Analytical Batch: MMS10922
Analytical Method: SW6020B
Analyst: ACF
Analytical Date/Time: 10/21/20 06:38
Container ID: 1205774002-C

Prep Batch: MXX33749
Prep Method: SW3010A
Prep Date/Time: 10/20/20 11:34
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL



Results of 102104-B5MW

Client Sample ID: 102104-B5MW
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774002
Lab Project ID: 1205774

Collection Date: 10/15/20 13:27
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane (surr)).

Batch Information

Analytical Batch: XFC15787
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/25/20 17:33
Container ID: 1205774002-A
Prep Batch: XXX44117
Prep Method: SW3520C
Prep Date/Time: 10/23/20 15:42
Prep Initial Wt./Vol.: 275 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62 (surr)).

Batch Information

Analytical Batch: XFC15787
Analytical Method: AK103
Analyst: CDM
Analytical Date/Time: 10/25/20 17:33
Container ID: 1205774002-A
Prep Batch: XXX44117
Prep Method: SW3520C
Prep Date/Time: 10/23/20 15:42
Prep Initial Wt./Vol.: 275 mL
Prep Extract Vol: 1 mL



Results of 102104-B5MW

Client Sample ID: 102104-B5MW
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774002
Lab Project ID: 1205774

Collection Date: 10/15/20 13:27
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of 102104-B5MW

Client Sample ID: **102104-B5MW**
 Client Project ID: **102104 1021 E. 3rd Ave**
 Lab Sample ID: 1205774002
 Lab Project ID: 1205774

Collection Date: 10/15/20 13:27
 Received Date: 10/19/20 08:08
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Chloromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:20
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:20
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Ethylbenzene	0.460 J	1.00	0.310	ug/L	1		10/20/20 22:20
Freon-113	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:20
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:20
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:20
Naphthalene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
P & M -Xylene	0.667 J	2.00	0.620	ug/L	1		10/20/20 22:20
sec-Butylbenzene	0.328 J	1.00	0.310	ug/L	1		10/20/20 22:20
Styrene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Toluene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:20
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:20
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		10/20/20 22:20
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/20/20 22:20
Surrogates							
1,2-Dichloroethane-D4 (surr)	112	81-118		%	1		10/20/20 22:20
4-Bromofluorobenzene (surr)	91.6	85-114		%	1		10/20/20 22:20
Toluene-d8 (surr)	97.5	89-112		%	1		10/20/20 22:20



Results of 102104-B5MW

Client Sample ID: **102104-B5MW**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774002
Lab Project ID: 1205774

Collection Date: 10/15/20 13:27
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20429
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 10/20/20 22:20
Container ID: 1205774002-D

Prep Batch: VXX36571
Prep Method: SW5030B
Prep Date/Time: 10/20/20 16:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **102104-B11MW**

Client Sample ID: **102104-B11MW**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774003
Lab Project ID: 1205774

Collection Date: 10/17/20 11:35
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Lead	3.59	1.00	0.310	ug/L	5		10/21/20 06:42

Batch Information

Analytical Batch: MMS10922
Analytical Method: SW6020B
Analyst: ACF
Analytical Date/Time: 10/21/20 06:42
Container ID: 1205774003-C

Prep Batch: MXX33749
Prep Method: SW3010A
Prep Date/Time: 10/20/20 11:34
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL



Results of 102104-B11MW

Client Sample ID: 102104-B11MW
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774003
Lab Project ID: 1205774

Collection Date: 10/17/20 11:35
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 0.345 J, 0.566, 0.170, mg/L, 1, 10/25/20 17:43

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 83.9, 50-150, %, 1, 10/25/20 17:43

Batch Information

Analytical Batch: XFC15787
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/25/20 17:43
Container ID: 1205774003-A

Prep Batch: XXX44117
Prep Method: SW3520C
Prep Date/Time: 10/23/20 15:42
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 0.534, 0.472, 0.142, mg/L, 1, 10/25/20 17:43

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 90.6, 50-150, %, 1, 10/25/20 17:43

Batch Information

Analytical Batch: XFC15787
Analytical Method: AK103
Analyst: CDM
Analytical Date/Time: 10/25/20 17:43
Container ID: 1205774003-A

Prep Batch: XXX44117
Prep Method: SW3520C
Prep Date/Time: 10/23/20 15:42
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL



Results of 102104-B11MW

Client Sample ID: **102104-B11MW**
 Client Project ID: **102104 1021 E. 3rd Ave**
 Lab Sample ID: 1205774003
 Lab Project ID: 1205774

Collection Date: 10/17/20 11:35
 Received Date: 10/19/20 08:08
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:35
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:35
1,1,2-Trichloroethane	0.200 U	0.400	0.120	ug/L	1		10/20/20 22:35
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:35
1,2-Dibromoethane	0.0375 U	0.0750	0.0180	ug/L	1		10/20/20 22:35
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:35
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:35
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:35
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:35
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:35
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:35
Benzene	0.200 U	0.400	0.120	ug/L	1		10/20/20 22:35
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:35
Bromoform	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
Bromomethane	2.50 U	5.00	2.00	ug/L	1		10/20/20 22:35
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:35
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:35
Chloroethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:35

Print Date: 10/30/2020 4:36:02PM

J flagging is activated



Results of 102104-B11MW

Client Sample ID: 102104-B11MW
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774003
Lab Project ID: 1205774

Collection Date: 10/17/20 11:35
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of 102104-B11MW

Client Sample ID: **102104-B11MW**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774003
Lab Project ID: 1205774

Collection Date: 10/17/20 11:35
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20429
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 10/20/20 22:35
Container ID: 1205774003-D

Prep Batch: VXX36571
Prep Method: SW5030B
Prep Date/Time: 10/20/20 16:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of 102104-B14MW

Client Sample ID: **102104-B14MW**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774004
Lab Project ID: 1205774

Collection Date: 10/15/20 12:42
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Metals by ICP/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Lead	1.52	1.00	0.310	ug/L	5		10/21/20 07:01

Batch Information

Analytical Batch: MMS10922
Analytical Method: SW6020B
Analyst: DMM
Analytical Date/Time: 10/21/20 07:01
Container ID: 1205774004-C

Prep Batch: MXX33749
Prep Method: SW3010A
Prep Date/Time: 10/20/20 11:34
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL



Results of 102104-B14MW

Client Sample ID: 102104-B14MW
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774004
Lab Project ID: 1205774

Collection Date: 10/15/20 12:42
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Diesel Range Organics, 0.377 J, 0.566, 0.170, mg/L, 1, 10/25/20 17:53

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: 5a Androstane (surr), 93.8, 50-150, %, 1, 10/25/20 17:53

Batch Information

Analytical Batch: XFC15787
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/25/20 17:53
Container ID: 1205774004-A

Prep Batch: XXX44117
Prep Method: SW3520C
Prep Date/Time: 10/23/20 15:42
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: Residual Range Organics, 0.815, 0.472, 0.142, mg/L, 1, 10/25/20 17:53

Surrogates

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Row: n-Triacontane-d62 (surr), 96.9, 50-150, %, 1, 10/25/20 17:53

Batch Information

Analytical Batch: XFC15787
Analytical Method: AK103
Analyst: CDM
Analytical Date/Time: 10/25/20 17:53
Container ID: 1205774004-A

Prep Batch: XXX44117
Prep Method: SW3520C
Prep Date/Time: 10/23/20 15:42
Prep Initial Wt./Vol.: 265 mL
Prep Extract Vol: 1 mL



Results of 102104-B14MW

Client Sample ID: 102104-B14MW
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774004
Lab Project ID: 1205774

Collection Date: 10/15/20 12:42
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Print Date: 10/30/2020 4:36:02PM

J flagging is activated



Results of 102104-B14MW

Client Sample ID: **102104-B14MW**
 Client Project ID: **102104 1021 E. 3rd Ave**
 Lab Sample ID: 1205774004
 Lab Project ID: 1205774

Collection Date: 10/15/20 12:42
 Received Date: 10/19/20 08:08
 Matrix: Water (Surface, Eff., Ground)
 Solids (%):
 Location:

Results by Volatile GC/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Chloroform	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Chloromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:49
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		10/20/20 22:49
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Freon-113	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:49
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Methylene chloride	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:49
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:49
Naphthalene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
o-Xylene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		10/20/20 22:49
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Styrene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Toluene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		10/20/20 22:49
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		10/20/20 22:49
Vinyl chloride	0.0750 U	0.150	0.0500	ug/L	1		10/20/20 22:49
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		10/20/20 22:49
Surrogates							
1,2-Dichloroethane-D4 (surr)	114	81-118		%	1		10/20/20 22:49
4-Bromofluorobenzene (surr)	92.3	85-114		%	1		10/20/20 22:49
Toluene-d8 (surr)	97.5	89-112		%	1		10/20/20 22:49

Results of 102104-B14MW

Client Sample ID: **102104-B14MW**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774004
Lab Project ID: 1205774

Collection Date: 10/15/20 12:42
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20429
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 10/20/20 22:49
Container ID: 1205774004-D

Prep Batch: VXX36571
Prep Method: SW5030B
Prep Date/Time: 10/20/20 16:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of 102104-TB

Client Sample ID: 102104-TB
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774005
Lab Project ID: 1205774

Collection Date: 10/15/20 12:00
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Print Date: 10/30/2020 4:36:02PM

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Results of 102104-TB

Client Sample ID: 102104-TB
Client Project ID: 102104 1021 E. 3rd Ave
Lab Sample ID: 1205774005
Lab Project ID: 1205774

Collection Date: 10/15/20 12:00
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of 102104-TB

Client Sample ID: **102104-TB**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774005
Lab Project ID: 1205774

Collection Date: 10/15/20 12:00
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20429
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 10/20/20 17:58
Container ID: 1205774005-A

Prep Batch: VXX36571
Prep Method: SW5030B
Prep Date/Time: 10/20/20 16:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of **102104-B17MW**

Client Sample ID: **102104-B17MW**
Client Project ID: **102104 1021 E. 3rd Ave**
Lab Sample ID: 1205774006
Lab Project ID: 1205774

Collection Date: 10/15/20 14:50
Received Date: 10/19/20 08:08
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Metals by ICP/MS**

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Lead	0.500 U	1.00	0.310	ug/L	5		10/21/20 06:14

Batch Information

Analytical Batch: MMS10922
Analytical Method: SW6020B
Analyst: ACF
Analytical Date/Time: 10/21/20 06:14
Container ID: 1205774006-A

Prep Batch: MX33749
Prep Method: SW3010A
Prep Date/Time: 10/20/20 11:34
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Method Blank

Blank ID: MB for HBN 1813216 [MXX/33749]
Blank Lab ID: 1588822

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1205774001, 1205774002, 1205774003, 1205774004, 1205774006

Results by SW6020B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Lead	0.500U	1.00	0.310	ug/L

Batch Information

Analytical Batch: MMS10922
Analytical Method: SW6020B
Instrument: Perkin Elmer Nexlon P5
Analyst: ACF
Analytical Date/Time: 10/21/2020 6:05:13AM

Prep Batch: MXX33749
Prep Method: SW3010A
Prep Date/Time: 10/20/2020 11:34:27AM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 10/30/2020 4:36:05PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1205774 [MXX33749]

Blank Spike Lab ID: 1588823

Date Analyzed: 10/21/2020 06:09

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205774001, 1205774002, 1205774003, 1205774004, 1205774006

Results by SW6020B

Parameter	Blank Spike (ug/L)			CL
	Spike	Result	Rec (%)	
Lead	1000	1010	101	(88-115)

Batch Information

Analytical Batch: MMS10922

Analytical Method: SW6020B

Instrument: Perkin Elmer Nexlon P5

Analyst: ACF

Prep Batch: MXX33749

Prep Method: SW3010A

Prep Date/Time: 10/20/2020 11:34

Spike Init Wt./Vol.: 1000 ug/L Extract Vol: 25 mL

Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/30/2020 4:36:09PM

Matrix Spike Summary

Original Sample ID: 1588824
 MS Sample ID: 1588825 MS
 MSD Sample ID: 1588826 MSD

Analysis Date: 10/21/2020 6:14
 Analysis Date: 10/21/2020 6:19
 Analysis Date: 10/21/2020 6:24
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205774001, 1205774002, 1205774003, 1205774004, 1205774006

Results by SW6020B

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Lead	0.500U	1000	1010	101	1000	1010	101	88-115	0.56	(< 20)

Batch Information

Analytical Batch: MMS10922
 Analytical Method: SW6020B
 Instrument: Perkin Elmer Nexlon P5
 Analyst: ACF
 Analytical Date/Time: 10/21/2020 6:19:19AM

Prep Batch: MXX33749
 Prep Method: 3010 H2O Digest for Metals ICP-MS
 Prep Date/Time: 10/20/2020 11:34:27AM
 Prep Initial Wt./Vol.: 25.00mL
 Prep Extract Vol: 25.00mL



Method Blank

Blank ID: MB for HBN 1813243 [VXX/36571]
Blank Lab ID: 1588991

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1205774001, 1205774002, 1205774003, 1205774004, 1205774005

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	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	2.50U	5.00	2.00	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

Print Date: 10/30/2020 4:36:14PM

Method Blank

Blank ID: MB for HBN 1813243 [VXX/36571]
 Blank Lab ID: 1588991

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1205774001, 1205774002, 1205774003, 1205774004, 1205774005

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	5.00U	10.0	3.10	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	115	81-118		%
4-Bromofluorobenzene (surr)	94	85-114		%
Toluene-d8 (surr)	99.6	89-112		%



Method Blank

Blank ID: MB for HBN 1813243 [VXX/36571]
Blank Lab ID: 1588991

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1205774001, 1205774002, 1205774003, 1205774004, 1205774005

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS20429
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 10/20/2020 4:31:00PM

Prep Batch: VXX36571
Prep Method: SW5030B
Prep Date/Time: 10/20/2020 4:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 10/30/2020 4:36:14PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205774 [VXX36571]
 Blank Spike Lab ID: 1588992
 Date Analyzed: 10/20/2020 16:45

Spike Duplicate ID: LCSD for HBN 1205774 [VXX36571]
 Spike Duplicate Lab ID: 1588993
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205774001, 1205774002, 1205774003, 1205774004, 1205774005

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	33.0	110	30	32.6	109	(78-124)	1.10	(< 20)
1,1,1-Trichloroethane	30	32.3	108	30	31.8	106	(74-131)	1.40	(< 20)
1,1,2,2-Tetrachloroethane	30	28.5	95	30	29.1	97	(71-121)	2.10	(< 20)
1,1,2-Trichloroethane	30	30.9	103	30	31.2	104	(80-119)	0.94	(< 20)
1,1-Dichloroethane	30	31.9	106	30	31.9	106	(77-125)	0.27	(< 20)
1,1-Dichloroethene	30	34.2	114	30	34.1	114	(71-131)	0.30	(< 20)
1,1-Dichloropropene	30	33.0	110	30	32.5	108	(79-125)	1.50	(< 20)
1,2,3-Trichlorobenzene	30	31.9	106	30	34.4	115	(69-129)	7.60	(< 20)
1,2,3-Trichloropropane	30	29.3	98	30	30.1	100	(73-122)	2.70	(< 20)
1,2,4-Trichlorobenzene	30	32.2	107	30	34.6	115	(69-130)	7.40	(< 20)
1,2,4-Trimethylbenzene	30	27.8	93	30	28.6	96	(79-124)	3.10	(< 20)
1,2-Dibromo-3-chloropropane	30	26.5	89	30	27.3	91	(62-128)	2.90	(< 20)
1,2-Dibromoethane	30	32.0	107	30	32.3	108	(77-121)	1.10	(< 20)
1,2-Dichlorobenzene	30	30.7	102	30	31.2	104	(80-119)	1.50	(< 20)
1,2-Dichloroethane	30	32.6	109	30	32.7	109	(73-128)	0.28	(< 20)
1,2-Dichloropropane	30	30.8	103	30	31.2	104	(78-122)	1.30	(< 20)
1,3,5-Trimethylbenzene	30	28.2	94	30	28.6	95	(75-124)	1.40	(< 20)
1,3-Dichlorobenzene	30	31.0	103	30	31.5	105	(80-119)	1.40	(< 20)
1,3-Dichloropropane	30	31.5	105	30	31.6	105	(80-119)	0.29	(< 20)
1,4-Dichlorobenzene	30	31.1	104	30	31.9	106	(79-118)	2.40	(< 20)
2,2-Dichloropropane	30	26.2	88	30	26.0	87	(60-139)	1.00	(< 20)
2-Butanone (MEK)	90	81.0	90	90	82.6	92	(56-143)	1.90	(< 20)
2-Chlorotoluene	30	28.8	96	30	28.8	96	(79-122)	0.09	(< 20)
2-Hexanone	90	75.0	83	90	76.7	85	(57-139)	2.30	(< 20)
4-Chlorotoluene	30	28.7	96	30	29.1	97	(78-122)	1.50	(< 20)
4-Isopropyltoluene	30	29.3	98	30	30.3	101	(77-127)	3.60	(< 20)
4-Methyl-2-pentanone (MIBK)	90	81.7	91	90	84.5	94	(67-130)	3.40	(< 20)
Benzene	30	30.8	103	30	30.6	102	(79-120)	0.56	(< 20)
Bromobenzene	30	31.0	103	30	31.3	104	(80-120)	0.95	(< 20)
Bromochloromethane	30	33.0	110	30	32.8	109	(78-123)	0.42	(< 20)
Bromodichloromethane	30	33.8	113	30	33.7	112	(79-125)	0.20	(< 20)
Bromoform	30	32.6	109	30	32.9	110	(66-130)	0.79	(< 20)
Bromomethane	30	32.9	110	30	31.9	106	(53-141)	3.20	(< 20)
Carbon disulfide	45	52.5	117	45	51.7	115	(64-133)	1.50	(< 20)

Print Date: 10/30/2020 4:36:18PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205774 [VXX36571]
 Blank Spike Lab ID: 1588992
 Date Analyzed: 10/20/2020 16:45

Spike Duplicate ID: LCSD for HBN 1205774 [VXX36571]
 Spike Duplicate Lab ID: 1588993
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205774001, 1205774002, 1205774003, 1205774004, 1205774005

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon tetrachloride	30	33.7	112	30	33.3	111	(72-136)	1.20	(< 20)
Chlorobenzene	30	32.1	107	30	32.3	108	(82-118)	0.59	(< 20)
Chloroethane	30	33.1	110	30	33.6	112	(60-138)	1.50	(< 20)
Chloroform	30	31.1	104	30	31.1	104	(79-124)	0.08	(< 20)
Chloromethane	30	30.0	100	30	29.5	99	(50-139)	1.40	(< 20)
cis-1,2-Dichloroethene	30	32.8	109	30	32.8	109	(78-123)	0.12	(< 20)
cis-1,3-Dichloropropene	30	30.3	101	30	30.7	102	(75-124)	1.30	(< 20)
Dibromochloromethane	30	33.0	110	30	33.3	111	(74-126)	0.76	(< 20)
Dibromomethane	30	33.3	111	30	33.8	113	(79-123)	1.50	(< 20)
Dichlorodifluoromethane	30	37.3	124	30	36.2	121	(32-152)	3.10	(< 20)
Ethylbenzene	30	31.6	105	30	31.6	105	(79-121)	0.28	(< 20)
Freon-113	45	51.6	115	45	51.1	114	(70-136)	1.10	(< 20)
Hexachlorobutadiene	30	29.6	99	30	31.1	104	(66-134)	5.00	(< 20)
Isopropylbenzene (Cumene)	30	31.3	104	30	31.3	104	(72-131)	0.12	(< 20)
Methylene chloride	30	32.9	110	30	33.4	111	(74-124)	1.50	(< 20)
Methyl-t-butyl ether	45	45.0	100	45	45.9	102	(71-124)	1.80	(< 20)
Naphthalene	30	28.8	96	30	31.1	104	(61-128)	7.70	(< 20)
n-Butylbenzene	30	30.2	101	30	31.7	106	(75-128)	4.70	(< 20)
n-Propylbenzene	30	29.4	98	30	29.6	99	(76-126)	0.98	(< 20)
o-Xylene	30	30.8	103	30	31.1	104	(78-122)	0.92	(< 20)
P & M -Xylene	60	62.5	104	60	62.3	104	(80-121)	0.28	(< 20)
sec-Butylbenzene	30	29.6	99	30	30.3	101	(77-126)	2.20	(< 20)
Styrene	30	30.6	102	30	30.6	102	(78-123)	0.02	(< 20)
tert-Butylbenzene	30	29.2	97	30	30.1	100	(78-124)	3.00	(< 20)
Tetrachloroethene	30	34.1	114	30	33.3	111	(74-129)	2.30	(< 20)
Toluene	30	30.4	101	30	30.3	101	(80-121)	0.34	(< 20)
trans-1,2-Dichloroethene	30	33.3	111	30	33.2	111	(75-124)	0.31	(< 20)
trans-1,3-Dichloropropene	30	29.6	99	30	29.7	99	(73-127)	0.50	(< 20)
Trichloroethene	30	33.3	111	30	33.1	110	(79-123)	0.78	(< 20)
Trichlorofluoromethane	30	36.0	120	30	35.2	117	(65-141)	2.40	(< 20)
Vinyl acetate	30	29.0	97	30	29.7	99	(54-146)	2.30	(< 20)
Vinyl chloride	30	34.6	115	30	33.6	112	(58-137)	2.80	(< 20)
Xylenes (total)	90	93.3	104	90	93.4	104	(79-121)	0.12	(< 20)

Print Date: 10/30/2020 4:36:18PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205774 [VXX36571]
 Blank Spike Lab ID: 1588992
 Date Analyzed: 10/20/2020 16:45

Spike Duplicate ID: LCSD for HBN 1205774 [VXX36571]
 Spike Duplicate Lab ID: 1588993
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205774001, 1205774002, 1205774003, 1205774004, 1205774005

Results by SW8260D

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	105	105	30	106	106	(81-118)	0.47	
4-Bromofluorobenzene (surr)	30	91.2	91	30	92.9	93	(85-114)	1.80	
Toluene-d8 (surr)	30	99.8	100	30	101	101	(89-112)	0.90	

Batch Information

Analytical Batch: **VMS20429**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX36571**
 Prep Method: **SW5030B**
 Prep Date/Time: **10/20/2020 16:00**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 10/30/2020 4:36:18PM



Method Blank

Blank ID: MB for HBN 1813367 [XXX/44117]
Blank Lab ID: 1589515

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1205774001, 1205774002, 1205774003, 1205774004

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	83.7	60-120		%

Batch Information

Analytical Batch: XFC15787
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CDM
Analytical Date/Time: 10/25/2020 3:44:00PM

Prep Batch: XXX44117
Prep Method: SW3520C
Prep Date/Time: 10/23/2020 3:42:06PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/30/2020 4:36:21PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205774 [XXX44117]
 Blank Spike Lab ID: 1589516
 Date Analyzed: 10/25/2020 15:54

Spike Duplicate ID: LCSD for HBN 1205774 [XXX44117]
 Spike Duplicate Lab ID: 1589517
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205774001, 1205774002, 1205774003, 1205774004

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	19.6	98	20	20.1	101	(75-125)	2.50	(< 20)

Surrogates

5a Androstane (surr)	0.4	96	96	0.4	101	101	(60-120)	4.60	
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Batch Information

Analytical Batch: **XFC15787**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **CDM**

Prep Batch: **XXX44117**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/23/2020 15:42**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 10/30/2020 4:36:25PM

Method Blank

Blank ID: MB for HBN 1813367 [XXX/44117]

Blank Lab ID: 1589515

QC for Samples:

1205774001, 1205774002, 1205774003, 1205774004

Matrix: Water (Surface, Eff., Ground)

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	97.7	60-120		%

Batch Information

Analytical Batch: XFC15787

Analytical Method: AK103

Instrument: Agilent 7890B F

Analyst: CDM

Analytical Date/Time: 10/25/2020 3:44:00PM

Prep Batch: XXX44117

Prep Method: SW3520C

Prep Date/Time: 10/23/2020 3:42:06PM

Prep Initial Wt./Vol.: 250 mL

Prep Extract Vol: 1 mL

Print Date: 10/30/2020 4:36:28PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205774 [XXX44117]
 Blank Spike Lab ID: 1589516
 Date Analyzed: 10/25/2020 15:54

Spike Duplicate ID: LCSD for HBN 1205774 [XXX44117]
 Spike Duplicate Lab ID: 1589517
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205774001, 1205774002, 1205774003, 1205774004

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL	
	Spike	Result	Rec (%)	Spike	Result	Rec (%)				
Residual Range Organics	20	20.6	103	20	21.5	108	(60-120)	4.20	(< 20)	
Surrogates										
n-Triacontane-d62 (surr)	0.4	93.8	94	0.4	101	101	(60-120)	7.10		

Batch Information

Analytical Batch: **XFC15787**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B F**
 Analyst: **CDM**

Prep Batch: **XXX44117**
 Prep Method: **SW3520C**
 Prep Date/Time: **10/23/2020 15:42**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

1205774

362656 SD



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CHAIN-OF-CUSTODY RECORD

Page 1 of 1
Laboratory SGS - Anchorage
Attn: JUSTIN

Cooper 1 of 1

Analysis Parameters/Sample Container Description
(include preservative if used)

(HCL) (HNO₃)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	DRG/RRO	AK102/AK103	VOL	EPA 516/OC	TOT-lead	EPA 602/0A	Total Number of Containers	Remarks/Matrix
102104-B4MW	(1AF)	12:12	10/15/20	X	X	X	X	X	X			6	groundwater
- B5MW	(2AF)	13:27	10/15/20									6	
- B11MW	(3AF)	11:35	10/17/20									6	
- B14MW	(4AF)	12:42	10/15/20									6	
- B17MW		14:50	10/15/20										
- TB	(5AC)	12:00	10/15/20				X					1 set	trip blank
102104-B17MW	(6A)	14:50	10/15/20						X			1	groundwater

Project Information		Sample Receipt	
Project Number: <u>102104</u>	Total Number of Containers		
Project Name: <u>1021 E. 3rd Ave</u>	COC Seals/Intact? Y/N/NA		
Contact: <u>JKH/DLO</u>	Received Good Cond./Cold		
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Delivery Method:		
Sampler: <u>JKH</u>	(attach shipping bill, if any)		

Instructions	
Requested Turnaround Time: <u>Standard</u>	
Special Instructions:	

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

Relinquished By: 1.		Relinquished By: 2.		Relinquished By: 3.	
Signature: <u>[Signature]</u>	Time: <u>12:00</u>	Signature: <u>[Signature]</u>	Time: <u>8:00</u>	Signature: _____	Time: _____
Printed Name: <u>Judy Hepler</u>	Date: <u>10/18/20</u>	Printed Name: <u>Alex Rizzo</u>	Date: <u>10/19/20</u>	Printed Name: _____	Date: _____
Company: <u>Shannon & Wilson</u>		Company: <u>Shannon + Wilson</u>		Company: _____	
Received By: 1.		Received By: 2.		Received By: 3.	
Signature: _____	Time: _____	Signature: _____	Time: _____	Signature: <u>[Signature]</u>	Time: <u>0808</u>
Printed Name: _____	Date: _____	Printed Name: _____	Date: _____	Printed Name: <u>Allie Daniel</u>	Date: <u>10-19-20</u>
Company: _____		Company: _____		Company: <u>SGS</u>	

ANC: seals absent, HD.
TB = 0.8°C D23



e-Sample Receipt Form

SGS Workorder #:

1205774

1205774

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				
<input type="checkbox"/> 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	@	0.8 °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)? **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			Yes			
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)			Yes			
Were proper containers (type/mass/volume/preservative***) used?			N/A	***Exemption permitted for metals (e.g.200.8/6020A).		
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

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1205774001-A	HCL to pH < 2	OK			
1205774001-B	HCL to pH < 2	OK			
1205774001-C	HNO3 to pH < 2	OK			
1205774001-D	HCL to pH < 2	OK			
1205774001-E	HCL to pH < 2	OK			
1205774001-F	HCL to pH < 2	OK			
1205774002-A	HCL to pH < 2	OK			
1205774002-B	HCL to pH < 2	OK			
1205774002-C	HNO3 to pH < 2	OK			
1205774002-D	HCL to pH < 2	OK			
1205774002-E	HCL to pH < 2	OK			
1205774002-F	HCL to pH < 2	OK			
1205774003-A	HCL to pH < 2	OK			
1205774003-B	HCL to pH < 2	OK			
1205774003-C	HNO3 to pH < 2	OK			
1205774003-D	HCL to pH < 2	OK			
1205774003-E	HCL to pH < 2	OK			
1205774003-F	HCL to pH < 2	OK			
1205774004-A	HCL to pH < 2	OK			
1205774004-B	HCL to pH < 2	OK			
1205774004-C	HNO3 to pH < 2	OK			
1205774004-D	HCL to pH < 2	OK			
1205774004-E	HCL to pH < 2	OK			
1205774004-F	HCL to pH < 2	OK			
1205774005-A	HCL to pH < 2	OK			
1205774005-B	HCL to pH < 2	OK			
1205774005-C	HCL to pH < 2	OK			
1205774006-A	HNO3 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: LeeAnne Osgood
Title: 2020 Groundwater Monitoring Event
Date: January 2021

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.
Laboratory Report Number: 1205774
Laboratory Report Date: 11/2/2020

Contaminated Site Name: MOA – Brother Francis Shelter Property
ADEC File Number: 2100.26.326
Hazard Identification Number: 24899

(NOTE: NA = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes** / No / NA

Comments:

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

Yes / No / **NA**

Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

2. Chain of Custody (COC)

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

Yes / No / NA

Comments:

- b. Correct analyses requested? **Yes** / No / NA

Comments:

3. Laboratory Sample Receipt Documentation

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

Yes / No / NA

Comments: *The cooler temperature blank was 0.8° Celsius.*

- b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes** / No / NA

Comments:

- c. Sample condition documented - broken, leaking (MeOH), zero headspace (VOC vials)? **Yes** / No / NA

Comments:

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? **Yes** / **No** / NA

Comments: *No discrepancies were noted.*

- e. Data quality or usability affected?

Comments: *See above.*

4. Case Narrative

- a. Present and understandable? **Yes** / No / NA

Comments:

- b. Discrepancies, errors or QC failures noted by the lab? **Yes** / No / **NA**

Comments: *No discrepancies, error, or QC failures were noted by the laboratory in the case narrative.*

- c. Were all corrective actions documented? **Yes** / No / **NA**

Comments:

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

Comments: *The case narrative does not discuss quality/usability.*

5. Sample Results

- a. Correct analyses performed/reported as requested on COC? **Yes** / No / NA

Comments:

- b. All applicable holding times met? **Yes** / No / NA

Comments:

- c. All soils reported on a dry weight basis? **Yes** / No / **NA**

Comments: *Soil samples not submitted for project.*

- d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? **Yes** / No / NA

Comments:

- e. Data quality or usability affected?

Comments: *Data quality/usability unaffected; see above.*

6. QC Samples

a. Method Blank

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

Yes / No / NA

Comments:

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

Yes / No / NA

Comments:

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

Comments:

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

Yes / No / **NA**

Comments:

- v. Data quality or usability affected?

Comments: *See above.*

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

- i. Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples?

(LCS/LCSD required per AK methods, LCS required per SW846) **Yes** / No / NA

Comments:

- ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? **Yes** / No / NA

Comments:

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK petroleum methods: AK 101 60%-120%, AK 102 75%-125%, AK 103 60%-120%; all other analyses see the laboratory QC pages) **Yes** / No / NA

Comments:

- iv. Precision – All relative percent differences (RPDs) 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 / NA

Comments:

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

Comments:

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

Yes / No / **NA**

Comments:

- vii. Data quality or usability affected?

Comments: *No, see above.*

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

Note: Leave blank if not required for project

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

Yes / No / **NA**

Comments:

- ii. Metals/Inorganics - One MS and one MSD reported per matrix, analysis and 20 samples? **Yes** / No / NA

Comments:

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. **Yes** / No / NA

Comments:

- iv. Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits and project specified objectives, if applicable. RPD reported from MS/MSD, and/or sample/sample duplicate. **Yes** / No / NA

Comments:

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

Comments:

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

Yes / No / **NA**

Comments:

- vii. Data quality or usability affected?

Comments: *No, see above.*

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

- i. Are surrogate/IDA recoveries reported for organic analyses - field, QC, and laboratory samples? **Yes** / No / NA

Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes** / No / NA

Comments:

- iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined? **Yes** / No / **NA**

Comments:

- iv. Data quality or usability affected?

Comments: *See above.*

e. Trip Blank - Volatile analyses only (GRO, BTEX, VOCs, etc.)

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.) **Yes** / No / NA

Comments:

- ii. Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? (If not, a comment explaining why must be entered below.) **Yes** / **No** / NA

Comments: *Only one cooler was used to transport the samples.*

- iii. All results less than LOQ and project specified objectives? **Yes** / No / NA

Comments:

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

Comments:

- v. Data quality or usability affected?

Comments: *See above.*

f. Field Duplicate

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

Yes / No / NA

Comments: *Sample B14MW is a field duplicate of Sample B4MW.*

- ii. Were the field duplicates submitted blind to the lab? **Yes** / No / NA

Comments:

iii. Precision – All relative percent differences (RPDs) less than specified project objectives? (Recommended: 30% for water, 50% for soil) **Yes / No / NA**
Comments: *Except for total lead, the RPD for each of the detected parameters is less than 30 percent. The RPD for total lead is 68%.*

iv. Data quality or usability affected?
Comments: *The total lead concentrations detected in the primary sample (0.00309 mg/L) and duplicate sample (0.00152 mg/L) are less than the cleanup level; therefore, the data are considered acceptable for the purposes of this report. The total lead concentrations from the primary and duplicate samples are E-flagged in Tables 2 and 3.*

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

Yes / No / NA

Comments: *A decontamination or equipment blank was not included in our ADEC-approved work plan.*

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

Yes / No / NA

Comments:

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

Comments:

iii. Data quality or usability affected?

Comments:

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

a. Defined and appropriate? **Yes / No / NA**

Comments: *A key is provided on Page 3 of the SGS Laboratory Report.*

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518

Report Number: **1206405**

Client Project: **102104 1021 East 3rd Ave**

Dear LeeAnne Osgood,

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
2020.12.14
16:02:20 -09'00'

Justin Nelson
Project Manager
Justin.Nelson@sgs.com

Date

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1206405**
Project Name/Site: **102104 1021 East 3rd Ave**
Project Contact: **LeeAnne Osgood**

Refer to sample receipt form for information on sample condition.

LCSD for HBN 1814528 [VXX/3671 (1594425) LCSD

8260D - LCSD recoveries for naphthalene and 1,2,3-trichlorobenzene do not meet QC criteria. These analytes were not detected above the LOQ in the associated samples.

1206405001(1594997MSD) (1594999) MSD

6020B - Metals MSD recovery for Lead does not meet QC criteria. Post digestion spike was successful.

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

Print Date: 12/14/2020 3:26:17PM

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, indemnification and jurisdiction issues defined therein.

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SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 DW Chemistry & Microbiology (Provisionally Certified as of 12/03/2020 for Turbidity by SM2130B, Copper & Mercury by EPA200.8 and Trihalomethanes by EPA 524.2) & 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

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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
102104-B4MW	1206405001	11/24/2020	11/24/2020	Water (Surface, Eff., Ground)
102104-TB	1206405002	11/24/2020	11/24/2020	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
AK102	DRO/RRO Low Volume Water
AK103	DRO/RRO Low Volume Water
SW6020B	Metals by ICP-MS
SW8260D	Volatile Organic Compounds (W) FULL

Print Date: 12/14/2020 3:26:20PM

Detectable Results Summary

Client Sample ID: **102104-B4MW**

Lab Sample ID: 1206405001

Metals by ICP/MS

Semivolatile Organic Fuels

Volatile GC/MS

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Lead	0.857J	ug/L
Diesel Range Organics	0.810	mg/L
Residual Range Organics	1.33	mg/L
Dichlorodifluoromethane	0.595J	ug/L

Print Date: 12/14/2020 3:26:22PM

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Results of 102104-B4MW

Client Sample ID: **102104-B4MW**
Client Project ID: **102104 1021 East 3rd Ave**
Lab Sample ID: 1206405001
Lab Project ID: 1206405

Collection Date: 11/24/20 11:42
Received Date: 11/24/20 14:22
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Metals by ICP/MS

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Lead	0.857 J	1.00	0.310	ug/L	5		12/09/20 09:36

Batch Information

Analytical Batch: MMS10963
Analytical Method: SW6020B
Analyst: DMM
Analytical Date/Time: 12/09/20 09:36
Container ID: 1206405001-F

Prep Batch: MXX33869
Prep Method: SW3010A
Prep Date/Time: 12/04/20 09:33
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL



Results of 102104-B4MW

Client Sample ID: 102104-B4MW
Client Project ID: 102104 1021 East 3rd Ave
Lab Sample ID: 1206405001
Lab Project ID: 1206405

Collection Date: 11/24/20 11:42
Received Date: 11/24/20 14:22
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Semivolatile Organic Fuels

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Diesel Range Organics and Surrogates (5a Androstane).

Batch Information

Analytical Batch: XFC15827
Analytical Method: AK102
Analyst: A.A
Analytical Date/Time: 12/07/20 15:33
Container ID: 1206405001-A

Prep Batch: XXX44279
Prep Method: SW3520C
Prep Date/Time: 12/02/20 14:57
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Rows include Residual Range Organics and Surrogates (n-Triacontane-d62).

Batch Information

Analytical Batch: XFC15827
Analytical Method: AK103
Analyst: A.A
Analytical Date/Time: 12/07/20 15:33
Container ID: 1206405001-A

Prep Batch: XXX44279
Prep Method: SW3520C
Prep Date/Time: 12/02/20 14:57
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL



Results of 102104-B4MW

Client Sample ID: 102104-B4MW
Client Project ID: 102104 1021 East 3rd Ave
Lab Sample ID: 1206405001
Lab Project ID: 1206405

Collection Date: 11/24/20 11:42
Received Date: 11/24/20 14:22
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of 102104-B4MW

Client Sample ID: 102104-B4MW
Client Project ID: 102104 1021 East 3rd Ave
Lab Sample ID: 1206405001
Lab Project ID: 1206405

Collection Date: 11/24/20 11:42
Received Date: 11/24/20 14:22
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of 102104-B4MW

Client Sample ID: **102104-B4MW**
Client Project ID: **102104 1021 East 3rd Ave**
Lab Sample ID: 1206405001
Lab Project ID: 1206405

Collection Date: 11/24/20 11:42
Received Date: 11/24/20 14:22
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20506
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 11/25/20 17:52
Container ID: 1206405001-C

Prep Batch: VXX36712
Prep Method: SW5030B
Prep Date/Time: 11/25/20 12:30
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL



Results of 102104-TB

Client Sample ID: 102104-TB
Client Project ID: 102104 1021 East 3rd Ave
Lab Sample ID: 1206405002
Lab Project ID: 1206405

Collection Date: 11/24/20 11:00
Received Date: 11/24/20 14:22
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.



Results of 102104-TB

Client Sample ID: 102104-TB
Client Project ID: 102104 1021 East 3rd Ave
Lab Sample ID: 1206405002
Lab Project ID: 1206405

Collection Date: 11/24/20 11:00
Received Date: 11/24/20 14:22
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Table with 8 columns: Parameter, Result Qual, LOQ/CL, DL, Units, DF, Allowable Limits, Date Analyzed. Lists various chemical compounds and their detection results.

Results of 102104-TB

Client Sample ID: **102104-TB**
Client Project ID: **102104 1021 East 3rd Ave**
Lab Sample ID: 1206405002
Lab Project ID: 1206405

Collection Date: 11/24/20 11:00
Received Date: 11/24/20 14:22
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by Volatile GC/MS

Batch Information

Analytical Batch: VMS20506
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 11/25/20 14:42
Container ID: 1206405002-A

Prep Batch: VXX36712
Prep Method: SW5030B
Prep Date/Time: 11/25/20 12:30
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1814669 [MXX/33869]
Blank Lab ID: 1594995

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1206405001

Results by SW6020B

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Lead	0.500U	1.00	0.310	ug/L

Batch Information

Analytical Batch: MMS10963
Analytical Method: SW6020B
Instrument: Perkin Elmer Nexlon P5
Analyst: DMM
Analytical Date/Time: 12/9/2020 9:27:19AM

Prep Batch: MXX33869
Prep Method: SW3010A
Prep Date/Time: 12/4/2020 9:33:13AM
Prep Initial Wt./Vol.: 25 mL
Prep Extract Vol: 25 mL

Print Date: 12/14/2020 3:26:25PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1206405 [MXX33869]
Blank Spike Lab ID: 1594996
Date Analyzed: 12/09/2020 09:32

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206405001

Results by SW6020B

Parameter	Blank Spike (ug/L)			CL
	Spike	Result	Rec (%)	
Lead	1000	1110	111	(88-115)

Batch Information

Analytical Batch: **MMS10963**
Analytical Method: **SW6020B**
Instrument: **Perkin Elmer Nexlon P5**
Analyst: **DMM**

Prep Batch: **MXX33869**
Prep Method: **SW3010A**
Prep Date/Time: **12/04/2020 09:33**
Spike Init Wt./Vol.: 1000 ug/L Extract Vol: 25 mL
Dupe Init Wt./Vol.: Extract Vol:

Print Date: 12/14/2020 3:26:28PM

Matrix Spike Summary

Original Sample ID: 1594997
 MS Sample ID: 1594998 MS
 MSD Sample ID: 1594999 MSD

Analysis Date: 12/09/2020 9:36
 Analysis Date: 12/09/2020 9:41
 Analysis Date: 12/09/2020 9:46
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206405001

Results by SW6020B

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Lead	0.857J	1000	1120	112	1000	1160	116 *	88-115	2.92	(< 20)

Batch Information

Analytical Batch: MMS10963
 Analytical Method: SW6020B
 Instrument: Perkin Elmer Nexlon P5
 Analyst: DMM
 Analytical Date/Time: 12/9/2020 9:41:25AM

Prep Batch: MXX33869
 Prep Method: 3010 H2O Digest for Metals ICP-MS
 Prep Date/Time: 12/4/2020 9:33:13AM
 Prep Initial Wt./Vol.: 25.00mL
 Prep Extract Vol: 25.00mL

Bench Spike Summary

Original Sample ID: 1594997
 MS Sample ID: 1595000 BND
 MSD Sample ID:

Analysis Date: 12/09/2020 9:36
 Analysis Date: 12/09/2020 9:50
 Analysis Date:
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206405001

Results by SW6020B

Parameter	Sample	Matrix Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
		Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Lead	0.857J	1250	1390	111				75-125		

Batch Information

Analytical Batch: MMS10963
 Analytical Method: SW6020B
 Instrument: Perkin Elmer Nexlon P5
 Analyst: DMM
 Analytical Date/Time: 12/9/2020 9:50:49AM

Prep Batch: MXX33869
 Prep Method: 3010 H2O Digest for Metals ICP-MS
 Prep Date/Time: 12/4/2020 9:33:13AM
 Prep Initial Wt./Vol.: 25.00mL
 Prep Extract Vol: 25.00mL

Print Date: 12/14/2020 3:26:29PM



Method Blank

Blank ID: MB for HBN 1814528 [VXX/36712]

Blank Lab ID: 1594423

QC for Samples:

1206405001, 1206405002

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.200U	0.400	0.120	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.0375U	0.0750	0.0180	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	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	2.50U	5.00	2.00	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

Print Date: 12/14/2020 3:26:30PM

Method Blank

Blank ID: MB for HBN 1814528 [VXX/36712]

Blank Lab ID: 1594423

QC for Samples:

1206405001, 1206405002

Matrix: Water (Surface, Eff., Ground)

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	5.00U	10.0	3.10	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	101	81-118		%
4-Bromofluorobenzene (surr)	103	85-114		%
Toluene-d8 (surr)	103	89-112		%

Print Date: 12/14/2020 3:26:30PM



Method Blank

Blank ID: MB for HBN 1814528 [VXX/36712]
Blank Lab ID: 1594423

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1206405001, 1206405002

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
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Batch Information

Analytical Batch: VMS20506
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 11/25/2020 6:21:00PM

Prep Batch: VXX36712
Prep Method: SW5030B
Prep Date/Time: 11/25/2020 12:30:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 12/14/2020 3:26:30PM

Leaching Blank

Blank ID: LB for HBN 1814475 [TCLP/10930]
 Blank Lab ID: 1594216

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
 1206405001, 1206405002

Results by SW8260D

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
1,1-Dichloroethene	25.0U	50.0	15.5	ug/L
1,2-Dichloroethane	12.5U	25.0	7.50	ug/L
1,4-Dichlorobenzene	12.5U	25.0	7.50	ug/L
2-Butanone (MEK)	250U	500	155	ug/L
Benzene	10.0U	20.0	6.00	ug/L
Carbon tetrachloride	25.0U	50.0	15.5	ug/L
Chlorobenzene	12.5U	25.0	7.50	ug/L
Chloroform	25.0U	50.0	15.5	ug/L
Hexachlorobutadiene	25.0U	50.0	15.5	ug/L
Tetrachloroethene	25.0U	50.0	15.5	ug/L
Trichloroethene	25.0U	50.0	15.5	ug/L
Vinyl chloride	25.0U	50.0	15.5	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	102	81-118		%
4-Bromofluorobenzene (surr)	103	85-114		%
Toluene-d8 (surr)	103	89-112		%

Batch Information

Analytical Batch: VMS20506
 Analytical Method: SW8260D
 Instrument: Agilent 7890-75MS
 Analyst: NRB
 Analytical Date/Time: 11/25/2020 4:09:00PM

Prep Batch: VXX36712
 Prep Method: SW5030B
 Prep Date/Time: 11/25/2020 12:30:00PM
 Prep Initial Wt./Vol.: 5 mL
 Prep Extract Vol: 5 mL



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206405 [VXX36712]
 Blank Spike Lab ID: 1594424
 Date Analyzed: 11/25/2020 23:29

Spike Duplicate ID: LCSD for HBN 1206405 [VXX36712]
 Spike Duplicate Lab ID: 1594425
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206405001, 1206405002

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
1,1,1,2-Tetrachloroethane	30	32.6	109	30	32.0	107	(78-124)	1.70	(< 20)
1,1,1-Trichloroethane	30	30.8	103	30	30.2	101	(74-131)	2.00	(< 20)
1,1,2,2-Tetrachloroethane	30	33.4	111	30	34.2	114	(71-121)	2.30	(< 20)
1,1,2-Trichloroethane	30	34.2	114	30	33.7	112	(80-119)	1.40	(< 20)
1,1-Dichloroethane	30	32.4	108	30	31.7	106	(77-125)	2.30	(< 20)
1,1-Dichloroethene	30	32.2	107	30	31.4	105	(71-131)	2.50	(< 20)
1,1-Dichloropropene	30	32.4	108	30	31.7	106	(79-125)	2.20	(< 20)
1,2,3-Trichlorobenzene	30	38.5	128	30	39.3	131	* (69-129)	2.10	(< 20)
1,2,3-Trichloropropane	30	33.0	110	30	32.9	110	(73-122)	0.18	(< 20)
1,2,4-Trichlorobenzene	30	35.6	119	30	35.9	120	(69-130)	0.74	(< 20)
1,2,4-Trimethylbenzene	30	33.3	111	30	32.5	108	(79-124)	2.20	(< 20)
1,2-Dibromo-3-chloropropane	30	35.3	118	30	36.6	122	(62-128)	3.50	(< 20)
1,2-Dibromoethane	30	33.9	113	30	34.1	114	(77-121)	0.53	(< 20)
1,2-Dichlorobenzene	30	32.8	109	30	32.4	108	(80-119)	1.10	(< 20)
1,2-Dichloroethane	30	30.2	101	30	30.1	100	(73-128)	0.56	(< 20)
1,2-Dichloropropane	30	33.3	111	30	33.0	110	(78-122)	0.76	(< 20)
1,3,5-Trimethylbenzene	30	33.2	111	30	32.2	107	(75-124)	3.20	(< 20)
1,3-Dichlorobenzene	30	32.9	110	30	32.4	108	(80-119)	1.40	(< 20)
1,3-Dichloropropane	30	34.2	114	30	34.0	113	(80-119)	0.75	(< 20)
1,4-Dichlorobenzene	30	33.0	110	30	32.2	107	(79-118)	2.40	(< 20)
2,2-Dichloropropane	30	25.6	85	30	25.1	84	(60-139)	2.00	(< 20)
2-Butanone (MEK)	90	115	127	90	120	133	(56-143)	4.60	(< 20)
2-Chlorotoluene	30	32.9	110	30	34.2	114	(79-122)	3.70	(< 20)
2-Hexanone	90	108	120	90	111	124	(57-139)	3.20	(< 20)
4-Chlorotoluene	30	33.4	111	30	32.6	109	(78-122)	2.50	(< 20)
4-Isopropyltoluene	30	33.3	111	30	32.4	108	(77-127)	2.80	(< 20)
4-Methyl-2-pentanone (MIBK)	90	96.4	107	90	100	112	(67-130)	4.20	(< 20)
Benzene	30	33.1	110	30	32.0	107	(79-120)	3.60	(< 20)
Bromobenzene	30	32.7	109	30	32.2	107	(80-120)	1.50	(< 20)
Bromochloromethane	30	30.8	103	30	30.9	103	(78-123)	0.02	(< 20)
Bromodichloromethane	30	31.9	106	30	31.7	106	(79-125)	0.81	(< 20)
Bromoform	30	32.6	109	30	33.2	111	(66-130)	1.60	(< 20)
Bromomethane	30	23.4	78	30	23.2	77	(53-141)	0.63	(< 20)
Carbon disulfide	45	48.0	107	45	46.8	104	(64-133)	2.50	(< 20)

Print Date: 12/14/2020 3:26:32PM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1206405 [VXX36712]
 Blank Spike Lab ID: 1594424
 Date Analyzed: 11/25/2020 23:29

Spike Duplicate ID: LCSD for HBN 1206405 [VXX36712]
 Spike Duplicate Lab ID: 1594425
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206405001, 1206405002

Results by SW8260D

Parameter	Blank Spike (ug/L)			Spike Duplicate (ug/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Carbon tetrachloride	30	31.7	106	30	31.3	104	(72-136)	1.20	(< 20)
Chlorobenzene	30	32.5	108	30	31.9	106	(82-118)	1.70	(< 20)
Chloroethane	30	35.4	118	30	32.9	110	(60-138)	7.10	(< 20)
Chloroform	30	31.5	105	30	30.9	103	(79-124)	1.70	(< 20)
Chloromethane	30	33.8	113	30	32.9	110	(50-139)	2.70	(< 20)
cis-1,2-Dichloroethene	30	31.6	105	30	31.0	103	(78-123)	1.80	(< 20)
cis-1,3-Dichloropropene	30	31.7	106	30	31.5	105	(75-124)	0.37	(< 20)
Dibromochloromethane	30	33.7	112	30	33.2	111	(74-126)	1.30	(< 20)
Dibromomethane	30	31.1	104	30	31.4	105	(79-123)	0.85	(< 20)
Dichlorodifluoromethane	30	33.5	112	30	32.7	109	(32-152)	2.50	(< 20)
Ethylbenzene	30	33.0	110	30	32.3	108	(79-121)	2.20	(< 20)
Freon-113	45	48.3	107	45	47.2	105	(70-136)	2.40	(< 20)
Hexachlorobutadiene	30	33.5	112	30	32.9	110	(66-134)	1.90	(< 20)
Isopropylbenzene (Cumene)	30	33.2	111	30	32.6	109	(72-131)	2.00	(< 20)
Methylene chloride	30	31.0	103	30	31.1	104	(74-124)	0.08	(< 20)
Methyl-t-butyl ether	45	49.2	109	45	49.2	109	(71-124)	0.05	(< 20)
Naphthalene	30	37.1	124	30	38.7	129	* (61-128)	4.30	(< 20)
n-Butylbenzene	30	34.3	114	30	33.6	112	(75-128)	2.00	(< 20)
n-Propylbenzene	30	33.8	113	30	32.9	110	(76-126)	2.60	(< 20)
o-Xylene	30	33.2	111	30	32.4	108	(78-122)	2.50	(< 20)
P & M -Xylene	60	66.2	110	60	64.8	108	(80-121)	2.30	(< 20)
sec-Butylbenzene	30	33.9	113	30	33.2	111	(77-126)	2.20	(< 20)
Styrene	30	33.0	110	30	32.3	108	(78-123)	2.10	(< 20)
tert-Butylbenzene	30	33.3	111	30	32.9	110	(78-124)	1.10	(< 20)
Tetrachloroethene	30	31.6	105	30	30.8	103	(74-129)	2.60	(< 20)
Toluene	30	32.6	109	30	31.9	106	(80-121)	2.20	(< 20)
trans-1,2-Dichloroethene	30	31.5	105	30	30.9	103	(75-124)	2.00	(< 20)
trans-1,3-Dichloropropene	30	32.2	107	30	31.9	106	(73-127)	0.93	(< 20)
Trichloroethene	30	31.3	104	30	30.7	102	(79-123)	1.90	(< 20)
Trichlorofluoromethane	30	34.1	114	30	33.3	111	(65-141)	2.40	(< 20)
Vinyl acetate	30	38.8	129	30	39.4	131	(54-146)	1.60	(< 20)
Vinyl chloride	30	33.5	112	30	32.7	109	(58-137)	2.50	(< 20)
Xylenes (total)	90	99.5	111	90	97.2	108	(79-121)	2.30	(< 20)

Print Date: 12/14/2020 3:26:32PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1206405 [VXX36712]
 Blank Spike Lab ID: 1594424
 Date Analyzed: 11/25/2020 23:29

Spike Duplicate ID: LCSD for HBN 1206405 [VXX36712]
 Spike Duplicate Lab ID: 1594425
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206405001, 1206405002

Results by SW8260D

Parameter	Blank Spike (%)			Spike Duplicate (%)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	98.4	98	30	98.5	99	(81-118)	0.12	
4-Bromofluorobenzene (surr)	30	98.7	99	30	98.9	99	(85-114)	0.18	
Toluene-d8 (surr)	30	103	103	30	103	103	(89-112)	0.24	

Batch Information

Analytical Batch: **VMS20506**
 Analytical Method: **SW8260D**
 Instrument: **Agilent 7890-75MS**
 Analyst: **NRB**

Prep Batch: **VXX36712**
 Prep Method: **SW5030B**
 Prep Date/Time: **11/25/2020 12:30**
 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
 Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 12/14/2020 3:26:32PM

Method Blank

Blank ID: MB for HBN 1814604 [XXX/44279]
Blank Lab ID: 1594724

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1206405001

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	82.2	60-120		%

Batch Information

Analytical Batch: XFC15827
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: A.A
Analytical Date/Time: 12/7/2020 2:34:00PM

Prep Batch: XXX44279
Prep Method: SW3520C
Prep Date/Time: 12/2/2020 2:57:13PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 12/14/2020 3:26:35PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1206405 [XXX44279]
 Blank Spike Lab ID: 1594725
 Date Analyzed: 12/07/2020 14:44

Spike Duplicate ID: LCSD for HBN 1206405
 [XXX44279]
 Spike Duplicate Lab ID: 1594726
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206405001

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	20	19.5	98	20	18.3	92	(75-125)	6.50	(< 20)

Surrogates

5a Androstane (surr)	0.4	99.9	100	0.4	92.9	93	(60-120)	7.30	
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Batch Information

Analytical Batch: **XFC15827**
 Analytical Method: **AK102**
 Instrument: **Agilent 7890B F**
 Analyst: **A.A**

Prep Batch: **XXX44279**
 Prep Method: **SW3520C**
 Prep Date/Time: **12/02/2020 14:57**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

Print Date: 12/14/2020 3:26:37PM



Method Blank

Blank ID: MB for HBN 1814604 [XXX/44279]

Blank Lab ID: 1594724

QC for Samples:
1206405001

Matrix: Water (Surface, Eff., Ground)

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.250U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62 (surr)	95.9	60-120		%

Batch Information

Analytical Batch: XFC15827
Analytical Method: AK103
Instrument: Agilent 7890B F
Analyst: A.A
Analytical Date/Time: 12/7/2020 2:34:00PM

Prep Batch: XXX44279
Prep Method: SW3520C
Prep Date/Time: 12/2/2020 2:57:13PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 12/14/2020 3:26:38PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1206405 [XXX44279]
 Blank Spike Lab ID: 1594725
 Date Analyzed: 12/07/2020 14:44

Spike Duplicate ID: LCSD for HBN 1206405 [XXX44279]
 Spike Duplicate Lab ID: 1594726
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1206405001

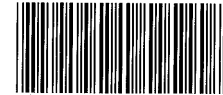
Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	20	20.1	101	20	18.4	92	(60-120)	8.70	(< 20)
Surrogates									
n-Triacontane-d62 (surr)	0.4	109	109	0.4	95.1	95	(60-120)	13.30	

Batch Information

Analytical Batch: **XFC15827**
 Analytical Method: **AK103**
 Instrument: **Agilent 7890B F**
 Analyst: **A.A**

Prep Batch: **XXX44279**
 Prep Method: **SW3520C**
 Prep Date/Time: **12/02/2020 14:57**
 Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL



Profile 362785 coder 1 of 1

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

CHAIN-OF-CUSTODY RECORD

Laboratory SGS Page 1 of 1
Attn: Justin Nelson

400 N. 34th Street, Suite 100 Seattle, WA 98103 (206) 632-8020
2355 Hill Road Fairbanks, AK 99709 (907) 479-0600
3990 Collins Way, Suite 100 Lake Oswego, OR 97035 (503) 223-6147

2043 Westport Center Drive St. Louis, MO 63146-3564 (314) 699-9660
5430 Fairbanks Street, Suite 3 Anchorage, AK 99518 (907) 561-2120
1321 Bannock Street, Suite 200 Denver, CO 80204 (303) 825-3800

2705 Saint Andrews Loop, Suite A Pasco, WA 99301-3378 (509) 946-6309

Analysis Parameters/Sample Container Description
(include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Comp.	Grab	DRO/RRO	CAK102/AK103	VOCs	EPA 8260C	Total Lead	EPA 6020A	(HCL)	(HCl)	(HNO ₃)	Total Number of Containers	Remarks/Matrix
102104 - B4MW		11:42	11/24/20	X	X	X	X	X	X						6	Groundwater
102104 - TB		11:00	11/24/20	X			X								3	trip blank

IAF
ZAC

Project Information		Sample Receipt	
Project Number: <u>102104</u>	Total Number of Containers		
Project Name: <u>1021 East 3rd Ave</u>	COC Seals/Intact? Y/N/NA		
Contact: <u>DLO/JKH</u>	Received Good Cond./Cold		
Ongoing Project? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Delivery Method:		
Sampler: <u>JKH/CP</u>	(attach shipping bill, if any)		

Instructions	
Requested Turnaround Time: <u>Standard</u>	
Special Instructions:	

Distribution: White - w/shipment - returned to Shannon & Wilson w/ laboratory report
Yellow - w/shipment - for consignee files
Pink - Shannon & Wilson - Job File

Relinquished By: 1.		Relinquished By: 2.		Relinquished By: 3.	
Signature: <u>JKH</u>	Time: <u>14:20</u>	Signature:	Time:	Signature:	Time:
Printed Name: <u>Judy Hepner</u>	Date: <u>11/24/20</u>	Printed Name:	Date:	Printed Name:	Date:
Company: <u>Shannon & Wilson, Inc</u>		Company:		Company:	
Received By: 1.		Received By: 2.		Received By: 3.	
Signature:	Time:	Signature:	Time:	Signature: <u>JKH</u>	Time: <u>14:22</u>
Printed Name:	Date:	Printed Name:	Date:	Printed Name: <u>JKH</u>	Date: <u>11/24/20</u>
Company:		Company:		Company: <u>SGS D00 4-S Absent HD</u>	



e-Sample Receipt Form

SGS Workorder #:

1206405

1206405

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	
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 @ 4.5 °C Therm. ID: D60
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples match COC** (i.e., sample IDs, dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
Were proper containers (type/mass/volume/preservative***) used?	Yes	N/A ***Exemption permitted for metals (e.g.200.8/6020A).
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

<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container Condition</u>
1206405001-A	HCL to pH < 2	OK			
1206405001-B	HCL to pH < 2	OK			
1206405001-C	HCL to pH < 2	OK			
1206405001-D	HCL to pH < 2	OK			
1206405001-E	HCL to pH < 2	OK			
1206405001-F	HNO3 to pH < 2	OK			
1206405002-A	HCL to pH < 2	OK			
1206405002-B	HCL to pH < 2	OK			
1206405002-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: Alec Rizzo

Title: 2020 Groundwater Monitoring Event

Date: January 2021

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.

Laboratory Report Number: 1206405

Laboratory Report Date: 12/14/2020

Contaminated Site Name: MOA – Brother Francis Shelter Property

ADEC File Number: 2100.26.326

Hazard Identification Number: 24899

(NOTE: NA = not applicable; Text in *italics* added by Shannon & Wilson, Inc.)

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? **Yes** / No / NA

Comments:

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

Yes / No / **NA**

Comments: *The samples were not transferred to another "network" laboratory or sub-contracted to an alternate laboratory.*

2. Chain of Custody (COC)

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

Yes / No / NA

Comments:

- b. Correct analyses requested? **Yes** / No / NA

Comments:

3. Laboratory Sample Receipt Documentation

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

Yes / No / NA

Comments: *The cooler temperature blank was 4.5° Celsius.*

- b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes** / No / NA

Comments:

- c. Sample condition documented - broken, leaking (MeOH), zero headspace (VOC vials)? **Yes** / No / NA

Comments:

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? **Yes** / **No** / NA

Comments: *No discrepancies were noted.*

- e. Data quality or usability affected?

Comments: *See above.*

4. Case Narrative

- a. Present and understandable? **Yes** / No / NA

Comments:

- b. Discrepancies, errors or QC failures noted by the lab? **Yes** / No / **NA**

Comments: *The case narrative noted the following:*

- *LCSD – 8260D - recoveries for naphthalene and 1,2,3-trichlorobenzene do not meet QC criteria. These analytes were not detected above the LOQ in the associated samples.*
- *MSD – 6020B - recovery for Lead does not meet QC criteria. Post digestion spike was successful.*

- c. Were all corrective actions documented? **Yes** / No / NA

Comments:

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

Comments: *The case narrative does not discuss quality/usability.*

5. Sample Results

- a. Correct analyses performed/reported as requested on COC? **Yes** / No / NA

Comments:

- b. All applicable holding times met? **Yes** / No / NA

Comments:

- c. All soils reported on a dry weight basis? **Yes** / No / **NA**

Comments: *Soil samples not submitted for project.*

- d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project? Yes **No** / NA

Comments: *The LOQ for 1,2,3-trichloropropane was above the ADEC Method Two cleanup level.*

- e. Data quality or usability affected?

Comments: *There is a potential that the target analyte is present at a concentration greater than the ADEC cleanup level, but less than the LOQ; however, the analyte was not detected at estimated concentrations in the project sample.*

6. QC Samples

a. Method Blank

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

Yes / No / NA

Comments:

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

Yes / No / NA

Comments:

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

Comments:

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

Yes / No / **NA**

Comments:

- v. Data quality or usability affected?

Comments: *See above.*

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

- i. Organics - One LCS/LCSD reported per matrix, analysis, and 20 samples?

(LCS/LCSD required per AK methods, LCS required per SW846) **Yes** / No / NA

Comments:

- ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples? **Yes** / No / NA

Comments:

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK petroleum methods: AK 101 60%-120%, AK 102 75%-125%, AK 103 60%-120%; all other analyses see the laboratory QC pages) **Yes / No / NA**

Comments: *Recoveries for naphthalene and 1,2,3-trichlorobenzene do not meet QC criteria.*

- iv. Precision – All relative percent differences (RPDs) 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 / NA**

Comments:

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

Comments: *Sample B4MW.*

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

Yes / No / NA Comments: *The analytes were not detected above the LOQ in the associated sample. Therefore, flagging is not required.*

- vii. Data quality or usability affected?

Comments: *No, see above.*

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

Note: Leave blank if not required for project

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

Yes / No / NA

Comments:

- ii. Metals/Inorganics - One MS and one MSD reported per matrix, analysis and 20 samples? **Yes / No / NA**

Comments:

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. **Yes / No / NA**

Comments: *MSD recovery for lead does not meet QC criteria.*

- iv. Precision – All relative percent differences (RPDs) reported and less than method or laboratory limits and project specified objectives, if applicable. RPD reported from MS/MSD, and/or sample/sample duplicate. **Yes / No / NA**

Comments:

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

Comments: *Sample B4MW.*

- vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?
Yes / No / **NA**

Comments: *No, the %R for both the MS sample and the post digestion spike meet QC criteria and the sample used as the parent was collected from another work order. Therefore, flagging is not required.*

- vii. Data quality or usability affected?

Comments: *No, see above.*

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

- i. Are surrogate/IDA recoveries reported for organic analyses - field, QC, and laboratory samples? **Yes** / No / NA

Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) **Yes** / No / NA

Comments:

- iii. Do the sample results with failed surrogate/IDA recoveries have data flags? If so, are the data flags clearly defined? Yes / No / **NA**

Comments:

- iv. Data quality or usability affected?

Comments: *See above.*

e. Trip Blank - Volatile analyses only (GRO, BTEX, VOCs, etc.)

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.) **Yes** / No / NA

Comments:

- ii. Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? (If not, a comment explaining why must be entered below.) Yes / **No** / NA

Comments: *Only one cooler was used to transport the samples.*

- iii. All results less than LOQ and project specified objectives? **Yes** / No / NA

Comments:

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

Comments:

- v. Data quality or usability affected?

Comments: *See above.*

f. Field Duplicate

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

Yes / **No** / NA

Comments: *A field duplicate was not submitted with this work order.*

- ii. Were the field duplicates submitted blind to the lab? Yes / No / **NA**

Comments:

- iii. Precision – All relative percent differences (RPDs) less than specified project objectives? (Recommended: 30% for water, 50% for soil) Yes / No / **NA**

Comments:

- iv. Data quality or usability affected?

Comments:

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

Yes / **No** / NA

Comments: *A decontamination or equipment blank was not included in our ADEC-approved work plan.*

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

Yes / No / **NA**

Comments:

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

Comments:

- iii. Data quality or usability affected?

Comments:

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

- a. Defined and appropriate? **Yes** / No / NA

Comments: *A key is provided on Page 3 of the SGS Laboratory Report.*

Appendix C: Disposal Receipts

Appendix C

Disposal Receipts

APPENDIX C: DISPOSAL RECEIPTS



**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		
4636	Former Second Avenue Easement, 1021 East Third Avenue		
CONTAMINATED SITE OR SPILL LOCATION – ADDRESS OR OTHER APPROPRIATE DESCRIPTION			
Former Second Avenue Easement, 1021 East Third Avenue, MOA - Brother Francis Shelter Property			
CURRENT PHYSICAL LOCATION OF MEDIA		SOURCE OF THE CONTAMINATION (DAY TANK, WASH BAY, FIRE TRAINING PIT, LUST, ETC.)	
Former Second Avenue Easement/Purge Water		Former Second Avenue Easement Tanks	
CONTAMINANTS OF CONCERN		ESTIMATED VOLUME	DATE(S) GENERATED
DRO, RRO, total lead		1, 55-gal drum	10/15/20 through 10/17/20, 11/24/20
POST TREATMENT ANALYSIS REQUIRED (such as GRO, DRO, RRO, VOCs, metals, PFAS, and/or Chlorinated Solvents)			
NA			
COMMENTS OR OTHER IMPORTANT INFORMATION			
Impacted purge and decontamination water generated during sampling Wells B3MW, B4MW, B5WM, B11MW, and B17MW during the October/November 2020 groundwater sampling events.			

TREATMENT FACILITY, LANDFILL, AND/OR FINAL DESTINATION OF MEDIA	PHYSICAL ADDRESS/PHONE NUMBER
NRC Alaska LLC, an US Ecology Company	2020 Viking Drive, Anchorage, Alaska 99501 / (907) 258-1558
RESPONSIBLE PARTY	ADDRESS/PHONE NUMBER
Municipality of Anchorage / Jon Clark	3640 Tudor Road, Anchorage, AK 99507 / 907-343-8257
WASTE MANAGEMENT CO. / ORGANIZER	ADDRESS/PHONE NUMBER
NRC Alaska LLC, an US Ecology Company	2020 Viking Drive, Anchorage, 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.

Alec Rizzo

Name of the Person Requesting Approval (printed)

Alec Rizzo

Digitally signed by Alec Rizzo
Date: 2021.01.06 08:59:44 -09'00'

Signature

Environmental Staff

Title/Association

1/6/21

Date

907-561-2120

Phone Number

-----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.

Julie Fix

Environmental Program Specialist

DEC Project Manager Name (printed)

DocuSigned by:
Julie Fix
C13B384FF3D0465...

Signature

Project Manager Title

1/6/2021

Date

907-465-5368

Phone Number

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. AKR 000 208 797		Manifest Document No. 162017A	2. Page 1 of 1
3. Generator's Name and Mailing Address MUNICIPALITY OF ANCHORAGE 3640 TUDOR ROAD ANCHORAGE, AK 99507		MOA - BROTHER FRANCIS SHELTER 1021 EAST THIRD AVENUE ANCHORAGE, AK 99501			
4. Generator's Phone ()		6. US EPA ID Number AKR000004184		A. State Transporter's ID 907 258 1558	B. Transporter 1 Phone
5. Transporter 1 Company Name NRC ALASKA LLC		8. US EPA ID Number		C. State Transporter's ID	D. Transporter 2 Phone
7. Transporter 2 Company Name		10. US EPA ID Number AKR000004184		E. State Facility's ID	F. Facility's Phone 907-258-1558
9. Designated Facility Name and Site Address NRC ALASKA LLC 2020 VIKING DRIVE ANCHORAGE, AK 99501					
11. WASTE DESCRIPTION		Containers		13. Total Quantity	14. Unit Wt./Vol.
a. HM Material Not Regulated by DOT		No.	Type		
b.					
c.					
d.					
G. Additional Descriptions for Materials Listed Above 1) EA0302 IDW DECON WATER/GROUNDWATER		H. Handling Codes for Wastes Listed Above D34519			
15. Special Handling Instructions and Additional Information Shipper's Certification: This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation					
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.					
Printed/Typed Name Alex Rizzo		Signature <i>[Signature]</i>		Date Month Day Year 2 2 21	
17. Transporter 1 Acknowledgement of Receipt of Materials					
Printed/Typed Name Dan Combs		Signature <i>[Signature]</i>		Date Month Day Year 2 2 21	
18. Transporter 2 Acknowledgement of Receipt of Materials					
Printed/Typed Name		Signature		Date Month Day Year	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.					
Printed/Typed Name		Signature		Date Month Day Year	

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY

Appendix D: Important Information

Appendix D

Important Information

About Your Geotechnical/Environmental Report

IMPORTANT INFORMATION



Date: February 2021
To: Municipality of Anchorage

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports, and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland