SHANNON & WILSON
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

March 31, 2021

Ms. Lisa Krebs-Barsis
Alaska Department of Environmental Conservation
555 Cordova Street
Anchorage, Alaska 99501

RE: SITE CHARACTERIZATION ACTIVITIES, FORMER MARKAIR FACILITY, KING SALMON, ALASKA, *ADEC FILE NO. 2569.38.009*

This letter report presents the results of Shannon & Wilson, Inc.'s (Shannon & Wilson) site characterization activities conducted at the former MarkAir facility located in King Salmon, Alaska. A vicinity map of the area is included as Figure 1 and a site plan is included as Figure 2.

Authorization to proceed with the project was provided by the Alaska Department of Environmental Conservation (ADEC) in the form of Notice to Proceed Number 200000683 dated May 5, 2020. The work was conducted in accordance with our *Site Characterization Work Plan, Former MarkAir Facility, King Salmon, Alaska,* dated March 2020. The work plan was approved by Mr. Joshua Barsis of the ADEC in the form of an email dated March 23, 2020.

BACKGROUND

The former MarkAir facility is located on Lot 2, Block 1 of the King Salmon Airport. The facility is located on the western side of the runway apron, near the northwest end of the airport's northwest/southeast runway as shown on Figure 1. A building formerly utilized by MarkAir as a cargo and terminal facility is located at the site. A fuel tank farm was previously located on the unpaved southeastern portion of the property. A former fuel cabinet was present northeast of the building and a decommissioned buried fuel pipeline extends towards the former fuel storage area. Additional aboveground storage tanks (ASTs) and underground storage tanks (USTs) were located south and east of the terminal building. An approximately 1,000-gallon heating oil AST is present near the north corner of the terminal building. A site plan showing relevant site features and monitoring well locations is included as Figure 2.

Impacted soil and groundwater has been documented at the former MarkAir facility and extends off-property towards the west/southwest. Between 2004 and 2009, Shannon &

5430 Fairbanks Street ■ Suite 3 ■ Anchorage, Alaska 99518-1263 ■ 907 561-2120 ■ Fax 206 695-6777
■ www.shannonwilson.com ■

Wilson installed 21 groundwater monitoring wells (B1MW through B21MW) on- and off-property. Free-phase petroleum product has been observed in on-property Monitoring Wells B4MW, B5MW, and B9MW, and in off-property Monitoring Wells B10MW and B11MW.

In January 2008, Shannon & Wilson installed passive product collection bailers in Monitoring Wells B4MW and B5MW and a passive skimmer in Monitoring Well B9MW. During product monitoring and recovery efforts conducted between 2008 and 2014, approximately 200 gallons of petroleum product were recovered from Monitoring Wells B4MW, B5MW, and B9MW, with most of the product generated from Monitoring Well B9MW. Through 2016, Shannon & Wilson continued to conduct ongoing groundwater monitoring and free-product activities at the site.

FIELD ACTIVITIES

The field effort included groundwater sampling and analysis, surveying, and investigation-derived waste (IDW) disposal. SGS North America Inc. (SGS) performed analytical testing of the groundwater samples. NRC Alaska, LLC (NRC) treated/disposed of the impacted purge water generated during the sampling activities. Field notes are included in Attachment 1.

Groundwater Sampling and Analysis

Groundwater sampling was conducted between September 21 through 24, 2020. Sampling activities were initiated by measuring groundwater and total well depths from Monitoring Wells B1MW through B5MW, B7MW, B9MW through B13MW, and B16MW through B21MW. Monitoring Well B6MW could not be sampled due to a vehicle located over the well and B14MW and B15MW could not be located. A down-hole dual-phase probe was used to measure depth to water and free-phase product thickness, if present. The probe was decontaminated using an alconox/water mixture and a water rinse prior to insertion in each well. Product was measured in Wells B4MW, B5MW, B9MW, B10MW and B11MW; therefore, these wells were not sampled. The depths to groundwater and product in the monitoring wells are listed on Table 1.

The monitoring wells were sampled from least to most contaminated, based on historical results. Wells B12MW, B13MW, B16MW, B19MW, B20MW, and B21MW have contained the least contamination and were sampled first. Next, groundwater samples were collected from Wells B3MW and B17MW. Wells B1MW, B2MW, B7MW, and B18MW have contained the highest contaminant concentrations and were sampled last. The wells were purged and

sampled using a low-flow technique, with a submersible pump with disposable vinyl tubing. Sampling was initiated by purging each well to reduce the effect of stagnant well casing water on chemical concentrations and to obtain groundwater samples that are representative of the surrounding water-bearing formation. A submersible pump was placed between 1 and 2 feet below the groundwater interface to avoid sediment disturbance. The pump rate was set at 0.1 to 0.5 liter per minute (L/min) with a goal of limiting the sustained water drawdown to a maximum of 4 inches. The drawdown was determined using an electronic water probe that was checked regularly throughout the purging/sampling process.

During the purging process, field personnel monitored water quality parameters (pH, conductivity, dissolved oxygen (DO), temperature, oxidation reduction potential (ORP), and turbidity) and purge volume at 3 to 5 minute intervals. When water quality parameters stabilized over three successive readings (pH within 0.1 unit, conductivity within 3 percent, temperature within 3 percent [minimum 0.2 degree Celsius], and turbidity within 10 percent or three consecutive readings of less than 10 Nephelometric Turbidity Units [NTUs]) groundwater samples were collected. Water quality parameters stabilized in all wells prior to collecting groundwater samples.

Analytical samples were collected in decreasing order of volatility by transferring water directly from the pump tubing into laboratory-supplied containers. The pump was decontaminated in between each well. Approximately 30 gallons of purge water and decontamination water were generated and stored in a 55-gallon drum on site. Final water quality parameters are listed on Table 1.

Level-Loop Well Survey

The vertical elevations of the groundwater monitoring wells were measured using a level loop vertical survey. Survey readings of the monitoring wells were taken relative to an arbitrary onsite benchmark to assess groundwater flow direction. Due to accuracy issues, the elevation survey of the monitoring wells could not be closed within 0.01 foot. In our opinion, the survey data is consistent with previous survey results and can still be used to determine estimated groundwater elevations. The vertical top of well casing and groundwater elevations are shown on Table 1.

The calculated groundwater elevations, and horizontal measurements, which were previously recorded by a professional land surveyor, were incorporated into Golden Software Surfer12, to develop the groundwater elevation contours shown on Figure 3. The

coordinates which were input into the software is included in Attachment 1. Similar to past sampling events, the overall groundwater flow direction is to the west/northwest, which is consistent with topography and the flow direction of the Naknek River.

Although, groundwater in the vicinity of the former MarkAir property appears to converge on a depression located in the vicinity of Well B2MW and a former drinking water well, with a gradient of approximately 0.05 to 0.06 foot per feet. In addition, groundwater mounding is observed south of the former PenAir terminal, generally located between Wells B7MW and B18MW. Groundwater west of Well B18MW generally flows to the west with a gradient of approximately 0.03 foot per feet.

Investigation Derived Waste

One 55-gallon drum containing purge water was transported to Anchorage on September 24, 2020 by Ace Air Cargo. The drum and contents were disposed/treated by NRC. A copy of the purge water disposal receipt is included as Attachment 2.

Work Plan Deviations

Monitoring wells B14MW and B15MW could not be located and a vehicle was parked over Well B6MW. Therefore, these three wells were not sampled during the October 2020 sampling event. The work plan stated that we would sample B3MW, B7MW, B15MW, and B20MW for per- and polyfluoroalkyl substances (PFAS). Well B15MW was not located, therefore, a PFAS sample could not be collected from the well. With ADEC approval, the sample collected from Well B13MW was analyzed for PFAS instead.

Our ADEC-approved work plan stated that swing tie measurements would be collected from the wells to fixed locations to verify the horizontal locations of the wells. The recording of swing tie measurements was inadvertently not conducted. Although, it is noted that the horizontal locations of the wells were previously documented by a professional land surveyor. These surveyed coordinates were used to plot the locations of the wells shown on Figures 2 and 3. Based on the previous professional survey, and the level-loop survey conducted during this project, groundwater elevation contours were developed and are presented on Figure 3. Therefore, it is our professional opinion that this deviation did not impact the usability of the presented groundwater contours.

LABORATORY ANALYSIS

Twelve groundwater samples and one duplicate sample were submitted to SGS North America Inc. (SGS) of Anchorage, Alaska using chain-of-custody procedures. Each groundwater sample was analyzed for diesel range organics (DRO) by Alaska Method (AK) 102, volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8060D. Wells B3MW, B7MW, B13MW, and B20MW were also analyzed for PFAS by EPA Method 537. For quality control purposes a trip blank was submitted with the volatile samples and was analyzed for VOCs by EPA Method 8260D.

DISCUSSION OF ANALYTICAL RESULTS

The reported contaminant concentrations in the groundwater samples were compared to the ADEC's groundwater cleanup levels listed in Table C of 18 AAC 75.345 (November 2020). Groundwater in King Salmon is a known drinking water source, therefore, the PFAS results were compared to the EPA Lifetime Hazard Advisory (LHA) action level presented in the ADEC's October 2019 Technical Memorandum of 70 nanograms per liter (ng/L) for the sum of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS).

The 2020 groundwater analytical results and cleanup levels are provided in Tables 2 and 3. A summary of the historical groundwater results is included in Table 4. DRO; benzene, toluene, ethylbenzene, and xylenes (BTEX), and PFAS results are provided on Figure 2. The laboratory report and the ADEC Laboratory Data Review Checklist are provided in Attachment 3.

Groundwater Sample Results - Petroleum Constituents

Groundwater samples collected from Wells B1MW (2.90 mg/L), B2MW (30.5 mg/L), B17MW (10.6 mg/L), and B18MW (5.57 mg/L) contained DRO concentrations which exceed the applicable ADEC Table C cleanup level of 1.5 mg/L. Benzene (0.0438 mg/L) and naphthalene (0.0884 mg/L) were also detected in the sample collected from Well B2MW in excess of the applicable ADEC cleanup levels of 0.0046 mg/L and 0.0017 mg/L, respectively. The remaining contaminant concentrations were either not detected or were detected at concentrations less than the applicable ADEC cleanup levels.

The analytical groundwater sample results are used to evaluate potential source areas, delineate plume boundaries, and track changes in hydrocarbon distribution throughout the plume. The following observations were noted regarding the extents and trends observed for the plume:

- Samples from Well B2MW have generally contained the highest DRO and benzene concentrations. As shown on Table 4, benzene has exhibited a general long-term decreasing trend over the last 16 years.
- DRO in samples from Wells B1MW and B3MW have exhibited general long-term decreasing trends over the last 16 years.
- Sample results from Wells B12MW and B13MW continue to exhibit non-detect or trace DRO and BTEX concentrations less than the ADEC cleanup levels, and bound the plume to the south. Although Well B15MW could not be located during the current sampling event, previous sample results from this well, also bound the plume to the south.
- Historical results indicate that the plume's leading edge is between Wells B17MW/B18MW and B19MW/B21MW. Samples from Wells B19MW and B21MW continue to exhibit non-detect or trace DRO concentrations less than the ADEC cleanup level, and bound the plume to the west and northwest, respectively.
- DRO in samples from Wells B3MW and B6MW have not been detected above the ADEC cleanup level since 2006. A sample was collected from B3MW in 2020 and contained DRO below the ADEC cleanup and continues to bound the plume to the east. A sample was not collected from Well B6MW during the current sampling event.
- Wells B10MW and B11MW have continued to exhibit trace amounts of product and have not been sampled since 2006.
- Wells B4MW, B5MW, and B9MW have historically contained product and have not been sampled.

Groundwater Sample Results - PFAS Constituents

The groundwater samples collected from Wells B3MW, B7MW, B13MW, and B20MW and analyzed for PFAS constituents. PFAS were detected in on-site Wells B3MW (248.4 ng/L) and B7MW (135.1 ng/L) at concentrations greater than the 70 ng/L EPA LHA action level. PFAS were also detected in off-site Wells B13MW (3.5 J ng/L) and B20MW (55 ng/L), however, at concentrations less than EPA LHA action level.

Quality Assurance Summary

The project laboratory implements on-going quality assurance/quality control procedures to evaluate conformance to ADEC data quality objectives (DQOs). Internal laboratory controls to assess data quality for this project include surrogates, method blanks, matrix spike/matrix spike duplicates (MS/MSD), and laboratory control sample/laboratory control sample duplicates (LCS/LCSD) to assess precision, accuracy, and matrix bias. If a DQO was not met, the project laboratory provides a brief narrative concerning the problem in the case narrative of their laboratory reports (See Attachment 3).

Field quality control samples included trip blanks and a field duplicate groundwater sample set. A laboratory-prepared trip blank samples accompanied the project sample jars from the laboratory to the site during sampling activities and back again to SGS. The trip blanks did not contain detectable concentrations of VOCs.

One duplicate groundwater sample set (B18MW/B28MW) was collected to assess precision of the sampling and analysis processes using the calculated relative percent difference (RPD). All of the RPDs are within the ADEC recommended DQO of 30 percent for groundwater.

An estimated concentration of DRO was detected in the method blank associated with all of the groundwater samples. Samples are flagged "B" in Table 2 when the reported sample concentration is within 10 times the reported method blank concentration. Estimated concentrations of DRO were detected in Samples B12MW, B13MW, and B19MW at levels less than the LOQ; therefore, the sample concentrations are reported as non-detect at the LOQ. The concentrations of DRO detected in Samples B16MW, B20MW, and B21MW are greater than the LOQ but less than 5 times the blank concentration, therefore the results are flagged "B", and reported as non-detect at the detected concentration. The concentrations of DRO detected in Samples B3MW and B7MW are within 5 times the method blank detection. These results are consistent with historical sample results. Therefore, based on professional judgment the results are flagged "B" and reported at the detected concentration. The remaining DRO concentrations are greater than 10 times the blank concentration, therefore the results are reported at the detected concentration.

The MSD RPD for perfluorooctanesulfonic acid is outside the control limits for PFAS Samples B3MW, B7MW, and B13MW. However, the sample used as the parent was collected from another work order. Therefore, the data remains unaffected. In addition, PFAS Samples B3MW and B20MW have Isotope Dilution Analysis (IDA) recoveries for

Perfluorooctanesulfonamide (PFOSA) and perfluorotetradecanoic acid outside QC criteria, respectively. The non-detected results were flagged "J" in Table 3.

Shannon & Wilson reviewed the SGS data deliverables and completed an ADEC Laboratory Data Review Checklist for the project work orders. The laboratory report and data review checklist are included in Attachment 3. In our opinion, with the exceptions noted above, no non-conformances that would adversely impact data usability for the objectives of this project were noted.

CONCLUSIONS AND RECOMMENDATIONS

The historical groundwater sample results for multiple wells appear to indicate long term decreasing trends. The petroleum plume appears stable and is not currently expanding further downgradient, based on the continued non-detect contaminant concentrations downgradient of the source area at Well B9MW. The petroleum plume appears bound to the east, south, and west.

Measurable free-product was documented in Monitoring Wells B4MW, B5MW, B9MW, B10MW, and B11MW. Product thickness ranged from 0.07 feet in B5MW to 4.54 feet in B9MW. We recommend continuing to monitor the wells that have historically contained product and conduct product recovery efforts on Well B9MW.

The samples collected from on-site Wells B3MW and B7MW contained concentrations of PFAS exceeding the EPA LHA action level. The samples collected from off-site Wells B13MW and B20MW did not contain PFAS exceeding the EPA LHA action level. The source of the PFAS contamination is unknown. Therefore, we recommend conducting additional PFAS testing to evaluate the horizontal extent and source of the PFAS contamination.

CLOSURE/LIMITATIONS

This report was prepared for the exclusive use of our clients and their representatives in the study of this site. The findings we have presented within this report are based on the limited sampling and analyses that we conducted. They should not be construed as a definite conclusion regarding the site's groundwater conditions. It is possible that our tests missed higher levels, although our intention was to sample in accordance with our ADEC-approved work plan. Therefore, the sampling and analyses performed can provide you with only 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 sampling activities. 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 documents in Attachment 4, "Important Information About Your Geotechnical/Environmental Report", to assist you and others in understanding the use and limitations of our reports. 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.

We appreciate the opportunity to be of service. Please call the undersigned at (907) 561-2120 with questions or comments concerning this report.

Sincerely,

SHANNON & WILSON

Prepared by:

for:

Alec J. Rizzo
Environmental Staff

Reviewed by:

Dan P. McMahon, PMP
Senior Associate

Enc. Tables 1 through 4; Figures 1, 2, and 3; and Attachments 1 through 4

TABLE 1
GROUNDWATER SAMPLING LOG

	Monitoring Well Number						
	B1MW	**B2MW**	**B3MW**	**B4MW**	**B5MW**	**B6MW**	**B7MW**
Water Level Measurement Data							
Date Water Level Measured	9/22/2020	9/22/2020	9/22/2020	9/22/2020	9/22/2020	-	9/22/2020
Time Water Level Measured	11:15	11:07	9:20	11:33	14:40	-	11:00
Depth to Product Below TOC, Feet	-	-	-	15.81	14.50	-	-
Depth to Water Below TOC, Feet	20.02	27.52	12.34	15.99	14.57	-	16.75
Surveyed TOC Elevation, Feet	99.66	100.30	99.21	98.92	99.47	-	99.46
Water Elevation, Feet	79.64	72.78	86.87	82.93	84.90	-	82.71
Purging/Sampling Data							
Date Sampled	9/23/2020	9/23/2020	9/23/2020	NS	NS	NS	9/23/2020
Time Sampled	10:05	11:15	9:50	NS	NS	NS	11:00
Depth to Water Below TOC, Feet	20.02	27.52	12.34	-	-	-	16.75
Total Depth of Well Below TOC, Feet	31.22	31.51	21.84	25.68	24.35	24.67	19.68
Water Column in Well, Feet	11.20	3.99	9.50	9.69	9.78	-	2.93
Gallons per Foot	0.16	0.16	0.16	0.16	0.16	-	0.16
Gallons in Well	1.79	0.64	1.52	1.55	1.56	-	0.47
Total Gallons Purged	0.7	0.65	0.9	-	-	-	0.6
Purging/Sampling Method	Submersible Pump	Submersible Pump	Submersible Pump	-	-	-	Submersible Pump
Diameter of Well Casing	2-inch	2-inch	2-inch	2-inch	2-inch	2-inch	2-inch
Water Quality Data at Time of Sampling							
Temperature, °C	10.98	9.98	9.86	-	-	-	8.71
Specific Conductance, µS/cm	415	1,281	220	-	-	-	191
Dissolved Oxygen, mg/L	1.35	3.33	1.73	-	-	-	4.05
pH, standard units	6.70	6.80	5.26	-	-	-	5.96
Oxidation Reduction Potential, mV	43.6	39.5	290	-	-	-	18
Turbidity, NTU	6.99	50.80	2.65	-	-	-	8.14
Remarks		Hydrocarbon odor		0.18' product	0.07' product	Vehicle parked over well	

Notes:
Water quality parameters were measured with Horiba, YSI-556, and MicroTPW turbidimeter field meters.

°C = degrees Celsius
µS/cm = microsiemens per centimeter
NTU = Nephelometric Turbidity Unit
TOC = top of casing
mg/L = milligrams per liter
mV = millivolts
- = not applicable or not measured
NS = not sampled

TABLE 1
GROUNDWATER SAMPLING LOG

	Monitoring Well Number						
	B8MW	**B9MW**	**B10MW**	**B11MW**	**B12MW**	**B13MW**	**B14MW**
Water Level Measurement Data							
Date Water Level Measured	-	9/22/2020	9/22/2020	9/22/2020	9/22/2020	9/22/2020	-
Time Water Level Measured	-	11:50	12:05	12:00	9:36	9:44	-
Depth to Product Below TOC, Feet	-	25.46	16.02	13.46	-	-	-
Depth to Water Below TOC, Feet	-	30.00	16.21	13.60	8.58	8.67	-
Surveyed TOC Elevation, Feet	-	99.61	97.49	95.72	93.46	88.69	-
Water Elevation, Feet	-	69.61	81.28	82.12	84.88	80.02	-
Purging/Sampling Data							
Date Sampled	NS	NS	NS	NS	9/22/2020	9/22/2020	NS
Time Sampled	NS	NS	NS	NS	14:30	15:25	NS
Depth to Water Below TOC, Feet	-	-	-	-	8.58	8.67	-
Total Depth of Well Below TOC, Feet	-	31.80	24.24	24.95	19.45	14.98	19.15
Water Column in Well, Feet	-	1.80	8.03	11.35	10.87	6.31	-
Gallons per Foot	-	0.16	0.16	0.16	0.16	0.16	-
Gallons in Well	-	0.29	1.28	1.82	1.74	1.01	-
Total Gallons Pumped	-	-	-	-	0.85	0.9	-
Purging/Sampling Method	-	-	-	-	Submersible Pump	Submersible Pump	-
Diameter of Well Casing	-	2-inch	2-inch	2-inch	2-inch	2-inch	2-inch
Water Quality Data at Time of Sampling							
Temperature, °C	-	-	-	-	10.58	9.44	-
Specific Conductance, µS/cm	-	-	-	-	104	172	-
Dissolved Oxygen, mg/L	-	-	-	-	7.79	8.97	
pH, standard units	-	-	-	-	5.18	5.91	-
Oxidation Reduction Potential, mV	-	-	-	-	301	28.3	
Turbidity, NTU	-	-	-	-	7.50	8.13	-
Remarks	Assumed destroyed	4.54' product	0.19' product	0.14' product			Could not locate

Notes:
Water quality parameters were measured with Horiba, YSI-556, and MicroTPW turbidimeter field meters.

°C = degrees Celsius
µS/cm = microsiemens per centimeter
NTU = Nephelometric Turbidity Unit
TOC = top of casing
mg/L = milligrams per liter
mV = millivolts
- = not applicable or not measured
NS = not sampled

TABLE 1
GROUNDWATER SAMPLING LOG

	Monitoring Well Number						
	B15MW	**B16MW**	**B17MW**	**B18MW**	**B19MW**	**B20MW**	**B21MW**
Water Level Measurement Data							
Date Water Level Measured	-	9/22/2020	9/22/2020	9/22/2020	9/22/2020	9/22/2020	9/22/2020
Time Water Level Measured	-	9:54	10:44	11:23	10:08	10:18	10:26
Depth to Product Below TOC, Feet	-	-	-	-	-	-	-
Depth to Water Below TOC, Feet	-	14.02	11.54	13.34	15.09	9.76	10.03
Surveyed TOC Elevation, Feet	-	98.45	94.84	97.13	93.89	92.89	88.69
Water Elevation, Feet	-	84.43	83.30	83.79	78.80	83.13	78.66
Purging/Sampling Data							
Date Sampled	NS	9/22/2020	9/22/2020	9/23/2020	9/22/2020	9/22/2020	9/22/2020
Time Sampled	NS	15:40	18:05	13:55	16:50	16:45	18:30
Depth to Water Below TOC, Feet	-	14.02	11.54	13.34	15.09	9.76	10.03
Total Depth of Well Below TOC, Feet	19.94	20.04	19.08	20.10	20.22	19.98	14.91
Water Column in Well, Feet	-	6.02	7.54	6.76	5.13	10.22	4.88
Gallons per Foot	-	0.16	0.16	0.16	0.16	0.16	0.16
Gallons in Well	-	0.96	1.21	1.08	0.82	1.64	0.78
Total Gallons Pumped	-	0.55	0.55	0.6	1.0	0.8	1.4
Purging/Sampling Method	Submersible Pump	Submersible Pump	Submersible Pump	Submersible Pump	Submersible Pump	Submersible Pump	Submersible Pump
Diameter of Well Casing	2-inch	2-inch	2-inch	2-inch	2-inch	2-inch	2-inch
Water Quality Data at Time of Sampling							
Temperature, °C	-	11.71	11.40	10.15	11.64	12.94	13.07
Specific Conductance, µS/cm	-	193	251	425	315	675	251
Dissolved Oxygen, mg/L		4.60	8.17	2.06	2.81	3.29	3.47
pH, standard units	-	4.82	4.94	6.27	6.15	3.87	6.02
Oxidation Reduction Potential, mV		319	291	92	205	21.9	34.7
Turbidity, NTU	-	13.28	7.83	5.55	27.20	2.05	67.89
Remarks	Could not locate			Duplicate Sample B28MW			

Notes:
Water quality parameters were measured with Horiba, YSI-556, and MicroTPW turbidimeter field meters.

°C = degrees Celsius
µS/cm = microsiemens per centimeter
NTU = Nephelometric Turbidity Unit
TOC = top of casing
mg/L = milligrams per liter
mV = millivolts
- = not applicable or not measured
NS = not sampled

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level (mg/L)**	Sample ID Number^ and Water Depth in Feet Below TOC (See Table 1 and Figure 2)				
			Monitoring Wells				
			B1MW 20.02	B2MW 27.52	B3MW 12.34	B7MW 16.75	B12MW 8.58
Diesel Range Organics (DRO) - mg/L	AK 102	1.5	**2.90**	**30.5**	**1.24 B**	**1.27 B**	<0.571 B
Volatile Organic Compounds (VOCs)							
Benzene - mg/L	EPA 8260D	0.0046	**0.000202 J**	**0.0438**	<0.000200	<0.000200	<0.000200
Toluene - mg/L	EPA 8260D	1.1	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Ethylbenzene - mg/L	EPA 8260D	0.015	<0.000500	**0.0119**	<0.000500	<0.000500	<0.000500
Xylenes - mg/L	EPA 8260D	0.190	<0.00150	**0.00636**	<0.00150	<0.00150	<0.00150
1,2,4-Trimethylbenzene - mg/L	EPA 8260D	0.056	<0.000500	**0.000797 J**	<0.000500	<0.000500	<0.000500
1,2-Dichloroethane - mg/L	EPA 8260D	0.0017	<0.000250	**0.000486 J**	<0.000250	<0.000250	<0.000250
Dichlorodifluoromethane - mg/L	EPA 8260D	0.200	**0.000875 J**	<0.000500	<0.000500	<0.000500	<0.000500
Isopropylbenzene (Cumene) - mg/L	EPA 8260D	0.450	**0.00314**	**0.00368**	<0.000500	<0.000500	<0.000500
Naphthalene - mg/L	EPA 8260D	0.0017	<0.000500	**0.0884**	<0.000500	<0.000500	<0.000500
n-Propylbenzene - mg/L	EPA 8260D	-	<0.000500	**0.00196**	<0.000500	<0.000500	<0.000500
sec-Butylbenzene - mg/L	EPA 8260D	2	**0.00205**	**0.00124**	<0.000500	<0.000500	<0.000500
tert-Butylbenzene - mg/L	EPA 8260D	0.690	**0.00108**	**0.000356 J**	<0.000500	<0.000500	<0.000500
Tetrachloroethene - mg/L	EPA 8260D	0.041	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Trichlorofluoromethane - mg/L	EPA 8260D	5.200	<0.000500	<0.000500	**0.000435 J**	<0.000500	<0.000500
Other VOC analytes - mg/L	EPA 8260D	Various	ND	ND	ND	ND	ND

Notes:

*	= see Attachment 3 for compounds tested, methods, and laboratory reporting limits
**	= groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (November 2020)
^	= sample ID number preceded by "104675-" on the chain of custody form
mg/L	= milligrams per liter
<0.000250	= analyte not detected; laboratory limit of detection of 0.000250 mg/L
0.000202	= analyte detected
30.5	= reported concentration exceeds the applicable ADEC cleanup level
J	= reported concentration is an estimate below the limit of quantitation. See laboratory report for more details.
B	= Analyte concentration potentially affected by method blank contamination. See the ADEC Laboratory Data Review Checklist (LDRC) for details.
TOC	= top of casing
-	= not applicable or sample not analyzed

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level (mg/L)**	Sample ID Number^ and Water Depth in Feet Below TOC (See Table 1 and Figure 2)				
			Monitoring Wells				
			B13MW 8.67	B16MW 14.02	B17MW 11.54	B18MW 13.34	B28MW~ 13.34
Diesel Range Organics (DRO) - mg/L	AK 102	1.5	<0.577 B	<0.688 B	**10.6**	**5.27**	**5.57**
Volatile Organic Compounds (VOCs)							
Benzene - mg/L	EPA 8260D	0.0046	<0.000200	<0.000200	<0.000200	**0.000170 J**	**0.000157 J**
Toluene - mg/L	EPA 8260D	1.1	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Ethylbenzene - mg/L	EPA 8260D	0.015	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Xylenes - mg/L	EPA 8260D	0.190	<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	<0.000500	<0.000500
1,2-Dichloroethane - mg/L	EPA 8260D	0.002	<0.000250	<0.000250	<0.000250	<0.000250	<0.000250
Dichlorodifluoromethane - mg/L	EPA 8260D	0.200	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Isopropylbenzene (Cumene) - mg/L	EPA 8260D	0.450	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Naphthalene - mg/L	EPA 8260D	0.0017	<0.000500	<0.000500	<0.000500	**0.00706**	**0.00665**
n-Propylbenzene - mg/L	EPA 8260D	-	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
sec-Butylbenzene - mg/L	EPA 8260D	2.0	<0.000500	<0.000500	<0.000500	**0.000496 J**	**0.000489 J**
tert-Butylbenzene - mg/L	EPA 8260D	0.690	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Tetrachloroethene - mg/L	EPA 8260D	0.041	<0.000500	<0.000500	<0.000500	<0.000500	**0.000315 J**
Trichlorofluoromethane - mg/L	EPA 8260D	5.200	<0.000500	<0.000500	<0.000500	<0.000500	<0.000500
Other VOC analytes - mg/L	EPA 8260D	Various	ND	ND	ND	ND	ND

Notes:

*	= see Attachment 3 for compounds tested, methods, and laboratory reporting limits
**	= groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (November 2020)
^	= sample ID number preceded by "104675-" on the chain of custody form
mg/L	= milligrams per liter
<0.000250	= analyte not detected; laboratory limit of detection of 0.000250 mg/L
0.000170	= analyte detected
10.6	= reported concentration exceeds the applicable ADEC cleanup level
J	= reported concentration is an estimate below the limit of quantitation. See laboratory report for more details.
B	= Analyte concentration potentially affected by method blank contamination. See the ADEC Laboratory Data Review Checklist (LDRC) for details.
TOC	= top of casing
-	= not applicable or sample not analyzed

TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Parameter Tested	Method*	Cleanup Level (mg/L)**	Sample ID Number^ and Water Depth in Feet Below TOC (See Table 1 and Figure 2)			
			Monitoring Wells			Trip Blank
			B19MW 15.09	B20MW 9.76	B21MW 10.03	WTB -
Diesel Range Organics (DRO) - mg/L	AK 102	1.5	<0.588 B	<0.667 B	<0.641 B	-
Volatile Organic Compounds (VOCs)						
Benzene - mg/L	EPA 8260D	0.0046	<0.000200	<0.000200	<0.000200	<0.000200
Toluene - mg/L	EPA 8260D	1.1	<0.000500	<0.000500	<0.000500	<0.000500
Ethylbenzene - mg/L	EPA 8260D	0.015	<0.000500	<0.000500	<0.000500	<0.000500
Xylenes - mg/L	EPA 8260D	0.190	<0.00150	<0.00150	<0.00150	<0.00150
1,2,4-Trimethylbenzene - mg/L	EPA 8260D	0.056	<0.000500	<0.000500	<0.000500	<0.000500
1,2-Dichloroethane - mg/L	EPA 8260D	0.0017	<0.000250	<0.000250	<0.000250	<0.000250
Dichlorodifluoromethane - mg/L	EPA 8260D	0.200	<0.000500	<0.000500	<0.000500	<0.000500
Isopropylbenzene (Cumene) - mg/L	EPA 8260D	0.450	<0.000500	<0.000500	<0.000500	<0.000500
Naphthalene - mg/L	EPA 8260D	0.0017	<0.000500	<0.000500	<0.000500	<0.000500
n-Propylbenzene - mg/L	EPA 8260D	-	<0.000500	<0.000500	<0.000500	<0.000500
sec-Butylbenzene - mg/L	EPA 8260D	2.0	<0.000500	<0.000500	<0.000500	<0.000500
tert-Butylbenzene - mg/L	EPA 8260D	0.690	<0.000500	<0.000500	<0.000500	<0.000500
Tetrachloroethene - mg/L	EPA 8260D	0.041	<0.000500	<0.000500	<0.000500	<0.000500
Trichlorofluoromethane - mg/L	EPA 8260D	5.2	<0.000500	<0.000500	<0.000500	<0.000500
Other VOC analytes - mg/L	EPA 8260D	Various	ND	ND	ND	ND

Notes:

*	= see Attachment 3 for compounds tested, methods, and laboratory reporting limits
**	= groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (October 2018)
^	= sample ID number preceded by "104675-" on the chain of custody form
mg/L	= milligrams per liter
<0.000250	= analyte not detected; laboratory limit of detection of 0.000250 mg/L
B	= Analyte concentration potentially affected by method blank contamination. See the ADEC Laboratory Data Review Checklist (LDRC) for details.
TOC	= top of casing
-	= not applicable or sample not analyzed

TABLE 3
SUMMARY OF PFAS GROUNDWATER ANALYTICAL RESULTS

Parameter Tested	Method*	EPA LHA (ng/L)	Sample ID Number^ and Water Depth in Feet Below TOC (See Table 1 and Figure 2)			
			Monitoring Wells			
			B3MW 12.34	B7MW 16.75	B13MW 8.67	B20MW 9.76
Perfluorobutanoic acid - ng/L	EPA 537M	-	**80.1**	**15.1 J**	<8.0	**40.2**
Perfluoropentanoic acid - ng/L	EPA 537M	-	**229**	**34.6**	<4.0	**149**
Perfluorohexanoic acid - ng/L	EPA 537M	-	**289**	**27.8**	<4.0	**109**
Perfluoroheptanoic acid - ng/L	EPA 537M	-	**137**	**18.1**	<4.0	**26.9**
Perfluorononanoic acid - ng/L	EPA 537M	-	**19.0**	**4.8 J**	<4.0	**4.2 J**
Perfluorodecanoic acid - ng/L	EPA 537M	-	<4.0	**4.4 J**	<4.0	**2.0 J**
Perfluoroundecanoic acid - ng/L	EPA 537M	-	<4.0	<4.0	<4.0	<3.8
Perfluorododecanoic acid - ng/L	EPA 537M	-	<4.0	<4.0	<4.0	<3.8
Perfluorotridecanoic acid - ng/L	EPA 537M	-	<4.0	<4.0	<4.0	<3.8
Perfluorotetradecanoic acid - ng/L	EPA 537M	-	<4.0	<4.0	<4.0	<3.8 J
Perfluorobutanesulfonic acid - ng/L	EPA 537M	-	**319**	**2.5 J**	<4.0	**3.2 J**
Perfluoropentanesulfonic acid - ng/L	EPA 537M	-	**501**	**2.5 J**	<4.0	<3.8
Perfluorohexanesulfonic acid - ng/L	EPA 537M	-	**1,460**	**77.6**	**3.8 J**	**14.9**
Perfluoroheptanesulfonic acid - ng/L	EPA 537M	-	**29.9**	<4.0	<4.0	<3.8
Perfluorononanesulfonic acid - ng/L	EPA 537M	-	<4.0	<4.0	<4.0	<3.8
Perfluorodecanesulfonic acid - ng/L	EPA 537M	-	<4.0	<4.0	<4.0	<3.8
PFOSA - ng/L	EPA 537M	-	<20.0 J	<4.0	<4.0	<3.8
MeFOSAA - ng/L	EPA 537M	-	<8.0	<8.0	<8.0	<7.7
EtFOSAA - ng/L	EPA 537M	-	**5.5 J**	<8.0	<8.0	<7.7
4:2 Fluorotelomer sulfonate - ng/L	EPA 537M	-	<8.0	<8.0	<8.0	<7.7
6:2 Fluorotelomer sulfonate - ng/L	EPA 537M	-	<8.0	<8.0	<8.0	<7.7
8:2 Fluorotelomer sulfonate - ng/L	EPA 537M	-	<8.0	<8.0	<8.0	<7.7
Perfluorooctanesulfonic acid (PFOS) - ng/L	EPA 537M	0.070†	**78.4**	**26.1**	**3.5 J**	**16.3**
Perfluorooctanoic acid (PFOA) - ng/L	EPA 537M	0.070†	**170**	**109**	<4.0	**38.7**
LHA Combined (PFOS + PFOA) - ng/L	EPA 537M	0.070†	**248.4**	**135.1**	**3.5 J**	**55**

Notes:

EPA LHA	= Environmental Protection Agency Lifetime Health Advisory
†	= EPA LHA Level of 70 ng/L for PFOS and PFOA combined
*	= see Attachment 3 for laboratory reporting limits
^	= sample ID number preceded by "104675-" on the chain of custody form
ng/L	= nanograms per liter
<4.0	= analyte not detected; laboratory limit of detection of 4.0 ng/L
80.1	= analyte detected
248.4	= reported concentration exceeds the applicable EPA LHA
J	= reported concentration is an estimate below the limit of quantitation. See laboratory report for more details.
TOC	= top of casing
-	= not applicable

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Monitoring Well	Date	Depth to Water, ft	Parameter Tested* and Cleanup Level** in mg/L				
			DRO 1.5	Benzene 0.0046	Toluene 1.1	Ethylbenzene 0.015	Xylenes 0.19
B1MW	3/17/2004	21.19	**9.85**	**0.00246**	<0.00200	<0.00200	**0.00331**
	6/9/2004	22.06	**15.2**	**0.000748**	<0.00200	<0.00200	<0.00200
	5/18/2005	20.82	**9.88**	<0.00500	<0.0200	<0.0200	<0.0200
	10/6/2005	19.78	**4.35**	**0.00271**	<0.00200	<0.00200	<0.00200
	6/16/2006	21.25	**7.09**	**0.00208**	<0.00200	**0.00287**	<0.00200
	10/2/2006	20.83	**9.70**	**0.00202**	<0.00200	<0.00200	<0.00200
	8/19/2007	21.43	**6.76**	**0.00292**	<0.00200	<0.00200	<0.00200
	5/3/2016	19.23	**1.81**	**0.000550**	**0.000508 J**	<0.000500	<0.00150
	9/23/2020	20.02	**2.90**	**0.00202 J**	<0.000500	<0.000500	<0.00150
B2MW	3/19/2004	28.15	**19.9**	**0.155**	<0.00200	**0.00798**	**0.0111**
	6/9/2004	28.34	**32.3**	**0.229**	**0.00205**	**0.0518**	**0.0860**
	5/17/2005	28.12	**61.0**	**0.189**	<0.0200	**0.0322**	**0.0246**
	10/6/2005	26.84	**19.0**	**0.220**	<0.00200	**0.0351**	**0.0312**
	6/16/2006	28.50	**23.2**	**0.223**	<0.0200	**0.0398**	**0.0280**
	10/2/2006	27.55	**62.5**	**0.218**	<0.00200	**0.0439**	**0.0545**
	8/15/2007	28.01	**31.6**	**0.170**	<0.0200	**0.0393**	**0.0245**
	5/4/2016	27.22	**14.1**	**0.081**	**0.000690 J**	**0.0224**	**0.0134**
	9/23/2020	27.52	**30.5**	**0.0438**	<0.000500	**0.0119**	**0.0636**
B3MW	3/19/2004	14.72	**1.02**	<0.000500	<0.00200	<0.00200	<0.00200
	6/9/2004	14.81	**1.37**	<0.000500	<0.00200	<0.00200	<0.00200
	5/17/2005	13.39	**0.836**	<0.000500	<0.00200	<0.00200	<0.00200
	10/6/2005	10.20	**0.840**	<0.000500	<0.00200	<0.00200	<0.00200
	6/17/2006	13.20	**0.817**	<0.000500	<0.00200	<0.00200	<0.00200
	10/2/2006	11.00	**1.85**	<0.000500	<0.00200	<0.00200	<0.00200
	8/17/2007	12.89	**0.942**	<0.000500	<0.00200	<0.00200	<0.00200
	5/4/2016	12.30	**0.599**	<0.000250	<0.000500	<0.000500	<0.00150
	9/23/2020	12.34	**1.24 B**	<0.000200	<0.000500	<0.000500	<0.00150
B6MW	3/20/2004	14.03	**0.569**	<0.000500	<0.00200	<0.00200	<0.00200
	6/9/2004	13.43	**0.471**	<0.000500	<0.00200	<0.00200	<0.00200
	5/17/2005	11.97	**0.380**	<0.000500	<0.00200	<0.00200	<0.00200
	10/6/2005	8.02	<0.330	<0.000500	<0.00200	<0.00200	<0.00200
	6/16/2006	11.69	**2.22**	<0.000500	<0.00200	<0.00200	<0.00200
	10/2/2006	9.30	<0.312	<0.000500	<0.00200	<0.00200	<0.00200
	8/17/2007	11.42	<0.300	<0.000500	<0.00200	<0.00200	<0.00200
	5/3/2016	8.87	**0.205 J**	<0.000250	<0.000500	<0.000500	<0.00150
	9/22/2020	Could not sample due to vehicle parked over well					
B7MW	6/16/2006	17.25	**6.43**	**0.00201**	<0.00200	<0.00200	**0.00807**
	10/2/2006	16.53	**19.5**	**0.00132**	<0.00200	<0.00200	**0.00417**
	8/15/2007	17.60	**9.24**	**0.000505**	<0.00200	<0.00200	<0.00200
	5/3/2016	16.40	**10**	**0.000270 J**	<0.000500	0.000780 J	<0.00150
	9/23/2020	16.75	**1.27 B**	<0.000200	<0.000500	<0.000500	<0.00150

Notes:

*	= Higher result of field duplicate samples is listed
**	= groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (November 2020)
DRO	= diesel range organics
ft	= feet
mg/L	= milligrams per liter
<0.00200	= analyte not detected; laboratory limit of detection of 0.00200 mg/L
1.02	= analyte detected
9.85	= Concentration exceeds ADEC cleanup level
J	= Analyte detected at an estimated concentration less than the limit of quantitation

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Monitoring Well	Date	Depth to Water, ft	Parameter Tested* and Cleanup Level** in mg/L				
			DRO 1.5	Benzene 0.0046	Toluene 1.1	Ethylbenzene 0.015	Xylenes 0.19
B8MW	6/16/2006	16.70	**5.66**	<0.000500	<0.00200	<0.00200	<0.00200
	10/2/2006	Could not locate					
	5/4/2016	Could not locate					
	9/22/2020	Could not locate					
B10MW	6/16/2006	16.79	**21.0**	**0.0186**	<0.00200	**0.00749**	**0.00511**
	10/2/2006	15.33	**30.2**	**0.0116**	<0.00200	**0.0335**	**0.00273**
	5/4/2016	15.6	Product in well.	Did not sample			
	9/22/2020	16.21	Product in well.	Did not sample			
B11MW	6/16/2006	13.29	**1.10**	**0.0275**	<0.00200	**0.00936**	**0.00755**
	10/2/2006	11.60	**4.71**	**0.00536**	<0.00200	**0.0798**	**0.0628**
	5/4/2016	12.71	Product in well.	Did not sample			
	9/22/2020	13.60	Product in well.	Did not sample			
B12MW	8/18/2007	9.63	<0.300	<0.000500	<0.00200	<0.00200	<0.00200
	8/18/2011	9.26	<0.376	<0.000300	<0.000620	<0.000620	<0.00186
	6/12/2014	10.41	<0.625 B	<0.000250	<0.000500	<0.000500	<0.00150
	5/2/2016	8.28	**0.205 J**	<0.000250	<0.000500	<0.000500	<0.00150
	9/22/2020	8.58	<0.571 B	<0.000200	<0.000500	<0.000500	<0.00150
B13MW	8/18/2007	9.11	<0.317	<0.000500	<0.00200	<0.00200	<0.00200
	8/18/2011	7.65	**0.639**	<0.000300	<0.000620	<0.000620	<0.00186
	6/12/2014	8.85	<0.612 B	<0.000250	<0.000500	<0.000500	<0.00150
	5/2/2016	7.71	**0.330 J**	<0.000250	<0.000500	<0.000500	<0.00150
	9/22/2020	8.67	**<0.577 B**	<0.000200	<0.000500	<0.000500	<0.00150
	9/22/2020	8.67	<0.577 B	<0.000200	<0.000500	<0.000500	<0.00150
B14MW	8/18/2007	10.84	**1.58**	<0.000500	<0.00200	<0.00200	<0.00200
	6/19/2009	12.05	<0.800	<0.000500	<0.00200	<0.00200	<0.00200
	8/19/2011	9.33	**0.743**	<0.000300	<0.000620	<0.000620	<0.00186
	6/12/2014	11.12	<1.01 B	<0.000250	<0.000500	<0.000500	<0.00150
	9/22/2020	Could not locate					
B15MW	8/18/2007	11.31	**0.351**	<0.000500	<0.00200	<0.00200	<0.00200
	6/18/2009	11.04	<0.800	<0.000500	<0.00200	<0.00200	<0.00200
	8/18/2011	10.59	**0.477 J**	<0.000300	<0.000620	<0.000620	<0.00186
	6/12/2014	11.00	<0.612 B	<0.000250	<0.000500	<0.000500	<0.00150
	5/2/2016	9.41	**0.197 J**	<0.000250	<0.000500	<0.000500	<0.00150
	9/22/2020	Could not locate					

Notes:

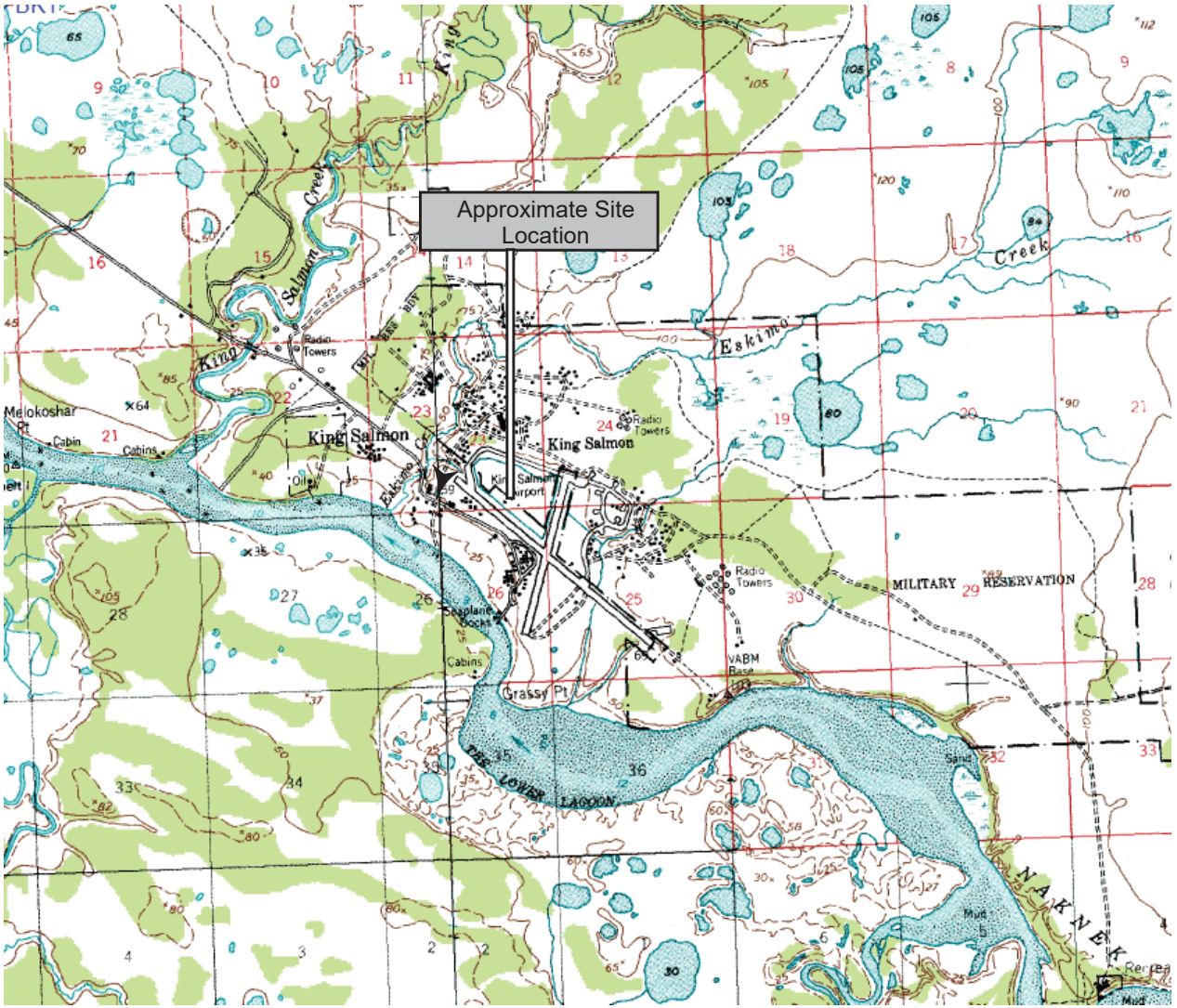
*	= Higher result of field duplicate samples is listed
**	= groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (November 2020)
DRO	= diesel range organics
ft	= feet
mg/L	= milligrams per liter
<0.00200	= analyte not detected; laboratory limit of detection of 0.00200 mg/L
0.351	= analyte detected
1.58	= Concentration exceeds ADEC cleanup level
J	= Analyte detected at an estimated concentration less than the limit of quantitation
B	= Analyte concentration potentially affected by method blank contamination.
-	= not tested for this analyte

TABLE 4
HISTORICAL GROUNDWATER ANALYTICAL RESULTS

Monitoring Well	Date	Depth to Water, ft	Parameter Tested* and Cleanup Level** in mg/L				
			DRO 1.5	Benzene 0.0046	Toluene 1.1	Ethylbenzene 0.015	Xylenes 0.19
B16MW	8/19/2007	14.51	**0.484**	<0.000500	<0.00200	<0.00200	<0.00200
	6/18/2009	14.88	<0.800	<0.000500	<0.00200	<0.00200	<0.00200
	8/18/2011	13.64	-	-	-	-	-
	6/13/2014	14.05	<0.310	<0.000250	<0.000500	<0.000500	<0.00150
	5/2/2016	13.5	**0.538 J**	<0.000250	<0.000500	<0.000500	<0.00150
	9/22/2020	14.02	<0.688 B	<0.000200	<0.000500	<0.000500	<0.00150
B17MW	8/19/2007	11.54	**1.00**	<0.000500	<0.00200	<0.00200	<0.00200
	6/18/2009	12.69	**2.89**	<0.000500	<0.00200	<0.00200	<0.00200
	8/19/2011	10.18	**0.585 J**	<0.000300	<0.000620	<0.000620	<0.00186
	6/13/2014	11.35	**1.36**	<0.000250	<0.000500	<0.000500	<0.00150
	5/3/2016	10.35	**2.37**	<0.000250	<0.000500	<0.000500	<0.00150
	9/22/2020	11.54	**10.6**	<0.000200	<0.000500	<0.000500	<0.00150
B18MW	8/19/2007	14.01	**12.8**	**0.0103**	<0.00200	<0.00200	**0.00419**
	6/19/2009	15.02	**13.8**	**0.00526**	<0.00200	<0.00200	<0.00200
	8/19/2011	13.12	**11.9**	**0.00252**	<0.000620	**0.000840 J**	**0.00164 J**
	6/13/2014	13.55	**14.9**	**0.00116**	**0.000340 J**	**0.000510 J**	**0.00106 J**
	5/3/2016	12.83	**1.66**	<0.000250	<0.000500	<0.000500	<0.00150
	9/23/2020*	13.34	**5.57**	**0.000170 J**	<0.000500	<0.000500	<0.00150
B19MW	6/19/2009	17.90	<0.833	<0.000500	<0.00200	<0.00200	<0.00200
	8/18/2011	13.47	**0.237 J**	<0.000300	<0.000620	<0.000620	<0.00186
	6/13/2014	16.85	<0.313	<0.000250	<0.000500	<0.000500	<0.00150
	5/3/2016	Could not sample due to vehicle over well					
	9/22/2020	15.09	<0.588 B	<0.000200	<0.000500	<0.000500	<0.00150
B20MW	6/19/2009	17.30	<0.800	<0.000500	<0.00200	<0.00200	<0.00200
	8/18/2011	9.80	**0.219 J**	<0.000300	<0.000620	<0.000620	<0.00186
	6/13/2014	13.98	**0.412 J**	<0.000250	<0.000500	<0.000500	<0.00150
	5/2/2016	11.10	**0.358 J**	<0.000250	<0.000500	<0.000500	<0.00150
	9/22/2020	9.76	<0.667 B	<0.000200	<0.000500	<0.000500	<0.00150
B21MW	6/20/2009	11.35	<0.769	<0.000500	<0.00200	<0.00200	<0.00200
	8/18/2011	7.92	**0.302 J**	<0.000300	<0.000620	<0.000620	<0.00186
	6/12/2014	10.33	<0.390	<0.000250	**0.000350 J**	<0.000500	<0.00150
	5/2/2016	8.22	0.242 J	<0.000250	**<0.000500**	<0.000500	<0.00150
	9/22/2020	10.03	<0.641 B	<0.000200	<0.000500	<0.000500	<0.00150

Notes:

*	= Higher result of field duplicate samples is listed
**	= groundwater cleanup levels are listed in Table C, 18 AAC 75.345 (November 2020)
DRO	= diesel range organics
ft	= feet
mg/L	= milligrams per liter
<0.00200	= analyte not detected; laboratory limit of detection of 0.00200 mg/L
0.00252	= analyte detected
12.8	= Concentration exceeds ADEC cleanup level
J	= Analyte detected at an estimated concentration less than the limit of quantitation
-	= not tested for this analyte



0 1 2

APPROXIMATE SCALE IN MILES

Taken from Naknek C-2 and C-3
U.S. Geological Survey Quadrangles
50 Foot Contour Interval

N

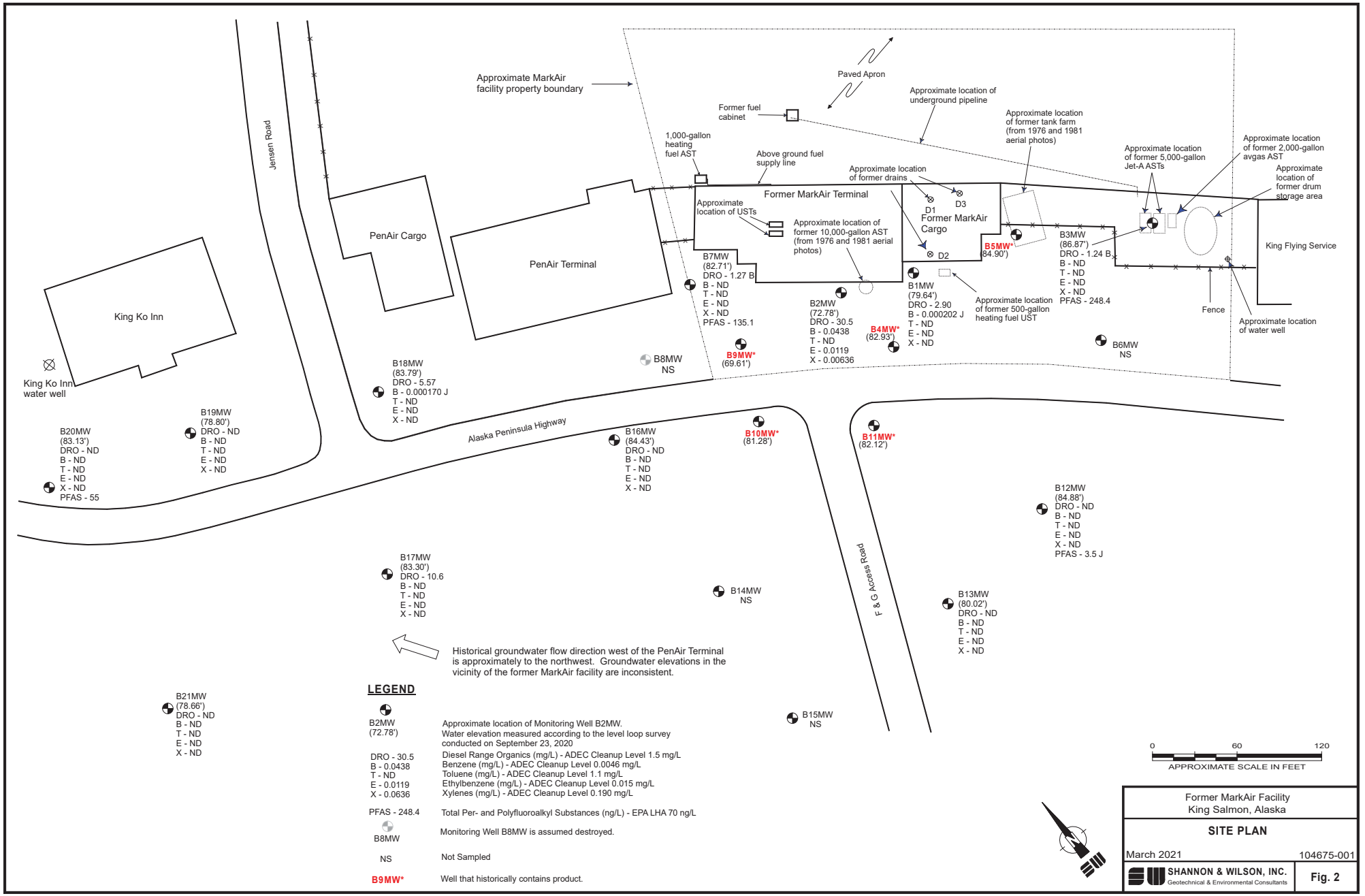
Former MarkAir Facility
King Salmon, Alaska

VICINITY MAP

March 2021 104675-001

SHANNON & WILSON, INC.
Geotechnical & Environmental Consultants

Fig. 1



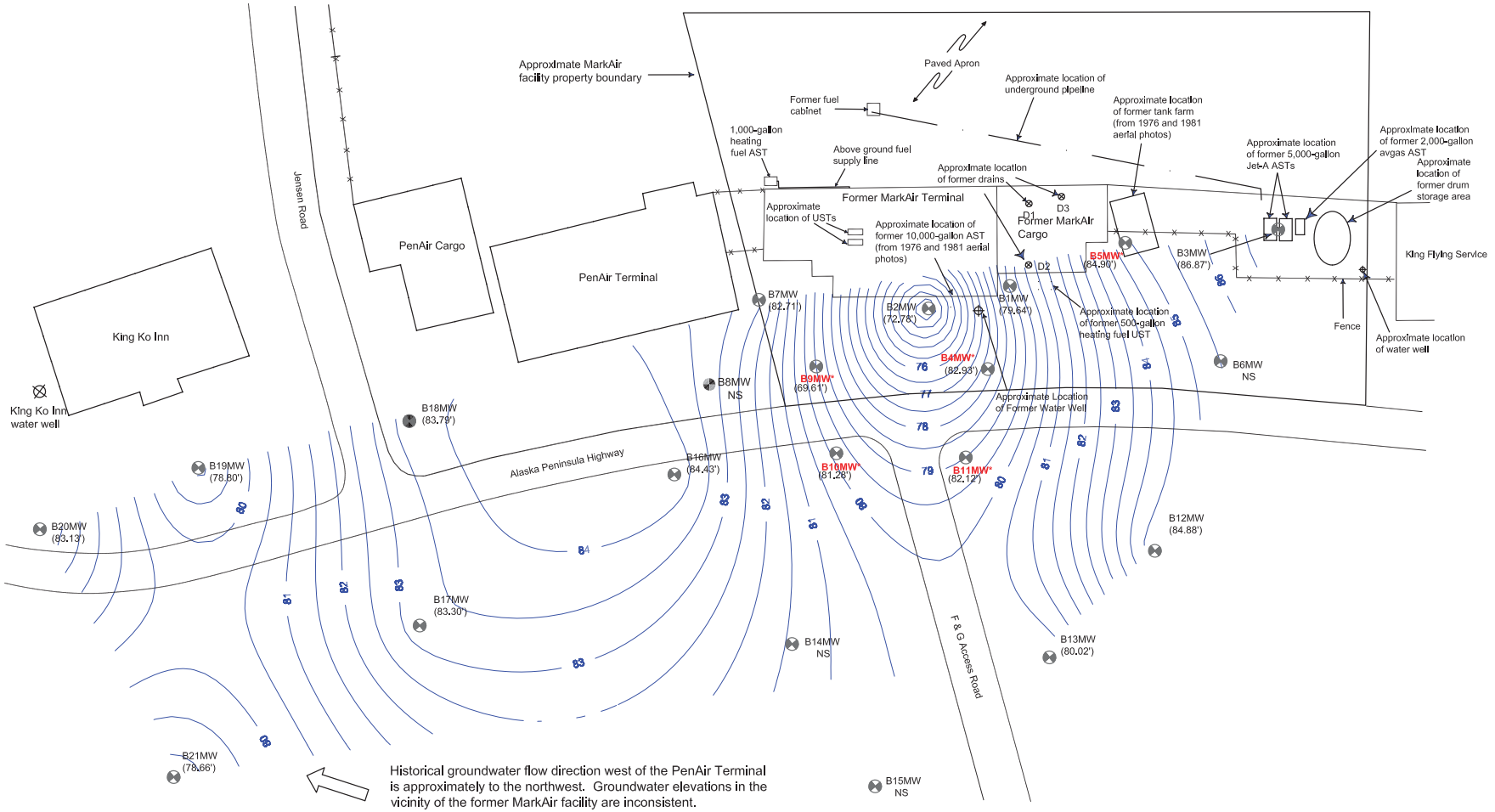
Former MarkAir Facility
King Salmon, Alaska

SITE PLAN

March 2021 104675-001

SHANNON & WILSON, INC. Geotechnical & Environmental Consultants

Fig. 2



LEGEND

- B2MW (72.78') — Approximate location of Monitoring Well B2MW. Water elevation measured according to the level loop survey conducted on September 23, 2020
- B8MW — Monitoring Well B8MW is assumed destroyed.
- B9MW* — Well that historically contains product.
- 83 — Groundwater elevation contour line

Former MarkAir Facility
King Salmon, Alaska

GROUNDWATER CONTOURS

March 2021 104675-001

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

FIG. 3

ATTACHMENT 1

FIELD NOTES

9/21/20 King Salmon - MarkAir AJR / ZJT

0945 Arrive at Anchorage Airport
1100 Depart Anchorage for King Salmon
1215 Arrive in King Salmon → Await baggage + get rental car
1240 Arrive @ King Salmon ground to get Air cargo. No one is there → will check back later. Head to get rooms @ King Salmon Lodge
1330 Depart King Salmon Lodge for King Salmon ground. ~~No one~~ No one is there → turns out they are closed today. for a moose hunt. Head to site to find wells.
1430 Having issues finding some wells → head to to borrow Shishstadt/metal detector. from King Salmon Wastewater.
1800 Could not find B19MW, B21MW, B14MW, B15MW. Will try again with Swing Hrs in moving when equipment arrives. A truck is parked on B16MW. and has not moved all day (in long term parking). Head to Lodge
1830 End of Day

Scale: 1 square = _____

Rite in the Rain

9/22/20 King Salmon - MarkAir AJK / ZJT

0700 Depart Lodge to get cargo from King Salmon Ground.
0745 Get cargo → head to site to get/find remaining wells
0915 Found B19mw + ~~B20mw~~ B21mw. Could not locate B17mw and B15mw.
0920 Begin collecting DTW/DTP/DTB in all wells that were located
1254 Finish collect gw data
1330 Calibrate Horiba + YSI
1350 @ B12mw (ZJT)
1440 @ B13mw (AJK)
1445 Finish @ B12mw
1500 @ B16mw (ZJT)
1550 Finish @ B13mw
1600 ~~@ B20mw (AJK)~~ Finish @ B16mw
1603 @ B20mw (AJK)
1605 @ B19mw (ZJT)
1702 Finish @ B20mw
1710 Finish @ B19mw
1730 @ B17mw (ZJT) and B21mw (AJK)
1815 Finish @ B17mw
1855 Finish @ B21mw
1935 Finish @ site → clean up → head back to Lodge
~~AK~~ 1951 End of day → Finish sample management
2000

Scale: 1 square = _____

9/24/20 King Salmon - MarkAir AJK/ZJT.

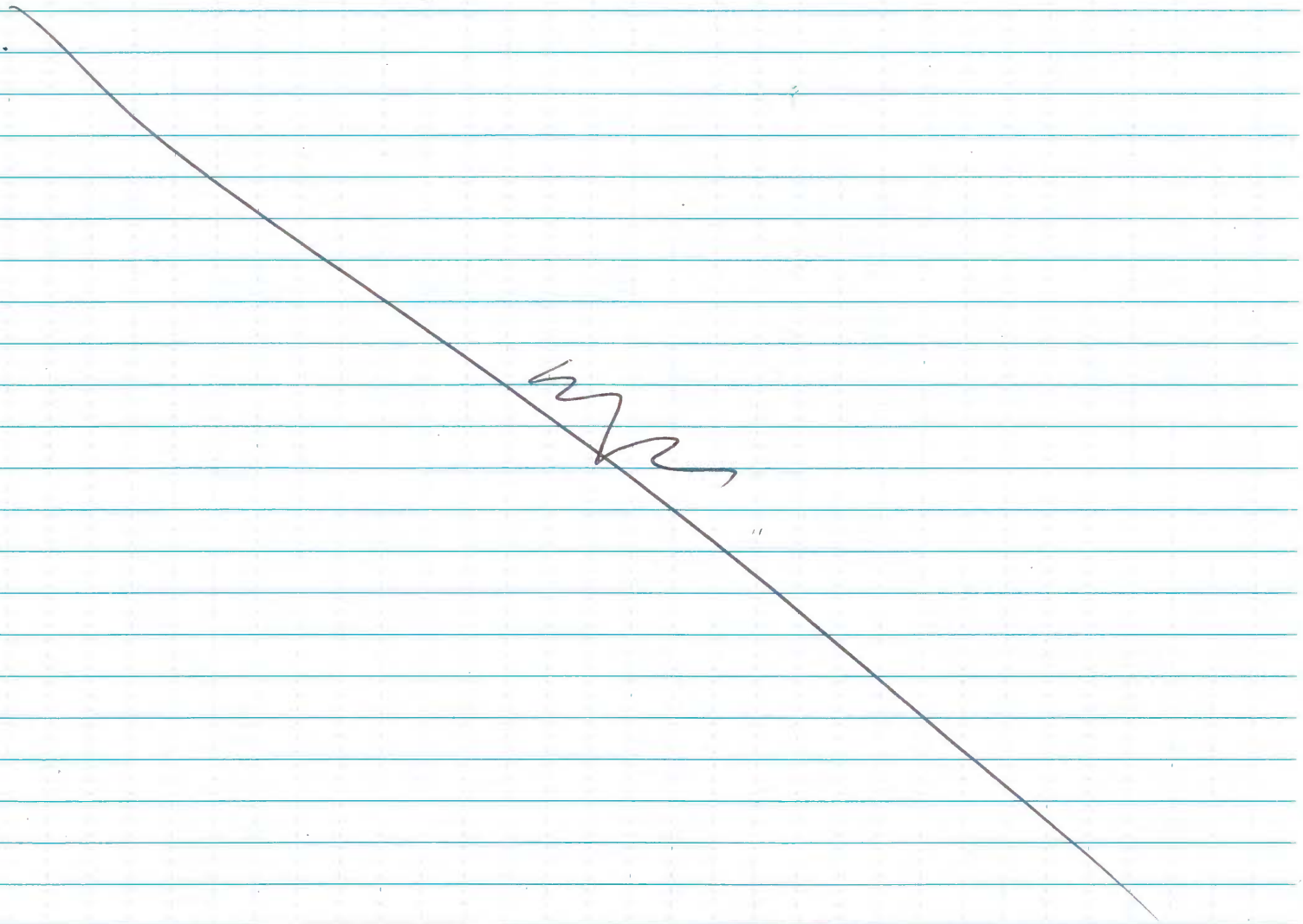
	Monitoring Well	DTP	DTW	DTB	
0920	B3MW	—	12.34	21.84	
0936	B12MW	—	8.58	19.45	
0944	B13MW	—	8.67	14.98	
0954	B16MW	—	14.02	20.04	
1008	B19MW	—	15.09	20.22	
1018	B20MW	—	9.76	19.98	
1026	B21MW	—	10.03	14.91	
~	B6MW	car parked over well			
~	B14MW	unable to locate			
1044	B17MW	—	11.54	19.08	
1115	B1MW	—	20.02	31.22	
1107	B2MW	—	27.52	31.51	
1100	B7MW	—	16.75	19.68	
1205	B10MW	16.02	16.21	24.24	
1200	B11MW	13.46	13.60	24.95	
1123	B18MW		13.34	20.10	
	~~B1MW~~		~~20.02~~	~~31.22~~	MK
1133	B4MW	15.81	15.99	25.68	
~~1254~~ 1127 MK	~~B5MW~~ B5MW.	14.50 —	MK ~~DRY~~ 14.57	MK ~~13.70~~	24.35
1150	B9MW	25.46	30.00	31.80	
~	B15MW	unable to locate			

Scale: 1 square = _____

Rite in the Rain

9/23/20 King Salmon - Mark Air AJK/ZJT

0800 ARRp for sampling
0830 Arrive onsite → Contact Alaska air for access to B3MW.
0900 Calibrate YSI + Horiba, @ B3MW (AJK)
0920 @ B1MW (ZJT)
1015 Finish @ B3MW
1020 Finish @ B1MW
1030 @ B7MW (AJK) and B2MW (ZJT)
1120 Finish @ B7MW
1135 Finish @ B2MW
1315 @ B18MW (ZJT)
1445 Finish @ B18MW. Collected Dup. Sample B2MW
1500 Begin Surveying wells
1900 Finish surveying wells
1915 Depart site for lodge for sample management + Notes.
2200 End of day



8/24/20 King Salmon - MarkAir AAR/ZST

0730 prep for departure → pack field equipment to take to ace air cargo.

0930 Drop equipment off at Ace. Head to S.K to do final walk through.

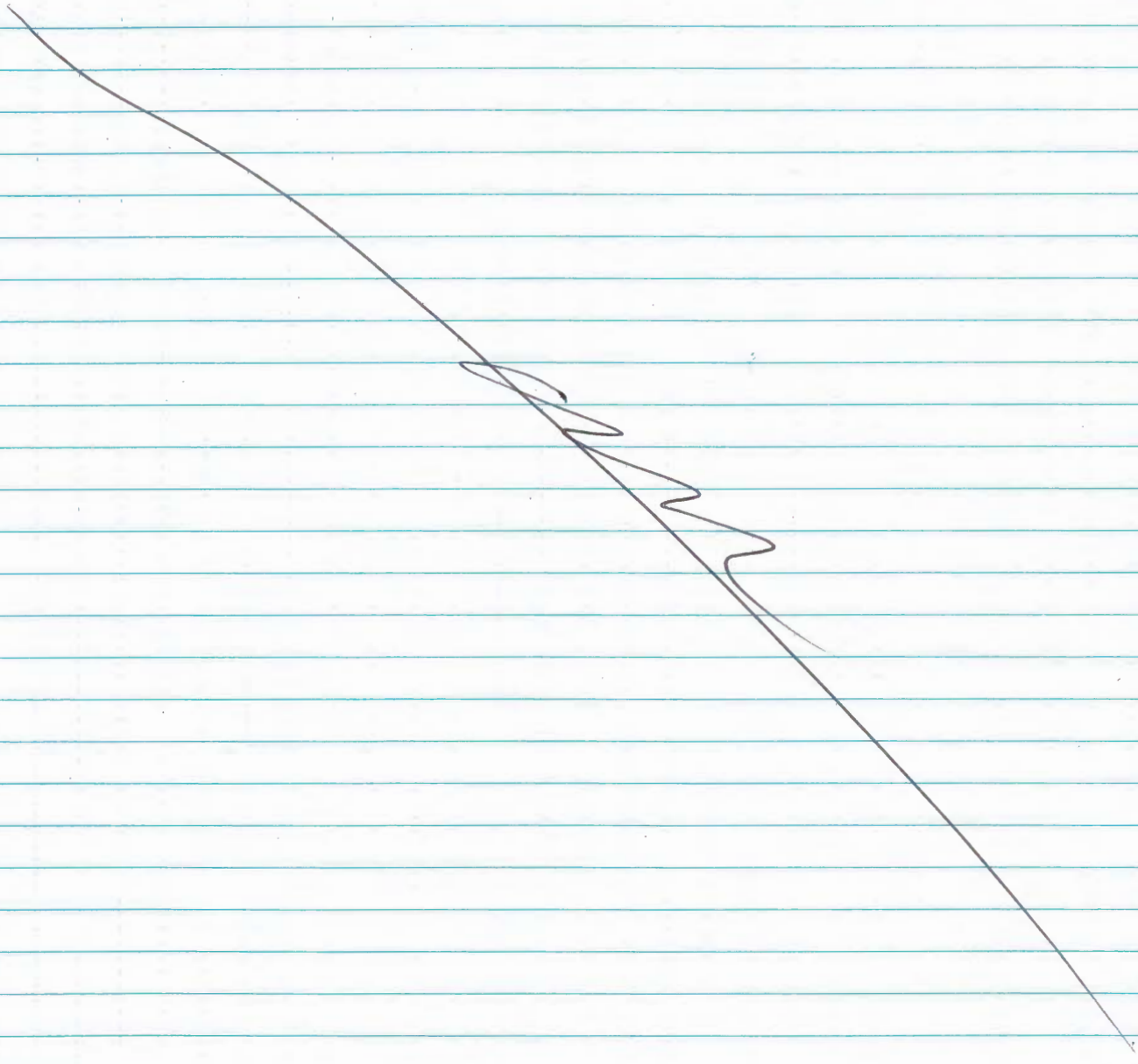
1200 Drop rental car off after refueling.

1300 Depart King Salmon for Anchorage

1530 Arrive in Anchorage, go to Ace to get equipment for demob.

1800 Demob @ office

1700 End of day



Scale: 1 square = _____

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 104675 Location: King Salmon Weather: 39° cloudy
Well No.: B1MW
Date: 9/23/20 Time Started: 9:20 Time Completed: 10:20
Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 11:15 Date of Depth Measurement: 9/22/20
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: 31.22 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 20.02
Water Column in Well: 11.20 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: ~~1.8~~ 1.79 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 9/23/20 Time Started: 9:27 Time Completed: 10:15
Three Well Volumes: 5.4 (Gallons in Well x 3)
Gallons Purged: 0.7 Depth of Pump (generally 2 ft from bottom): 22.0'
Max. Drawdown (generally 0.3 ft): 1.87 Pump Rate: 0.1
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)
9:32	0.1	0.1	21.53	1.51	9.10	421	1.10	6.44	57.8	9.00
9:37	0.2	0.1	21.85	1.83	9.39	422	1.03	6.50	55.3	8.37
9:42	0.3	0.1	21.79	1.77	9.90	415	0.96	6.59	51.6	9.72
9:47	0.4	0.1	21.78	1.76	10.31	414	1.02	6.65	47.5	9.43
9:52	0.5	0.1	21.89	1.87	10.54	413	1.17	6.69	45.0	8.85
9:55	0.55	0.1	21.88	1.86	10.71	414	1.25	6.69	45.2	8.04

SAMPLING DATA

Odor: None Color: Clear
Sample Designation: 104675-B1MW Time / Date: 10:05 9/23/20
QC Sample Designation: / Time / Date: /
QA Sample Designation: / Time / Date: /

Evacuation Method: Submersible Pump / Other: Double Whale
Sampling Method: Submersible Pump / Other: Double Whale

Water Quality Instruments Used/Manufacturer/Model Number YSI + Turbidimeter

Calibration Info (Time, Ranges, etc) 9:00 9/23/20

Remarks: —

Sampling Personnel: ZJT

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 104675 Location: King Salmon Site: Mark Air
Well No.: B1MW
Date: 9/23/20

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)
9:58	.60	0.1	21.80	1.78	10.84	414	1.31	6.70	44.1	7.68
10:01	.65	0.1	21.84	1.82	10.95	414	1.31	6.70	44.3	8.63
10:04	.70	0.1	21.82	1.80	10.98	415	1.35	6.70	43.6	6.99

	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: 104675 Location: King Salmon Weather: 40° cloudy w/ rain
Well No.: BZMW
Date: 9/23/20 Time Started: 10:30 Time Completed: 11:35
Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 11:07 Date of Depth Measurement: 9/22/20
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: 31.51 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 27.52
Water Column in Well: 3.99 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 0.64 ~~0.63~~ AR (Water Column in Well x Gallons per foot)

BM: 27.4

PURGING DATA

Date Purged: 9/23/20 Time Started: 10:41 Time Completed: 11:25
Three Well Volumes: 1.89 (Gallons in Well x 3)
Gallons Purged: 0.65 Depth of Pump (generally 2 ft from bottom): 29.5
Max. Drawdown (generally 0.3 ft): 0.14 Pump Rate: 0.1 L/min
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)
10:46	0.1	0.1	27.54	0.14	8.33	1281	6.8	6.50	53.3	142.05
10:51	0.2	0.1	27.51	0.11	8.64	1285	5.81	6.59	47.7	170.8
10:56	0.3	0.1	27.52	0.12	8.76	1286	5.05	6.67	44.0	161.6
11:01	0.4	0.1	27.52	0.12	9.26	1286	4.18	6.74	41.3	114.1
11:04	0.45	0.1	27.52	0.12	9.47	1284	3.93	6.76	41.5	85.16
11:07	0.50	0.1	27.52	0.12	9.69	1282	3.64	6.78	39.6	71.69

SAMPLING DATA

Odor: Hydrocarbon Color: Clear w/ grey tint
Sample Designation: 104675-BZMW Time / Date: 11:15 9/23/20
QC Sample Designation: / Time / Date: _____
QA Sample Designation: _____ Time / Date: /

Evacuation Method: Submersible Pump / Other: Double Whale
Sampling Method: Submersible Pump / Other: Double Whale
Water Quality Instruments Used/Manufacturer/Model Number YSI + Turbidimeter
Calibration Info (Time, Ranges, etc) 9:00 9/23/20
Remarks: —

Sampling Personnel: ZJT

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 104675 Location: King Salmon Site: Mark Air
Well No.: B2MW
Date: 9/23/20

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)
11:10	0.55	0.1	27.51	0.11	9.83 ✓	1281 ✓	3.49	6.80 ✓	41.6	64.40 ✓
11:13	0.60	0.1	27.51	0.11	9.93 ✓	1281 ✓	3.33	6.80 ✓	40.8	52.93 ✓
11:16	0.65	0.1	27.51	0.11	9.98 ✓	1281 ✓	3.33	6.80 ✓	39.5	50.80 ✓

	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: 104675 Location: King Salmon Weather: 39° cloudy w/ rain

Well No.: B3mw

Date: 9/23/20 Time Started: 0900 Time Completed: 1015

Develop Date: ~ Develop End Time: ~ (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 0920 Date of Depth Measurement: 9/22/20

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: 21.84 Product Thickness, if noted: ~

Depth-to-Water (DTW) Below MP: 12.34

Water Column in Well: 9.5 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 1.52 (Water Column in Well x Gallons per foot)

PURGING DATA

Benchmark 12.24

Date Purged: 9/23/20 Time Started: 0915 Time Completed: 956

Three Well Volumes: 456 (Gallons in Well x 3)

Gallons Purged: 0.90 Depth of Pump (generally 2 ft from bottom): ~14

Max. Drawdown (generally 0.3 ft): 0.14 Pump Rate: 0.1

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)
0925	0.3	0.1	12.38	0.14	10.64	225	1.81	5.26	290	7.47
0930	0.45	0.1	12.38	0.14	10.44	223	1.69	5.27	291	5.38
0935	0.60	0.1	12.38	0.14	10.12	221	1.67	5.27	292	4.57
0938	0.75	0.1	12.38	0.14	9.98	220	1.70	5.25	292	3.85
0941	0.80	0.1	12.38	0.14	9.81	219	1.72	5.25	293	3.07
0944	0.90	0.1	12.38	0.14	9.86	220	1.73	5.26	290	2.65

SAMPLING DATA

Odor: None Color: Clear

Sample Designation: 104675-B3MW Time / Date: 9/23/20 950

QC Sample Designation: ~ Time / Date: ~

QA Sample Designation: ~ Time / Date: ~

Evacuation Method: Submersible Pump / Other: Double Whale

Sampling Method: Submersible Pump / Other: Double Whale

Water Quality Instruments Used/Manufacturer/Model Number Horiba + MicroTPW

Calibration Info (Time, Ranges, etc) @ 0900 on 9/23/20

Remarks: _____

Sampling Personnel: AJK

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 104675 Location: King Salmon Weather: 39° cloudy w/ rain

Well No.: B7MW

Date: 9/23/20 Time Started: 1030 Time Completed: 1120

Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 1100 Date of Depth Measurement: 9/22/20

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: 19.68 Product Thickness, if noted: —

Depth-to-Water (DTW) Below MP: 16.75

Water Column in Well: 2.93 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 0.47 (Water Column in Well x Gallons per foot)

Benchmark - 16.68

PURGING DATA

Date Purged: _____ Time Started: 10:37 Time Completed: 1108

Three Well Volumes: 1.41 (Gallons in Well x 3)

Gallons Purged: 0.6 Depth of Pump (generally 2 ft from bottom): ~18

Max. Drawdown (generally 0.3 ft): 0.57 Pump Rate: 0.1

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)
1047	0.3	0.1	17.23	0.55	8.53	189	5.08	5.96	21	5.48
1050	0.4	0.1	17.24	0.56	8.61	189	4.47	5.96	19	6.87
1053	0.5	0.1	17.24	0.56	8.64	190	4.18	5.95	19	6.53
1056	0.6	0.1	17.25	0.57	8.71	191	4.05	5.96	18	8.14

SAMPLING DATA

Odor: None Color: clear

Sample Designation: 104675 - B7MW Time / Date: 1100 9/23/20

QC Sample Designation: — Time / Date: —

QA Sample Designation: — Time / Date: —

Evacuation Method: ~~Submersible Pump~~ / Other: Double Wall

Sampling Method: Submersible Pump / Other: Double Wall

Water Quality Instruments Used/Manufacturer/Model Number Horiba + Mini TROLL

Calibration Info (Time, Ranges, etc) @ 0900 on 9/23/20

Remarks: _____

Sampling Personnel: AJR

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 104675 Location: King Salmon Weather: 51° partly cloudy
Well No.: B12MW
Date: 9/22/20 Time Started: 850 Time Completed: 14:45
Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 9:36 Date of Depth Measurement: 9/21/20
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: ZJT ~~[illegible]~~ 19.45 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 8.58
Water Column in Well: 10.87 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 1.73 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 9/22/20 Time Started: 13:54 Time Completed: 14:36
Three Well Volumes: 5.21 (Gallons in Well x 3)
Gallons Purged: 0.85 Depth of Pump (generally 2 ft from bottom): 10.5'
Max. Drawdown (generally 0.3 ft): 0.04 Pump Rate: 0.1 L/min
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)
14:00	0.1	0.1	8.62	0.04	11.41	130	7.34	5.12	262	21.59
14:05	0.25	0.1	8.56	+ 0.02	10.82	119	7.73	5.10	279	21.72
14:10	0.4	0.1	8.60	0.02	10.57	112	8.00	5.29	284	18.38
14:15	0.65	0.1	8.59	0.01	10.55	109	7.72	5.22	292	11.41
14:18	0.75	0.1	8.60	0.02	10.52	107	7.41	5.17	299	9.19
14:21	0.85	0.1	8.60	0.02	10.56	106	7.66	5.18	300	7.50

SAMPLING DATA

Odor: None Color: Clear
Sample Designation: 104675-B12MW Time / Date: 14:30 9/22/20
QC Sample Designation: — Time / Date: —
QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: Double Whale
Sampling Method: Submersible Pump / Other: Double Whale
Water Quality Instruments Used/Manufacturer/Model Number Horiba + Turbidimeter
Calibration Info (Time, Ranges, etc) 1:30 9/22/20
Remarks: —

Sampling Personnel: ZJT

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 104675 Location: King Salmon Site: Mark Air

Well No.: B12 MW

Date: 9/22/20

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)
14:24	0.95	0.1	8.60	0.02	10.58	104.0	7.79	5.18	301	

	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 1ay 2010)	3 to 5	100 to 150	<0.0328	±3% or ±0.2	±3%	±10%	±0.1	±10	±10%
EPA an. 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: 104675 Location: King Salmon Weather: 55°, Cloudy

Well No.: B13MW

Date: 9/22/20 Time Started: 1440 Time Completed: 1550

Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 0944 Date of Depth Measurement: 9/22/20

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: 14.98 Product Thickness, if noted: —

Depth-to-Water (DTW) Below MP: 8.67

Water Column in Well: 6.31 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16 ~~1.07~~ MR

Gallons in Well: 1.01 (Water Column in Well x Gallons per foot)

Benchmark - 8.65

PURGING DATA

Date Purged: 9/22/20 Time Started: 1452 Time Completed: 1534

Three Well Volumes: 3.03 (Gallons in Well x 3)

Gallons Purged: 0.90 Depth of Pump (generally 2 ft from bottom): ~11

Max. Drawdown (generally 0.3 ft): 0.5 Pump Rate: 0.1

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)
1502	0.3	0.1	9.15	~~9~~ 0.5	8.56	171	9.59	5.43	52.0	17.98
1507	0.45	0.1	9.15	0.5	8.70	171	9.67	5.69	40.0	12.19
1512	0.60	0.1	9.15	0.5	9.14	171	9.35	5.85	33.1	10.06
1515	0.70	0.1	9.15	0.5	9.38	171	9.16	5.89	31.2	9.82
1518	0.80	0.1	9.15	0.5	9.41	171	8.98	5.91	29.7	9.06
1521	0.90	0.1	9.15	0.5	9.44	172	8.97	5.91	28.3	8.13

SAMPLING DATA

Odor: None Color: ~~IS~~ clear

Sample Designation: 104675 - B13MW Time / Date: 1525 9/22/20

QC Sample Designation: — Time / Date: —

QA Sample Designation: — Time / Date: —

Evacuation Method: ~~Submersible Pump~~ / Other: Double whale

Sampling Method: ~~Submersible Pump~~ / Other: Double whale

Water Quality Instruments Used/Manufacturer/Model Number YSI + Micro Turbidity (TPW)

Calibration Info (Time, Ranges, etc) 1330 on 9/22/20

Remarks:

Sampling Personnel: AJR

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 104675 Location: King Salmon Weather: 53° partly cloudy
Well No.: B16MW
Date: 9/22/20 Time Started: 15:00 Time Completed: 16:00
Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 09:54 Date of Depth Measurement: 9/21/20
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: 20.04 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 14.02
Water Column in Well: 6.02 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 0.96 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 9/22/20 Time Started: 15:08 Time Completed: 15:50
Three Well Volumes: 2.89 (Gallons in Well x 3)
Gallons Purged: 0.55 Depth of Pump (generally 2 ft from bottom): 16.0'
Max. Drawdown (generally 0.3 ft): 0.39 Pump Rate: 0.1 L/min
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)
15:13	0.1	0.1	14.20	0.18	10.41	185	5.81	4.81	319	19.49
15:18	0.2	0.1	14.30	0.28	10.70	187	5.17	4.78	318	19.62
15:23	0.3	0.1	14.34	0.32	10.94	189	4.89	4.77	318	23.05
15:26	0.35	0.1	14.38	0.34	11.22	190	4.83	4.78	318	19.14
15:29	0.4	0.1	14.39	0.35	11.34	191	4.72	4.79	318	19.68
15:32	0.45	0.1	14.40	0.36	11.57 ✓	192 ✓	4.66	4.84 ✓	318	13.21 ✓

SAMPLING DATA

Odor: None Color: Clear w/ tan tint
Sample Designation: 104675-B16MW Time / Date: 15:40 9/22/20
QC Sample Designation: ✓ Time / Date: _____
QA Sample Designation: _____ Time / Date: ✓

Evacuation Method: Submersible Pump / Other: Double Whale
Sampling Method: Submersible Pump / Other: Double Whale
Water Quality Instruments Used/Manufacturer/Model Number: Horiba + Turbidimeter
Calibration Info (Time, Ranges, etc): 13:00 9/22/20
Remarks: —

Sampling Personnel: ZJT

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 104675 Location: King Salmon Site: MaN Air
Well No.: B16MW
Date: 9/22/20

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)
15:35	0.5	0.1	14.41	0.39	11.64 ✓	192 ✓	4.67	4.83 ✓	318	12.54 ✓
15:38	0.55	0.1	14.41	0.39	11.71 ✓	193 ✓	4.60	4.82 ✓	319	13.28 ✓

	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: 104675 Location: King Salmon Weather: 56° partly cloudy
Well No.: B17MW
Date: 9/22/20 Time Started: 17:30 Time Completed: 18:15
Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:44 Date of Depth Measurement: 9/21/20
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: 19.08 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 11.54
Water Column in Well: 7.54 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: ~~AR 1.20~~ 1.21 (Water Column in Well x Gallons per foot)

PURGING DATA

Date Purged: 9/22/20 Time Started: 17:39 Time Completed: 18:10
Three Well Volumes: 3.6 (Gallons in Well x 3)
Gallons Purged: 0.55 Depth of Pump (generally 2 ft from bottom): 13.50'
Max. Drawdown (generally 0.3 ft): 0.26 Pump Rate: 0.1
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)
17:44	0.2	0.1	11.70	0.16	11.00	251	7.62	4.92	291	17.21
17:49	0.3	0.1	11.74	0.20	11.09	252	7.41	4.93	290	18.08
17:54	0.4	0.1	11.76	0.22	11.35	251	8.17	4.91	292	14.26
17:57	0.45	0.1	11.77	0.23	11.43	252	8.15	4.97	289	11.85
18:00	0.50	0.1	11.78	0.24	11.46	251	8.13	4.95	291	9.25
18:03	0.55	0.1	11.80	0.26	11.40	251	8.17	4.94	291	7.83

SAMPLING DATA

Odor: None Color: Clear tan tint
Sample Designation: 104675-B17MW Time / Date: 18:05 9/22/20
QC Sample Designation: / Time / Date: /
QA Sample Designation: _____ Time / Date: _____
Evacuation Method: Submersible Pump / Other: Double Whale
Sampling Method: Submersible Pump / Other: Double Whale
Water Quality Instruments Used/Manufacturer/Model Number Horiba + Turbidimeter
Calibration Info (Time, Ranges, etc) 1:30 9/22/20
Remarks: —
Sampling Personnel: ZST

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 104675 Location: King Salmon Weather: 47° cloudy
Well No.: B18MW
Date: 9/23/20 Time Started: 13:15 Time Completed: 14:45
Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 11:23 Date of Depth Measurement: 9/21/20
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: 20.10 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 13.34
Water Column in Well: 6.76 (Total Depth of Well Below MP - DTW Below MP)
Gallons per foot: 0.16
Gallons in Well: 1.08 (Water Column in Well x Gallons per foot)

BM: 13.45

PURGING DATA

Date Purged: 9/23/20 Time Started: 13:23 Time Completed: 14:30
Three Well Volumes: 3.24 (Gallons in Well x 3)
Gallons Purged: 0.60 Depth of Pump (generally 2 ft from bottom): 15.5'
Max. Drawdown (generally 0.3 ft): 0.36 Pump Rate: 0.1
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)
13:28	0.1	0.1	13.62	0.17	9.22	434	3.37	6.19	83	6.24
13:33	0.25	0.1	13.64	0.19	9.33	433	2.75	6.20	85	6.81
13:38	0.4	0.1	13.70	0.25	9.71	426	2.10	6.21	89	7.19
13:43	0.5	0.1	13.78	0.33	10.01	424	2.07	6.25	90	6.79
13:46	0.55	0.1	13.80	0.35	10.13	424	2.08	6.27	91	6.12
13:49	0.60	0.1	13.81	0.36	10.15	425	2.06	6.27	92	5.55

SAMPLING DATA

Odor: Product?? Faint odor Color: Clear
Sample Designation: 104675-B18MW Time / Date: 13:55 9/23/20
QC Sample Designation: 104675-B28MW Time / Date: 14:25 9/23/20
QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: Double Whale
Sampling Method: Submersible Pump / Other: Double Whale

Water Quality Instruments Used/Manufacturer/Model Number Horiba & Turbidimeter

Calibration Info (Time, Ranges, etc) 9:00 9/23/20

Remarks: —

Sampling Personnel: ZST

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 104675 Location: King Salmon Weather: 56° Sunny
Well No.: B19MW
Date: 9/22/20 Time Started: 16:05 Time Completed: 17:10
Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 10:08 Date of Depth Measurement: 9/21/20
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: 20.22 Product Thickness, if noted: —
Depth-to-Water (DTW) Below MP: 15.09
Water Column in Well: 5.13 (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: 9/22/20 Time Started: 16:15 Time Completed: 17:00
Three Well Volumes: 2.46 (Gallons in Well x 3)
Gallons Purged: 1.0 Depth of Pump (generally 2 ft from bottom): 17.0'
Max. Drawdown (generally 0.3 ft): 0.51 Pump Rate: 0.1 L/min
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)
16:20	0.3	0.1	15.60	0.51	9.84	289	4.67	5.79	277	46.62
16:25	0.4	0.1	15.60	0.51	10.32	295	4.02	5.96	267	38.65
16:30	0.5	0.1	15.60	0.51	10.69	300	3.67	6.01	258	31.03
16:35	0.6	0.1	15.59	0.50	11.11	303	3.19	6.08	241	30.85
16:38	0.7	0.1	15.57	0.48	11.34	309	2.98	6.12	227	28.41
16:41	0.8	0.1	15.56	0.47	11.48	312	2.81	6.13	220	28.15

SAMPLING DATA

Odor: None Color: Clear
Sample Designation: 104675-B19MW Time / Date: 16:50 9/22/20
QC Sample Designation: / Time / Date: /
QA Sample Designation: / Time / Date: /
Evacuation Method: Submersible Pump / Other: Double Whale
Sampling Method: Submersible Pump / Other: Double Whale
Water Quality Instruments Used/Manufacturer/Model Number Horiba & Turbidimeter
Calibration Info (Time, Ranges, etc) 1:30 9/22/30
Remarks: —
Sampling Personnel: ZJT

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 104675 Location: King Salmon Site: Mark Air

Well No.: B19MW

Date: 9/22/20

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)
16:44	0.9	0.1	15.56	0.47	11.56	313	2.69	6.14	213	30.75
16:47	1.0	0.1	15.56	0.47	11.64	315	2.81	6.15	205	27.20

	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: 104675 Location: King Salmon Weather: 55° Cloudy

Well No.: B20MW

Date: 9/22/20 Time Started: 1603 Time Completed: 1702

Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 1018 Date of Depth Measurement: 9/22/20

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: 19.98 Product Thickness, if noted: —

Depth-to-Water (DTW) Below MP: 9.76

Water Column in Well: 10.22 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 1.64 (Water Column in Well x Gallons per foot)

Benchmark - 9.75

PURGING DATA

Date Purged: 9/22/20 Time Started: 1614 Time Completed: 1651

Three Well Volumes: 4.92 (Gallons in Well x 3)

Gallons Purged: 0.80 Depth of Pump (generally 2 ft from bottom): 21

Max. Drawdown (generally 0.3 ft): 1.07 Pump Rate: 0.1

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)
1624	0.3	0.1	10.49	0.74	12.43	607	4.32	3.93	20.4	2.70
1629	0.45	0.1	10.62	0.87	12.75	649	3.84	3.91	22.3	3.12
1634	0.60	0.1	10.79	1.04	12.91	667	3.62	3.89	17.6	1.88
1637	0.75	0.1	10.81	1.06	12.84	675	3.46	3.88	21.9	2.42
1640	0.80	0.1	10.82	1.07	12.94	675	3.29	3.87	21.9	2.05

SAMPLING DATA

Odor: None Color: Clear

Sample Designation: 104675 - B20MW Time / Date: 1045 9/22/20

QC Sample Designation: — Time / Date: —

QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: Double whale

Sampling Method: Submersible Pump / Other: Double whale

Water Quality Instruments Used/Manufacturer/Model Number YSI + MicroTPW

Calibration Info (Time, Ranges, etc) Calibrated 9/22/20 @ 1330

Remarks: _____

Sampling Personnel: AJR

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Job No: 104675 Location: King Salmon Weather: 55° Cloudy

Well No.: B21MW

Date: 9/22/20 Time Started: 1730 Time Completed: 1855

Develop Date: — Develop End Time: — (24 hour break)

INITIAL GROUNDWATER LEVEL DATA

Time of Depth Measurement: 1026 Date of Depth Measurement: 9/22/20

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: 14.91 Product Thickness, if noted: —

Depth-to-Water (DTW) Below MP: 10.03

Water Column in Well: 4.88 (Total Depth of Well Below MP - DTW Below MP)

Gallons per foot: 0.16

Gallons in Well: 0.78 (Water Column in Well x Gallons per foot)

Benchmark - 9.96

PURGING DATA

Date Purged: 9/22/20 Time Started: 1737 Time Completed: 1838

Three Well Volumes: 2.34 (Gallons in Well x 3)

Gallons Purged: 1.4 Depth of Pump (generally 2 ft from bottom): ≈11.5

Max. Drawdown (generally 0.3 ft): 0.93 Pump Rate: 0.1

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)
1747	0.3	0.1	10.91	0.65	10.74	236	10.20	5.95	24.1	207.8
1752	0.4	0.1	10.63	0.67	11.39	236	7.68	5.92	31.0	161.7
1757	0.6	0.1	10.65	0.69	11.96	237	5.20	5.94	30.7	132.3
1802	0.75	0.1	10.70	0.74	11.95	262	4.33	5.98	32.9	135.7
1807	0.90	0.1	10.72	0.76	12.34	269	3.56	6.05	31.7	107.1
1812	1.0	0.1	10.81	0.85	12.69	259	3.25	6.06	29.9	94.28

SAMPLING DATA

Odor: None Color: Light Brown - Clear

Sample Designation: 104675 - B21MW Time / Date: 1830 9/22/20

QC Sample Designation: — Time / Date: —

QA Sample Designation: — Time / Date: —

Evacuation Method: Submersible Pump / Other: Double Check

Sampling Method: Submersible Pump / Other: Double Check

Water Quality Instruments Used/Manufacturer/Model Number YSI + Micro TPW

Calibration Info (Time, Ranges, etc) 1330 on 9/22/20

Remarks: —

Sampling Personnel: AJR

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

LOW-FLOW WATER SAMPLING LOG

Shannon & Wilson, Inc.

Continued from previous page

Job No: 104675 Location: King Salmon Site: Markair

Well No.: B21MW

Date: 9/22/20

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)
1817	1.1	0.1	10.85	0.89	12.81	253	3.43	6.05	28.3	77.26
1822	1.2	0.1	10.87	0.91	13.06	251	3.47	6.03	32.4	71.47
1825	1.3	0.1	10.88	0.92	13.10	252	3.48	6.02	33.8	69.30
1829	1.4	0.1	10.89	0.93	13.07	251	3.47	6.02	34.7	67.89

	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.

Station or Survey Point ID	Backsight (BS) (+)	Height of Instrument (HI)	Foresight (FS) (-)	Elevation	Comments
TBM	4.45	104.45		100.00	TBM- Southeast corner of former markair terminal
B5MW			4.98	99.47	
B3MW			5.24	99.21	
B12MW			10.99	93.46	
B1MW			4.79	99.66	
B2MW			4.15	100.30	
B4MW			5.53	98.92	
B10MW			6.96	97.49	
B11MW			8.73	95.72	
TP1 (B11MW)	2.52	93.79	5.10		
B13MW			5.10	88.69	
TP2 (B2MW)	5.22	105.52	5.91		Instrument moved
B9MW			5.91	99.61	
B7MW			6.08	99.46	
B16MW			7.07	98.45	
B18MW			8.39	97.13	
TP3 (B18MW)	2.84	99.97	5.13		Instrument moved
B21MW			11.28	88.69	
B20MW			7.08	92.89	
B17MW			5.13	94.84	
B19MW			6.08	93.89	
TP4 (B18MW)	4.01	104.45	4.45		Instrument moved

Surfer Input

Well No.	Northing	Easting	Z
B1MW	15071.42	82286.96	79.64
B2MW	15094.64	82235.63	72.78
B3MW	14985.86	82447.44	86.87
B4MW	15038. 73	82240.25	82.93
B5MW	15044.49	82363.80	84.90
B6MW	14943.53	82361.82	Well Blocked
B7MW	15171.00	82153.67	82.71
B8MW			Assumed Destroyed
B9MW	15112. 79	82154.27	69.61 - product
B10MW	15059.61	82127.64	81.28 - product
B11MW	15003.15	82191.61	82.12 - product
B12MW	14875.23	82248.08	84.88
B13MW	14865.68	82149.11	80.02
B14MW	14981.90	82023. 71	Could Not Locate
B15MW	14873.94	82005.46	Could Not Locate
B16MW	15118.16	82035.94	84.43
B17MW	15149.15	81841.62	83.30
B18MW	15257.34	81923.92	83.79
B19MW	15324.28	81797.37	78.80
B20MW	15360.66	81690.7	83.13
B21MW	15177.72	81652.99	78.66

Page inserted by LKB re: what wells used for flow direction modelling

Krebs-Barsis, Lisa K (DEC)

From: Dan McMahon <DXM@shanwil.com>
Sent: Wednesday, May 5, 2021 1:37 PM
To: Krebs-Barsis, Lisa K (DEC)
Cc: Kusche, Kara C (DEC)
Subject: RE: File No. 2569.38.009- Draft Report Comments 12-17-2020

Lisa – Please see Page 48 of the pdf for the surfer input parameters. Under the "z" column, the wells with only elevations presented were used. Therefore, if it is noted that a well was blocked, destroyed, not located, or contained product, the well was not used in the groundwater flow direction calculations. I apologize if this was unclear.

Dan P. McMahon
907-433-3223

From: Krebs-Barsis, Lisa K (DEC) <lisa.krebs-barsis@alaska.gov>
Sent: Wednesday, May 5, 2021 1:26 PM
To: Dan McMahon <DXM@shanwil.com>
Cc: Kusche, Kara C (DEC) <kara.kusche@alaska.gov>
Subject: RE: File No. 2569.38.009- Draft Report Comments 12-17-2020

Good Afternoon Dan,

Thank you for including the PFAS exceedances in the figure.

In my email on January 14th, I asked for additional information about how the groundwater flow direction was determined, including what wells were included in the model. Did you use all of the wells? Including those with free product? Are there any other assumptions that I should know?

Lisa Krebs-Barsis
Contaminated Sites Program
Alaska Department of Environmental Conservation
269-7691

From: Dan McMahon [mailto:DXM@shanwil.com]
Sent: Thursday, April 1, 2021 9:10 AM
To: Krebs-Barsis, Lisa K (DEC) <lisa.krebs-barsis@alaska.gov>
Cc: Kusche, Kara C (DEC) <kara.kusche@alaska.gov>; DEC CS.Submittals (DEC sponsored) <CS.Submittals@alaska.gov>
Subject: RE: File No. 2569.38.009- Draft Report Comments 12-17-2020

Lisa - Attached is our final report for the former MarkAir facility located in King Salmon. Sorry for the delay. We had a issue receiving the final disposal receipt for the drum of purge water. The final report includes an expanded discussion of deviations, a discussion of groundwater flow direction/gradient, a figure (Figure 3) presenting groundwater contours, and PFAS results have been added to Figure 2.

Dan P. McMahon
907-433-3223

ATTACHMENT 2

DISPOSAL RECEIPTS

*** IN CASE OF EMERGENCY CALL 800-899-4672 ***

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. ~~VSGG~~ VSQG

Manifest Document No. 163938A ~~SHAUN TUCKER~~ | 2. Page 1 of 1

3. Generator's Name and Mailing Address
SHANNON & WILSON, INC.
5430 FAIRBANKS STREET
ANCHORAGE, AK 99518-1263

ADEC - MARK AIR
KING SALMON, AK 99613

163938-MK

4. Generator's Phone (907-561-2120)

5. Transporter 1 Company Name ~~NORTHERN AIR CARGO~~ Ace Air Cargo

6. US EPA ID Number ~~AKD003845526~~ AKR000200295

A. State Transporter's ID

B. Transporter 1 Phone ~~800-478-3330~~

7. Transporter 2 Company Name NRC Alaska

8. US EPA ID Number AKR000004184

C. State Transporter's ID

D. Transporter 2 Phone 907 258 1558

9. Designated Facility Name and Site Address
NRC ALASKA LLC
2020 VIKING DRIVE
ANCHORAGE, AK 99501

10. US EPA ID Number
AKR000004184

E. State Facility's ID

F. Facility's Phone 907-258-1558

HM	11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	MATERIAL NOT REGULATED BY D.O.T.	1	DM	220	P
b.					
c.					
d.					

GENERATOR

G. Additional Descriptions for Materials Listed Above
) ~~EA0302~~ ~~IDW DECON WATER~~ (DMSS)
EA0325 PFOS Water

D35219

H. Handling Codes for Wastes Listed Above

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	Signature	Date (Month / Day / Year)
Alec Rizzo		9 / 24 / 20

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
KRYSTA WATTERS		9 / 24 / 20

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month / Day / Year)
Ian Combs		3 / 18 / 20

FACILITY

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)
Patricia L Beasley	Patricia L Beasley	03 / 19 / 21

NON-HAZARDOUS WASTE

CERTIFICATE OF DISPOSAL/RECYCLE

A US Ecology subsidiary company

GENERATOR: ADEC - MARK AIR
1 KING SALMON AIRPORT ROAD
KING SALMON, AK 99613

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

EPA ID NUMBER: VSQG
MANIFEST/DOCUMENT #: 163938A
DATE OF DISPOSAL/RECYCLE: MAR-19-2021

LINE	WASTE DESCRIPTION	CONTAINERS	TYPE	QUANTITY	UOM
1	PFOS/PFOA CONTAMINATED WASTEWATER (DM55)	1	DM	220	P

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

PREPARED BY: PLB

SIGNATURE: Patricia L Beasley **DATE:** MAR 19 2021

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

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

Contaminated Media Transport and Treatment or Disposal Approval Form

DEC HAZARD/SPILL ID #	NAME OF CONTAMINATED SITE OR SPILL
1879	MarkAir - King Salmon

CONTAMINATED SITE OR SPILL LOCATION – ADDRESS OR OTHER APPROPRIATE DESCRIPTION
Lot 2, Block 1, King Salmon Airport

CURRENT PHYSICAL LOCATION OF MEDIA	SOURCE OF THE CONTAMINATION (DAY TANK, WASH BAY, FIRE TRAINING PIT, LUST, ETC.)
in-situ	fuel storage and distribution

CONTAMINANTS OF CONCERN	ESTIMATED VOLUME	DATE(S) GENERATED
DRO/VOCs	<55-gallons	Week of September 21, 2020

POST TREATMENT ANALYSIS REQUIRED *(such as GRO, DRO, RRO, VOCs, metals, PFAS, and/or Chlorinated Solvents)*

COMMENTS OR OTHER IMPORTANT INFORMATION
Water will be processed in a wastewater treatment unit, recovered fuel will be recycled and recovered oil will be managed under 40CFR Part 279 regulations at NRC Alaska Facility (2020 Viking Drive, Anchorage, AK 99501)

TREATMENT FACILITY, LANDFILL, AND/OR FINAL DESTINATION OF MEDIA	PHYSICAL ADDRESS/PHONE NUMBER
NRC Alaska, Inc.	2020 Viking Drive, Anchorage, AK/907-258-1558
RESPONSIBLE PARTY	**ADDRESS/PHONE NUMBER**
ADEC	555 Cordova Street, Anchorage, Alaska
WASTE MANAGEMENT CO. / ORGANIZER	**ADDRESS/PHONE NUMBER**
NRC Alaska, Inc.	2020 Viking Drive, Anchorage, AK/907-258-1558

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

Dan P. McMahon
Name of the Person Requesting Approval (printed)

Senior Associate/Shannon & Wilson
Title/Association

Dan P. McMahon
Digitally signed by Dan P. McMahon
DN: cn=Dan P. McMahon, o=Shannon & Wilson, ou, email=dxm@shanwil.com, c=US
Date: 2020.09.11 10:06:30 -08'00'
Signature

9/11/2020
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.

Lisa Krebs-Barsis
DEC Project Manager Name (printed)

EPS IV
Project Manager Title

DocuSigned by:
Lisa Krebs-Barsis
0299FDD94A5E47E...
Signature

09-22-2020
Date

907-269-7691
Phone Number

ATTACHMENT 3

RESULTS OF ANALYTICAL TESTING BY

SGS NORTH AMERICA INC. OF ANCHORAGE, ALASKA

AND

ADEC LABORATORY DATA REVIEW CHECKLIST

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907)433-3223

Report Number: **1205226**

Client Project: **104675 King Salmon-MarkAir**

Dear Dan McMahon,

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
2020.10.22
14:12:18 -08'00'

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

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

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1205226**
Project Name/Site: **104675 King Salmon-MarkAir**
Project Contact: **Dan McMahon**

Refer to sample receipt form for information on sample condition.

104675-B3MW (1205226001) PS

EPA 537 PFAS were analyzed by SGS of Orlando, FL.

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

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

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
104675-B3MW	1205226001	09/23/2020	09/25/2020	Water (Surface, Eff., Ground)
104675-B7MW	1205226002	09/23/2020	09/25/2020	Water (Surface, Eff., Ground)
104675-B13MW	1205226003	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)
104675-B20MW	1205226004	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)

Method	Method Description

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

1205226

CHAIN OF CUSTODY

Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, Alaska 99518
(907) 561-2120
Fax (206) 695-6777

Date	Time	Sample ID	Total Containers	HDPE 4C	PFAS- EPA Method 537
9/23/2020	9:50	104675-B3MW	2	X	
9/23/2020	11:00	104675-B7MW	2	X	
9/22/2020	15:25	104675-B13MW	2	X	
9/22/2020	16:45	104675-B20MW	2	X	

(1AB) (2AB) (3AB) (4AB)

Relinquished By:
Signature:
Print Name:
Company: Shannon & Wilson, Inc.
Date: 9/25/20
Time: 10:15

Received By:
Signature:
Print Name:
Company:
Date:
Time:

Relinquished By:
Signature:
Print Name:
Company: Shannon & Wilson, Inc.
Date:
Time:

Received By:
Signature:
Print Name: Michelle Allmaras
Company: SGS
Date: 9/25/20
Time: 1012
HD, absent

Project Information
Project Number: 104675
Project Name: King Salmon- MarkAir
Special Instructions:
Contact: Dan McMahon
Sampler: AJR/ZJT

Sample Receipt
Temp Blank: 0.6 D53
Cooler Temperature Upon Arrival:
Sample Matrix: Water
Standard TAT

PM 365300 JD

e-Sample Receipt Form

SGS Workorder #: **1205226** | 1205226

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 @ 0.6 °C Therm. ID: D53
If samples received without a temperature blank, the "cooler temperature" will be documented instead & "COOLER TEMP" will be noted to the right. "ambient" or "chilled" will be noted if neither is available.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	N/A	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	N/A	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

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

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1205226001-A	No Preservative Required	OK			
1205226001-B	No Preservative Required	OK			
1205226002-A	No Preservative Required	OK			
1205226002-B	No Preservative Required	OK			
1205226003-A	No Preservative Required	OK			
1205226003-B	No Preservative Required	OK			
1205226004-A	No Preservative Required	OK			
1205226004-B	No Preservative Required	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.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

SGS North America, Inc

1205226

SGS Job Number: FA79315

Sampling Date: 09/23/20

Report to:

justin.nelson@sgs.com

ATTN: Distribution6

Total number of pages in report: 49

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Andrea Colby 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AK, AR, IA, KY, MA, MS, ND, NH, NV, OK, OR, UT, WA, WV

Test results relate only to samples analyzed.

Sections: 1 2 3 4 5 6

Table of Contents

Sample Summary

SGS North America, Inc

1205226

Job No: FA79315

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FA79315-1	09/23/20	09:50	09/30/20	AQ	Water	104675-B3MW
FA79315-2	09/23/20	11:00	09/30/20	AQ	Water	104675-B7MW
FA79315-3	09/23/20	15:25	09/30/20	AQ	Water	104675-B13MW
FA79315-4	09/23/20	16:45	09/30/20	AQ	Water	104675-B20MW

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: SGS North America, Inc **Job No:** FA79315

Site: 1205226 **Report Date** 10/15/2020 10:57:42

4 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were collected on 09/23/2020 and were received at SGS North America Inc - Orlando on 09/30/2020 properly preserved, at 4.4 Deg. C and intact. These Samples received an SGS Orlando job number of FA79315. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section. Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP82375

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

Sample(s) FA79486-2MS, FA79486-3DUP were used as the QC samples indicated.

All method blanks for this batch meet method specific criteria.

RPD(s) for Duplicate for Perfluorooctanesulfonic acid are outside control limits for sample OP82375-DUP. Probable cause is due to sample non-homogeneity.

Sample(s) FA79315-1, FA79315-2, FA79315-4 have surrogates outside control limits.

FA79315-1 for 13C8-FOSA: Outside control limits.

FA79315-1 for PFOSA: Associated ID Standard outside control limits due to matrix interference. Confirmed by reanalysis.

FA79315-1: Dilution required due to matrix interference (ID recovery standard failure).

FA79315-2 for 13C2-PFTeDA: Outside control limits in associated MS/MSD.

FA79315-4: Confirmation run.

Matrix: AQ **Batch ID:** OP82458

All samples were extracted within the recommended method holding time.

All samples were analyzed within the recommended method holding time.

All method blanks for this batch meet method specific criteria.

Sample(s) FA79381-100MS, FA79381-111DUP were used as the QC samples indicated.

Sample(s) FA79315-4 have surrogates outside control limits.

FA79315-4 for Perfluorotetradecanoic acid: Associated ID Standard outside DoD QSM 5.3 control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA79315-4 for Perfluorotridecanoic acid: Associated ID Standard outside DoD QSM 5.3 control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA79315-4 for 13C2-PFTeDA: Outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

SGS Orlando certifies that this report meets the project requirements for analytical data produced for the samples as received at SGS Orlando and as stated on the COC. SGS Orlando certifies that the data meets the Data Quality Objectives for precision, accuracy and completeness as specified in the SGS Orlando Quality Manual except as noted above. This report is to be used in its entirety. SGS Orlando is not responsible for any assumptions of data quality if partial data packages are used.

Narrative prepared by:

_____

Ariel Hartney, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA79315
Account: SGS North America, Inc
Project: 1205226
Collected: 09/23/20

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA79315-1	**104675-B3MW**					
Perfluorobutanoic acid		0.0801	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.229	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.289	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.137	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.170	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0190	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.319	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.501	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid [a]		1.46	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0299	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0784	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
EtFOSAA		0.0055 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA79315-2	**104675-B7MW**					
Perfluorobutanoic acid		0.0151 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0346	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0278	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0181	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.109	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0048 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorodecanoic acid		0.0044 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0025 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0025 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0776	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0261	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA79315-3	**104675-B13MW**					
Perfluorohexanesulfonic acid		0.0038 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0035 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA79315-4	**104675-B20MW**					
Perfluorobutanoic acid		0.0402	0.015	0.0077	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.149	0.0077	0.0038	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.109	0.0077	0.0038	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0269	0.0077	0.0038	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0387	0.0077	0.0038	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0042 J	0.0077	0.0038	ug/l	EPA 537M QSM5.3 B-15
Perfluorodecanoic acid		0.0020 J	0.0077	0.0038	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0032 J	0.0077	0.0038	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0149	0.0077	0.0038	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA79315
Account: SGS North America, Inc
Project: 1205226
Collected: 09/23/20

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorooctanesulfonic acid		0.0163	0.0077	0.0038	ug/l	EPA 537M QSM5.3 B-15

(a) Dilution required due to matrix interference (ID recovery standard failure).

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	104675-B3MW		
Lab Sample ID:	FA79315-1	**Date Sampled:**	09/23/20
Matrix:	AQ - Water	**Date Received:**	09/30/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	1205226		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q55880.D	1	10/09/20 16:36	NG	10/08/20 07:50	OP82375	S2Q827
Run #2 [a]	2Q55950.D	5	10/11/20 14:16	NAF	10/08/20 07:50	OP82375	S2Q828

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0801	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.229	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.289	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.137	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.170	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0190	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.319	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.501	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	1.46 [b]	0.040	0.020	0.010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0299	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0784	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [c]	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0055	0.016	0.0080	0.0040	ug/l	J
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	104675-B3MW		
Lab Sample ID:	FA79315-1	**Date Sampled:**	09/23/20
Matrix:	AQ - Water	**Date Received:**	09/30/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	1205226		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%	98%	50-150%
	13C5-PFPeA	81%	98%	50-150%
	13C5-PFHxA	82%	98%	50-150%
	13C4-PFHpA	78%	94%	50-150%
	13C8-PFOA	92%	98%	50-150%
	13C9-PFNA	91%	96%	50-150%
	13C6-PFDA	82%	91%	50-150%
	13C7-PFUnDA	79%	85%	50-150%
	13C2-PFDoDA	76%	80%	50-150%
	13C2-PFTeDA	72%	77%	50-150%
	13C3-PFBS	82%	97%	50-150%
	13C3-PFHxS	85%	102%	50-150%
	13C8-PFOS	79%	89%	50-150%
	13C8-FOSA	38% e	48% d	50-150%
	d3-MeFOSAA	89%	89%	50-150%
	d5-EtFOSAA	88%	90%	50-150%
	13C2-4:2FTS	81%	91%	50-150%
	13C2-6:2FTS	90%	93%	50-150%
	13C2-8:2FTS	79%	85%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Associated ID Standard outside control limits due to matrix interference. Confirmed by reanalysis.
(d) Outside control limits due to matrix interference. Confirmed by reanalysis.
(e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	104675-B7MW		
Lab Sample ID:	FA79315-2	**Date Sampled:**	09/23/20
Matrix:	AQ - Water	**Date Received:**	09/30/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	1205226		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q55951.D	1	10/11/20 14:31	NAF	10/08/20 07:50	OP82375	S2Q828
Run #2	2Q55881.D	1	10/09/20 16:51	NG	10/08/20 07:50	OP82375	S2Q827

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0151	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0346	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0278	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0181	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.109	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0048	0.0080	0.0040	0.0020	ug/l	J
335-76-2	Perfluorodecanoic acid	0.0044	0.0080	0.0040	0.0020	ug/l	J
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U [a]	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U [a]	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.0025	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0025	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0776	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0261	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	104675-B7MW		
Lab Sample ID:	FA79315-2	**Date Sampled:**	09/23/20
Matrix:	AQ - Water	**Date Received:**	09/30/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	1205226		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%	77%	50-150%
	13C5-PFPeA	86%	78%	50-150%
	13C5-PFHxA	83%	77%	50-150%
	13C4-PFHpA	77%	72%	50-150%
	13C8-PFOA	82%	81%	50-150%
	13C9-PFNA	85%	82%	50-150%
	13C6-PFDA	78%	74%	50-150%
	13C7-PFUnDA	64%	63%	50-150%
	13C2-PFDoDA	56%	57%	50-150%
	13C2-PFTeDA	45% [b]	50%	50-150%
	13C3-PFBS	85%	79%	50-150%
	13C3-PFHxS	84%	80%	50-150%
	13C8-PFOS	76%	72%	50-150%
	13C8-FOSA	53%	54%	50-150%
	d3-MeFOSAA	63%	74%	50-150%
	d5-EtFOSAA	60%	71%	50-150%
	13C2-4:2FTS	80%	78%	50-150%
	13C2-6:2FTS	81%	83%	50-150%
	13C2-8:2FTS	73%	73%	50-150%

(a) Result is from Run# 2

(b) Outside control limits in associated MS/MSD.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value

LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	104675-B13MW		
Lab Sample ID:	FA79315-3	**Date Sampled:**	09/23/20
Matrix:	AQ - Water	**Date Received:**	09/30/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	1205226		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q55882.D	1	10/09/20 17:06	NG	10/08/20 07:50	OP82375	S2Q827
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0038	0.0080	0.0040	0.0020	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0035	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	104675-B13MW		
Lab Sample ID:	FA79315-3	**Date Sampled:**	09/23/20
Matrix:	AQ - Water	**Date Received:**	09/30/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	1205226		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	85%		50-150%
	13C5-PFPeA	86%		50-150%
	13C5-PFHxA	89%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	92%		50-150%
	13C6-PFDA	89%		50-150%
	13C7-PFUnDA	82%		50-150%
	13C2-PFDoDA	71%		50-150%
	13C2-PFTeDA	73%		50-150%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	88%		50-150%
	13C8-FOSA	78%		50-150%
	d3-MeFOSAA	92%		50-150%
	d5-EtFOSAA	81%		50-150%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	104675-B20MW		
Lab Sample ID:	FA79315-4	**Date Sampled:**	09/23/20
Matrix:	AQ - Water	**Date Received:**	09/30/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	1205226		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q28056.D	1	10/14/20 23:54	NG	10/13/20 08:30	OP82458	S3Q422
Run #2 [a]	2Q55885.D	1	10/09/20 17:50	NG	10/08/20 07:50	OP82375	S2Q827

	Initial Volume	Final Volume
Run #1	130 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0402	0.015	0.0077	0.0038	ug/l	
2706-90-3	Perfluoropentanoic acid	0.149	0.0077	0.0038	0.0019	ug/l	
307-24-4	Perfluorohexanoic acid	0.109	0.0077	0.0038	0.0019	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0269	0.0077	0.0038	0.0019	ug/l	
335-67-1	Perfluorooctanoic acid	0.0387	0.0077	0.0038	0.0019	ug/l	
375-95-1	Perfluorononanoic acid	0.0042	0.0077	0.0038	0.0019	ug/l	J
335-76-2	Perfluorodecanoic acid	0.0020	0.0077	0.0038	0.0019	ug/l	J
2058-94-8	Perfluoroundecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
307-55-1	Perfluorododecanoic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
72629-94-8	Perfluorotridecanoic acid [b]	0.0038 U	0.0077	0.0038	0.0019	ug/l	
376-06-7	Perfluorotetradecanoic acid [b]	0.0038 U	0.0077	0.0038	0.0019	ug/l	
PERFLUOROALKYLSULFONATES							
375-73-5	Perfluorobutanesulfonic acid	0.0032	0.0077	0.0038	0.0019	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0149	0.0077	0.0038	0.0019	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0163	0.0077	0.0038	0.0019	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0038 U	0.0077	0.0038	0.0019	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0038 U	0.0077	0.0038	0.0019	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0077 U	0.015	0.0077	0.0038	ug/l	
2991-50-6	EtFOSAA	0.0077 U	0.015	0.0077	0.0038	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0077 U	0.015	0.0077	0.0038	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0077 U	0.015	0.0077	0.0038	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	104675-B20MW		
Lab Sample ID:	FA79315-4	**Date Sampled:**	09/23/20
Matrix:	AQ - Water	**Date Received:**	09/30/20
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	1205226		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0077 U	0.015	0.0077	0.0038	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%	79%	50-150%
	13C5-PFPeA	77%	81%	50-150%
	13C5-PFHxA	76%	83%	50-150%
	13C4-PFHpA	79%	80%	50-150%
	13C8-PFOA	81%	86%	50-150%
	13C9-PFNA	81%	76%	50-150%
	13C6-PFDA	78%	51%	50-150%
	13C7-PFUnDA	71%	32% [c]	50-150%
	13C2-PFDoDA	68%	25% [c]	50-150%
	13C2-PFTeDA	48% [d]	26% [c]	50-150%
	13C3-PFBS	79%	85%	50-150%
	13C3-PFHxS	78%	86%	50-150%
	13C8-PFOS	79%	62%	50-150%
	13C8-FOSA	58%	34% [c]	50-150%
	d3-MeFOSAA	68%	30% [c]	50-150%
	d5-EtFOSAA	66%	28% [c]	50-150%
	13C2-4:2FTS	73%	62%	50-150%
	13C2-6:2FTS	80%	74%	50-150%
	13C2-8:2FTS	76%	47% [c]	50-150%

(a) Confirmation run.
(b) Associated ID Standard outside DoD QSM 5.3 control limits due to matrix interference. Confirmed by re-extraction and reanalysis.
(c) Outside control limits.
(d) Outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FA79315

SGS North America Inc.
CHAIN OF CUSTODY RECORD

Locations Nationwide
Alaska Florida
New Jersey Colorado
Texas North Carolina
Virginia Louisiana
www.us.sgs.com

CLIENT:	SGS North America Inc. - Alaska Division	SGS Reference:	SGS Orlando, FL
CONTACT:	Julie Shumway PHONE NO: (907) 562-2343	Additional Comments:	All soils report out in dry weight unless
PROJECT NAME:	1205226 PWSID#: / NPDL#:		
REPORTS TO:	Julie Shumway E-MAIL: Julie.Shumway@sgs.com; Env.Alaska.RefLabTeam@sgs.com		
INVOICE TO:	SGS - Alaska QUOTE #: P.O. #: 1205226		

Page 1 of 1

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HHMM	MATRIX/ MATRIX CODE	# CONTAINERS	Preservative Used:	NONE	EPA 537 PFAS*				MS	MSD	SGS lab #	Location ID
						TYPE C = COMP G = GRAB MI = Multi Incremental Soils									
1	104675-B3MW	09/23/2020	09:50:00	Water	2			X						1205226001	
2	104675-B7MW	09/23/2020	11:00:00	Water	2			X						1205226002	
3	104675-B13MW	09/23/2020	15:25:00	Water	2			X						1205226003	
4	104675-B20MW	09/23/2020	16:45:00	Water	2			X						1205226004	

INITIAL ASSESSMENT DG
RE-VERIFICATION MK

Relinquished By: (1)	Date	Time	Received By:	DOD Project?	YES / Data Deliverable Requirements:
J Shumway	9/29/20	1013	Fedex	Report to DL (J Flags)? If J- Report as DL/LOD/LOQ.	YES / Level 2 w/ SGS EDD
Relinquished By: (2)	Date	Time	Received By:	Cooler ID:	
Fedex	9/30/20	930		Requested Turnaround Time and-or Special Instructions:	
Relinquished By: (3)	Date	Time	Received By:	Compound list will be sent in follow up email JN 9/29/20	
Relinquished By: (4)	Date	Time	Received For Laboratory By:	Temp Blank °C: 4.4 or Ambient [ ]	Chain of Custody Seal: (Circle) INTACT BROKEN ABSENT

[X 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms_and_conditions.htm

SGS Sample Receipt Summary

Job Number: FA79315 **Client:** SGS NORTH AMERICA, INC. - ALASKA DI **Project:** 1205226

Date / Time Received: 9/30/2020 9:30:00 AM **Delivery Method:** FEDEX **Airbill #'s:** 148348010148

Therm ID: **Therm CF:** **# of Coolers:** N/A

Cooler Temps (Raw Measured) °C:

Cooler Temps (Corrected) °C:

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☐		☐
4. Cooler temp verification	N/A		
5. Cooler media	N/A		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑
	W	**or**	**S**	**N/A**
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: BRYANG Date: 9/30/2020 9:30:00 AM Reviewer: _____ Date: _____

5.1
5

FA79315: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FA79315
Account: SGS North America, Inc
Project: 1205226
Collected: 09/23/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP82375	EPA 537M QSM5.3 B-15						
OP82375-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	91	%	73-129
OP82375-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	89	%	73-129
OP82375-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	87	%	72-129
OP82375-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	89	%	72-129
OP82375-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	85	%	72-129
OP82375-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	85	%	72-129
OP82375-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	91	%	72-130
OP82375-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	91	%	72-130
OP82375-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	87	%	71-133
OP82375-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	87	%	71-133
OP82375-BS	375-95-1	Perfluorononanoic acid	BSP	REC	83	%	69-130
OP82375-BS	375-95-1	Perfluorononanoic acid	BSP	REC	86	%	69-130
OP82375-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	85	%	71-129
OP82375-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	83	%	71-129
OP82375-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	87	%	69-133
OP82375-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	87	%	69-133
OP82375-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	89	%	72-134
OP82375-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	89	%	72-134
OP82375-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	92	%	65-144
OP82375-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	93	%	65-144
OP82375-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	89	%	71-132
OP82375-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	86	%	71-132
OP82375-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	89	%	73-130
OP82375-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	87	%	73-130
OP82375-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	88	%	71-127
OP82375-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	83	%	71-127
OP82375-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	89	%	68-131
OP82375-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	90	%	68-131
OP82375-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	88	%	69-134
OP82375-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	89	%	69-134
OP82375-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	88	%	65-140
OP82375-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	88	%	65-140
OP82375-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	74	%	69-127
OP82375-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	73	%	69-127
OP82375-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	61	%	53-142
OP82375-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	63	%	53-142
OP82375-BS	754-91-6	PFOSA	BSP	REC	85	%	67-137
OP82375-BS	754-91-6	PFOSA	BSP	REC	85	%	67-137
OP82375-BS	2355-31-9	MeFOSAA	BSP	REC	89	%	65-136
OP82375-BS	2355-31-9	MeFOSAA	BSP	REC	87	%	65-136
OP82375-BS	2991-50-6	EtFOSAA	BSP	REC	89	%	61-135
OP82375-BS	2991-50-6	EtFOSAA	BSP	REC	89	%	61-135

* Sample used for QC is not from job FA79315

QC Evaluation: DOD QSM5.x Limits

Job Number: FA79315
Account: SGS North America, Inc
Project: 1205226
Collected: 09/23/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP82375-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	86	%	63-143
OP82375-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	87	%	63-143
OP82375-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	86	%	64-140
OP82375-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	86	%	64-140
OP82375-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	87	%	67-138
OP82375-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	89	%	67-138
OP82375-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	102	%	73-129
OP82375-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	100	%	72-129
OP82375-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	96	%	72-129
OP82375-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	102	%	72-130
OP82375-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	101	%	71-133
OP82375-MS*	375-95-1	Perfluorononanoic acid	MS	REC	96	%	69-130
OP82375-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	96	%	71-129
OP82375-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	96	%	69-133
OP82375-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	98	%	72-134
OP82375-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	114	%	65-144
OP82375-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	99	%	71-132
OP82375-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	101	%	73-130
OP82375-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	97	%	71-127
OP82375-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	98	%	68-131
OP82375-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	98	%	69-134
OP82375-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	96	%	65-140
OP82375-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	89	%	69-127
OP82375-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	86	%	53-142
OP82375-MS*	754-91-6	PFOSA	MS	REC	98	%	67-137
OP82375-MS*	2355-31-9	MeFOSAA	MS	REC	98	%	65-136
OP82375-MS*	2991-50-6	EtFOSAA	MS	REC	98	%	61-135
OP82375-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	98	%	63-143
OP82375-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	98	%	64-140
OP82375-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	100	%	67-138
OP82375-DUP*	375-22-4	Perfluorobutanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	2706-90-3	Perfluoropentanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	307-24-4	Perfluorohexanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	375-85-9	Perfluoroheptanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	335-67-1	Perfluorooctanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP82375-DUP*	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	0	%	30
OP82375-DUP*	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	0	%	30
OP82375-DUP*	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	0	%	30
OP82375-DUP*	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	0	%	30

* Sample used for QC is not from job FA79315

QC Evaluation: DOD QSM5.x Limits

Job Number: FA79315
Account: SGS North America, Inc
Project: 1205226
Collected: 09/23/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP82375-DUP*	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	200	%	30
OP82375-DUP*	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP82375-DUP*	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP82375-DUP*	754-91-6	PFOSA	DUP	RPD	0	%	30
OP82375-DUP*	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP82375-DUP*	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP82375-DUP*	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP82375-DUP*	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP82375-DUP*	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP82458	EPA 537M QSM5.3 B-15						
OP82458-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	92	%	73-129
OP82458-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	95	%	72-129
OP82458-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	92	%	72-129
OP82458-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	91	%	72-130
OP82458-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	93	%	71-133
OP82458-BS	375-95-1	Perfluorononanoic acid	BSP	REC	93	%	69-130
OP82458-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	92	%	71-129
OP82458-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	93	%	69-133
OP82458-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	91	%	72-134
OP82458-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	93	%	65-144
OP82458-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	93	%	71-132
OP82458-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	94	%	73-130
OP82458-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	94	%	71-127
OP82458-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	95	%	68-131
OP82458-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	95	%	69-134
OP82458-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	93	%	65-140
OP82458-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	89	%	69-127
OP82458-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	80	%	53-142
OP82458-BS	754-91-6	PFOSA	BSP	REC	93	%	67-137
OP82458-BS	2355-31-9	MeFOSAA	BSP	REC	90	%	65-136
OP82458-BS	2991-50-6	EtFOSAA	BSP	REC	89	%	61-135
OP82458-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	93	%	63-143
OP82458-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	94	%	64-140
OP82458-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	93	%	67-138
OP82458-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	93	%	73-129
OP82458-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	99	%	72-129
OP82458-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	96	%	72-129
OP82458-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	95	%	72-130
OP82458-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	96	%	71-133
OP82458-MS*	375-95-1	Perfluorononanoic acid	MS	REC	95	%	69-130
OP82458-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	94	%	71-129
OP82458-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	96	%	69-133
OP82458-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	94	%	72-134

* Sample used for QC is not from job FA79315

QC Evaluation: DOD QSM5.x Limits

Job Number: FA79315
Account: SGS North America, Inc
Project: 1205226
Collected: 09/23/20

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP82458-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	96	%	65-144
OP82458-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	96	%	71-132
OP82458-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	96	%	73-130
OP82458-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	96	%	71-127
OP82458-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	97	%	68-131
OP82458-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	95	%	69-134
OP82458-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	92	%	65-140
OP82458-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	86	%	69-127
OP82458-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	80	%	53-142
OP82458-MS*	754-91-6	PFOSA	MS	REC	96	%	67-137
OP82458-MS*	2355-31-9	MeFOSAA	MS	REC	96	%	65-136
OP82458-MS*	2991-50-6	EtFOSAA	MS	REC	96	%	61-135
OP82458-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	96	%	63-143
OP82458-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	94	%	64-140
OP82458-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	95	%	67-138
OP82458-DUP*	375-22-4	Perfluorobutanoic acid	DUP	RPD	10	%	30
OP82458-DUP*	2706-90-3	Perfluoropentanoic acid	DUP	RPD	15	%	30
OP82458-DUP*	307-24-4	Perfluorohexanoic acid	DUP	RPD	0	%	30
OP82458-DUP*	375-85-9	Perfluoroheptanoic acid	DUP	RPD	0	%	30
OP82458-DUP*	335-67-1	Perfluorooctanoic acid	DUP	RPD	0	%	30
OP82458-DUP*	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP82458-DUP*	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP82458-DUP*	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP82458-DUP*	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP82458-DUP*	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP82458-DUP*	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP82458-DUP*	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	0	%	30
OP82458-DUP*	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	0	%	30
OP82458-DUP*	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	0	%	30
OP82458-DUP*	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	0	%	30
OP82458-DUP*	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	0	%	30
OP82458-DUP*	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP82458-DUP*	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP82458-DUP*	754-91-6	PFOSA	DUP	RPD	0	%	30
OP82458-DUP*	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP82458-DUP*	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP82458-DUP*	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP82458-DUP*	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP82458-DUP*	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30

* Sample used for QC is not from job FA79315

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q827-IBLK	2Q55870.D	1	10/09/20	NG	n/a	n/a	S2Q827

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	94%	50-150%
	13C5-PFPeA	95%	50-150%
	13C5-PFHxA	97%	50-150%
	13C4-PFHpA	93%	50-150%
	13C8-PFOA	103%	50-150%
	13C9-PFNA	100%	50-150%
	13C6-PFDA	100%	50-150%
	13C7-PFUnDA	103%	50-150%

Instrument Blank

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q827-IBLK	2Q55870.D	1	10/09/20	NG	n/a	n/a	S2Q827

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	ID Standard Recoveries		Limits
	13C2-PFDoDA	102%	50-150%
	13C2-PFTeDA	105%	50-150%
	13C3-PFBS	95%	50-150%
	13C3-PFHxS	97%	50-150%
	13C8-PFOS	98%	50-150%
	13C8-FOSA	104%	50-150%
	d3-MeFOSAA	121%	50-150%
	d5-EtFOSAA	121%	50-150%
	13C2-4:2FTS	94%	50-150%
	13C2-6:2FTS	96%	50-150%
	13C2-8:2FTS	95%	50-150%

Instrument Blank

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q828-IBLK	2Q55940.D	1	10/11/20	NAF	n/a	n/a	S2Q828

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	105%	50-150%
	13C5-PFPeA	106%	50-150%
	13C5-PFHxA	106%	50-150%
	13C4-PFHpA	107%	50-150%
	13C8-PFOA	107%	50-150%
	13C9-PFNA	107%	50-150%
	13C6-PFDA	109%	50-150%
	13C7-PFUnDA	106%	50-150%
	13C2-PFDoDA	105%	50-150%
	13C2-PFTeDA	105%	50-150%

Instrument Blank

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q828-IBLK	2Q55940.D	1	10/11/20	NAF	n/a	n/a	S2Q828

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2

CAS No.	ID Standard Recoveries		Limits
	13C3-PFBS	105%	50-150%
	13C3-PFHxS	105%	50-150%
	13C8-PFOS	105%	50-150%
	13C8-FOSA	110%	50-150%
	d3-MeFOSAA	105%	50-150%
	d5-EtFOSAA	109%	50-150%
	13C2-4:2FTS	100%	50-150%
	13C2-6:2FTS	101%	50-150%
	13C2-8:2FTS	100%	50-150%

Instrument Blank

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q422-IBLK	3Q28041.D	1	10/14/20	NG	n/a	n/a	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	92%	50-150%
	13C5-PFPeA	93%	50-150%
	13C5-PFHxA	93%	50-150%
	13C4-PFHpA	93%	50-150%
	13C8-PFOA	94%	50-150%
	13C9-PFNA	95%	50-150%
	13C6-PFDA	94%	50-150%
	13C7-PFUnDA	94%	50-150%

Instrument Blank

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q422-IBLK	3Q28041.D	1	10/14/20	NG	n/a	n/a	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	ID Standard Recoveries		Limits
	13C2-PFDoDA	92%	50-150%
	13C2-PFTeDA	91%	50-150%
	13C3-PFBS	93%	50-150%
	13C3-PFHxS	93%	50-150%
	13C8-PFOS	95%	50-150%
	13C8-FOSA	99%	50-150%
	d3-MeFOSAA	94%	50-150%
	d5-EtFOSAA	92%	50-150%
	13C2-4:2FTS	87%	50-150%
	13C2-6:2FTS	89%	50-150%
	13C2-8:2FTS	90%	50-150%
	13C3-HFPO-DA	88%	50-150%

Method Blank Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-MB	2Q55849.D	1	10/09/20	NG	10/08/20	OP82375	S2Q826

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	87%	50-150%
	13C5-PFPeA	84%	50-150%
	13C5-PFHxA	85%	50-150%
	13C4-PFHpA	82%	50-150%
	13C8-PFOA	83%	50-150%
	13C9-PFNA	74%	50-150%
	13C6-PFDA	67%	50-150%
	13C7-PFUnDA	57%	50-150%

Method Blank Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-MB	2Q55849.D	1	10/09/20	NG	10/08/20	OP82375	S2Q826

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	ID Standard Recoveries		Limits
	13C2-PFDoDA	51%	50-150%
	13C2-PFTeDA	50%	50-150%
	13C3-PFBS	85%	50-150%
	13C3-PFHxS	83%	50-150%
	13C8-PFOS	68%	50-150%
	13C8-FOSA	62%	50-150%
	d3-MeFOSAA	59%	50-150%
	d5-EtFOSAA	51%	50-150%
	13C2-4:2FTS	86%	50-150%
	13C2-6:2FTS	78%	50-150%
	13C2-8:2FTS	59%	50-150%

Method Blank Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-MB	2Q55874.D	1	10/09/20	NG	10/08/20	OP82375	S2Q827

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	85%	50-150%
	13C5-PFPeA	86%	50-150%
	13C5-PFHxA	87%	50-150%
	13C4-PFHpA	83%	50-150%
	13C8-PFOA	84%	50-150%
	13C9-PFNA	76%	50-150%
	13C6-PFDA	67%	50-150%
	13C7-PFUnDA	57%	50-150%

Method Blank Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-MB	2Q55874.D	1	10/09/20	NG	10/08/20	OP82375	S2Q827

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	ID Standard Recoveries		Limits
	13C2-PFDoDA	51%	50-150%
	13C2-PFTeDA	53%	50-150%
	13C3-PFBS	88%	50-150%
	13C3-PFHxS	85%	50-150%
	13C8-PFOS	70%	50-150%
	13C8-FOSA	64%	50-150%
	d3-MeFOSAA	59%	50-150%
	d5-EtFOSAA	52%	50-150%
	13C2-4:2FTS	85%	50-150%
	13C2-6:2FTS	79%	50-150%
	13C2-8:2FTS	58%	50-150%

Method Blank Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82458-MB	3Q28054.D	1	10/14/20	NG	10/13/20	OP82458	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0071	0.0018	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0036	0.00089	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0036	0.00089	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0036	0.00089	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0036	0.00089	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0036	0.00089	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0036	0.00089	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0036	0.00089	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0036	0.00089	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0036	0.00089	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0036	0.00089	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0036	0.00089	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0036	0.00089	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0036	0.00089	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0036	0.00089	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0036	0.00089	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0036	0.00089	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0036	0.00089	ug/l	
754-91-6	PFOSA	ND	0.0036	0.00089	ug/l	
2355-31-9	MeFOSAA	ND	0.0071	0.0018	ug/l	
2991-50-6	EtFOSAA	ND	0.0071	0.0018	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0071	0.0018	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0071	0.0018	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0071	0.0018	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	81%	50-150%
	13C5-PFPeA	80%	50-150%
	13C5-PFHxA	80%	50-150%
	13C4-PFHpA	81%	50-150%
	13C8-PFOA	82%	50-150%
	13C9-PFNA	82%	50-150%
	13C6-PFDA	81%	50-150%
	13C7-PFUnDA	76%	50-150%

Method Blank Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82458-MB	3Q28054.D	1	10/14/20	NG	10/13/20	OP82458	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	ID Standard Recoveries		Limits
	13C2-PFDoDA	72%	50-150%
	13C2-PFTeDA	64%	50-150%
	13C3-PFBS	81%	50-150%
	13C3-PFHxS	82%	50-150%
	13C8-PFOS	82%	50-150%
	13C8-FOSA	85%	50-150%
	d3-MeFOSAA	80%	50-150%
	d5-EtFOSAA	76%	50-150%
	13C2-4:2FTS	76%	50-150%
	13C2-6:2FTS	78%	50-150%
	13C2-8:2FTS	77%	50-150%

Instrument Blank

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q826-IBLK	2Q55774.D	1	10/08/20	NG	n/a	n/a	S2Q826

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

OP82375-BS, OP82375-DUP, OP82375-MS

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	95%	50-150%
	13C5-PFPeA	96%	50-150%
	13C5-PFHxA	99%	50-150%
	13C4-PFHpA	95%	50-150%
	13C8-PFOA	103%	50-150%
	13C9-PFNA	99%	50-150%
	13C6-PFDA	101%	50-150%
	13C7-PFUnDA	104%	50-150%

Instrument Blank

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q826-IBLK	2Q55774.D	1	10/08/20	NG	n/a	n/a	S2Q826

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

OP82375-BS, OP82375-DUP, OP82375-MS

CAS No.	ID Standard Recoveries		Limits
	13C2-PFDoDA	102%	50-150%
	13C2-PFTeDA	105%	50-150%
	13C3-PFBS	97%	50-150%
	13C3-PFHxS	101%	50-150%
	13C8-PFOS	95%	50-150%
	13C8-FOSA	105%	50-150%
	d3-MeFOSAA	117%	50-150%
	d5-EtFOSAA	118%	50-150%
	13C2-4:2FTS	95%	50-150%
	13C2-6:2FTS	97%	50-150%
	13C2-8:2FTS	95%	50-150%

Blank Spike Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-BS	2Q55848.D	1	10/09/20	NG	10/08/20	OP82375	S2Q826

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0711	89	73-129
2706-90-3	Perfluoropentanoic acid	0.08	0.0714	89	72-129
307-24-4	Perfluorohexanoic acid	0.08	0.0682	85	72-129
375-85-9	Perfluoroheptanoic acid	0.08	0.0730	91	72-130
335-67-1	Perfluorooctanoic acid	0.08	0.0698	87	71-133
375-95-1	Perfluorononanoic acid	0.08	0.0684	86	69-130
335-76-2	Perfluorodecanoic acid	0.08	0.0665	83	71-129
2058-94-8	Perfluoroundecanoic acid	0.08	0.0695	87	69-133
307-55-1	Perfluorododecanoic acid	0.08	0.0709	89	72-134
72629-94-8	Perfluorotridecanoic acid	0.08	0.0740	93	65-144
376-06-7	Perfluorotetradecanoic acid	0.08	0.0714	89	71-132
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0696	87	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.08	0.0666	83	71-127
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0713	89	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0707	88	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0705	88	65-140
68259-12-1	Perfluorononanesulfonic acid	0.08	0.0594	74	69-127
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0486	61	53-142
754-91-6	PFOSA	0.08	0.0680	85	67-137
2355-31-9	MeFOSAA	0.08	0.0710	89	65-136
2991-50-6	EtFOSAA	0.08	0.0711	89	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.08	0.0694	87	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0686	86	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0697	87	67-138

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	94%	50-150%
	13C5-PFPeA	91%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	88%	50-150%
	13C8-PFOA	94%	50-150%
	13C9-PFNA	89%	50-150%
	13C6-PFDA	83%	50-150%
	13C7-PFUnDA	69%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-BS	2Q55848.D	1	10/09/20	NG	10/08/20	OP82375	S2Q826

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	57%	50-150%
	13C2-PFTeDA	50%	50-150%
	13C3-PFBS	93%	50-150%
	13C3-PFHxS	91%	50-150%
	13C8-PFOS	85%	50-150%
	13C8-FOSA	87%	50-150%
	d3-MeFOSAA	75%	50-150%
	d5-EtFOSAA	66%	50-150%
	13C2-4:2FTS	95%	50-150%
	13C2-6:2FTS	96%	50-150%
	13C2-8:2FTS	81%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-BS	2Q55873.D	1	10/09/20	NG	10/08/20	OP82375	S2Q827

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0728	91	73-129
2706-90-3	Perfluoropentanoic acid	0.08	0.0698	87	72-129
307-24-4	Perfluorohexanoic acid	0.08	0.0676	85	72-129
375-85-9	Perfluoroheptanoic acid	0.08	0.0724	91	72-130
335-67-1	Perfluorooctanoic acid	0.08	0.0698	87	71-133
375-95-1	Perfluorononanoic acid	0.08	0.0664	83	69-130
335-76-2	Perfluorodecanoic acid	0.08	0.0678	85	71-129
2058-94-8	Perfluoroundecanoic acid	0.08	0.0694	87	69-133
307-55-1	Perfluorododecanoic acid	0.08	0.0713	89	72-134
72629-94-8	Perfluorotridecanoic acid	0.08	0.0737	92	65-144
376-06-7	Perfluorotetradecanoic acid	0.08	0.0687	86	71-132
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0713	89	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.08	0.0700	88	71-127
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0723	90	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0711	89	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0704	88	65-140
68259-12-1	Perfluorononanesulfonic acid	0.08	0.0585	73	69-127
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0503	63	53-142
754-91-6	PFOSA	0.08	0.0683	85	67-137
2355-31-9	MeFOSAA	0.08	0.0696	87	65-136
2991-50-6	EtFOSAA	0.08	0.0708	89	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.08	0.0691	86	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0690	86	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0713	89	67-138

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	92%	50-150%
	13C5-PFPeA	92%	50-150%
	13C5-PFHxA	94%	50-150%
	13C4-PFHpA	90%	50-150%
	13C8-PFOA	97%	50-150%
	13C9-PFNA	93%	50-150%
	13C6-PFDA	83%	50-150%
	13C7-PFUnDA	70%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-BS	2Q55873.D	1	10/09/20	NG	10/08/20	OP82375	S2Q827

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	58%	50-150%
	13C2-PFTeDA	53%	50-150%
	13C3-PFBS	92%	50-150%
	13C3-PFHxS	95%	50-150%
	13C8-PFOS	86%	50-150%
	13C8-FOSA	88%	50-150%
	d3-MeFOSAA	78%	50-150%
	d5-EtFOSAA	68%	50-150%
	13C2-4:2FTS	95%	50-150%
	13C2-6:2FTS	95%	50-150%
	13C2-8:2FTS	80%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82458-BS	3Q28053.D	1	10/14/20	NG	10/13/20	OP82458	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.0714	0.0659	92	73-129
2706-90-3	Perfluoropentanoic acid	0.0714	0.0676	95	72-129
307-24-4	Perfluorohexanoic acid	0.0714	0.0658	92	72-129
375-85-9	Perfluoroheptanoic acid	0.0714	0.0649	91	72-130
335-67-1	Perfluorooctanoic acid	0.0714	0.0665	93	71-133
375-95-1	Perfluorononanoic acid	0.0714	0.0667	93	69-130
335-76-2	Perfluorodecanoic acid	0.0714	0.0658	92	71-129
2058-94-8	Perfluoroundecanoic acid	0.0714	0.0661	93	69-133
307-55-1	Perfluorododecanoic acid	0.0714	0.0653	91	72-134
72629-94-8	Perfluorotridecanoic acid	0.0714	0.0666	93	65-144
376-06-7	Perfluorotetradecanoic acid	0.0714	0.0667	93	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0714	0.0672	94	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.0714	0.0669	94	71-127
355-46-4	Perfluorohexanesulfonic acid	0.0714	0.0677	95	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0714	0.0677	95	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.0714	0.0667	93	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0714	0.0637	89	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0714	0.0571	80	53-142
754-91-6	PFOSA	0.0714	0.0663	93	67-137
2355-31-9	MeFOSAA	0.0714	0.0643	90	65-136
2991-50-6	EtFOSAA	0.0714	0.0638	89	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.0714	0.0666	93	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.0714	0.0673	94	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.0714	0.0665	93	67-138

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	97%	50-150%
	13C5-PFPeA	95%	50-150%
	13C5-PFHxA	95%	50-150%
	13C4-PFHpA	96%	50-150%
	13C8-PFOA	96%	50-150%
	13C9-PFNA	96%	50-150%
	13C6-PFDA	94%	50-150%
	13C7-PFUnDA	87%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82458-BS	3Q28053.D	1	10/14/20	NG	10/13/20	OP82458	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	ID Standard Recoveries	BSP	Limits
	13C2-PFDoDA	84%	50-150%
	13C2-PFTeDA	77%	50-150%
	13C3-PFBS	96%	50-150%
	13C3-PFHxS	95%	50-150%
	13C8-PFOS	94%	50-150%
	13C8-FOSA	92%	50-150%
	d3-MeFOSAA	90%	50-150%
	d5-EtFOSAA	86%	50-150%
	13C2-4:2FTS	95%	50-150%
	13C2-6:2FTS	96%	50-150%
	13C2-8:2FTS	95%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-MS	2Q55852.D	1	10/09/20	NG	10/08/20	OP82375	S2Q826
FA79486-2	2Q55851.D	1	10/09/20	NG	10/08/20	OP82375	S2Q826

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	Compound	FA79486-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.015	U	0.16	0.163	102	73-129
2706-90-3	Perfluoropentanoic acid	0.0077	U	0.16	0.160	100	72-129
307-24-4	Perfluorohexanoic acid	0.0077	U	0.16	0.154	96	72-129
375-85-9	Perfluoroheptanoic acid	0.0077	U	0.16	0.163	102	72-130
335-67-1	Perfluorooctanoic acid	0.0077	U	0.16	0.161	101	71-133
375-95-1	Perfluorononanoic acid	0.0077	U	0.16	0.153	96	69-130
335-76-2	Perfluorodecanoic acid	0.0077	U	0.16	0.153	96	71-129
2058-94-8	Perfluoroundecanoic acid	0.0077	U	0.16	0.154	96	69-133
307-55-1	Perfluorododecanoic acid	0.0077	U	0.16	0.156	98	72-134
72629-94-8	Perfluorotridecanoic acid	0.0077	U	0.16	0.182	114	65-144
376-06-7	Perfluorotetradecanoic acid	0.0077	U	0.16	0.159	99	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0077	U	0.16	0.162	101	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.0077	U	0.16	0.155	97	71-127
355-46-4	Perfluorohexanesulfonic acid	0.0077	U	0.16	0.157	98	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0077	U	0.16	0.157	98	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.0077	U	0.16	0.154	96	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0077	U	0.16	0.142	89	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0077	U	0.16	0.138	86	53-142
754-91-6	PFOSA	0.0077	U	0.16	0.156	98	67-137
2355-31-9	MeFOSAA	0.015	U	0.16	0.156	98	65-136
2991-50-6	EtFOSAA	0.015	U	0.16	0.156	98	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.015	U	0.16	0.157	98	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.015	U	0.16	0.156	98	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.015	U	0.16	0.160	100	67-138

CAS No.	ID Standard Recoveries	MS	FA79486-2	Limits
	13C8-PFOA	84%	95%	50-150%
	13C3-PFBS	81%	90%	50-150%
	13C8-PFOS	79%	78%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82458-MS	3Q28070.D	1	10/15/20	NG	10/13/20	OP82458	S3Q422
FA79381-100	3Q28069.D	1	10/15/20	NG	10/13/20	OP82458	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	Compound	FA79381-100 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0591		0.154	0.202	93	73-129
2706-90-3	Perfluoropentanoic acid	0.0077	U	0.154	0.153	99	72-129
307-24-4	Perfluorohexanoic acid	0.0077	U	0.154	0.148	96	72-129
375-85-9	Perfluoroheptanoic acid	0.0077	U	0.154	0.146	95	72-130
335-67-1	Perfluorooctanoic acid	0.0077	U	0.154	0.148	96	71-133
375-95-1	Perfluorononanoic acid	0.0077	U	0.154	0.146	95	69-130
335-76-2	Perfluorodecanoic acid	0.0077	U	0.154	0.145	94	71-129
2058-94-8	Perfluoroundecanoic acid	0.0077	U	0.154	0.147	96	69-133
307-55-1	Perfluorododecanoic acid	0.0077	U	0.154	0.145	94	72-134
72629-94-8	Perfluorotridecanoic acid	0.0077	U	0.154	0.147	96	65-144
376-06-7	Perfluorotetradecanoic acid	0.0077	U	0.154	0.148	96	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0077	U	0.154	0.148	96	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.0077	U	0.154	0.147	96	71-127
355-46-4	Perfluorohexanesulfonic acid	0.0077	U	0.154	0.149	97	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0077	U	0.154	0.146	95	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.0077	U	0.154	0.142	92	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0077	U	0.154	0.133	86	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0077	U	0.154	0.123	80	53-142
754-91-6	PFOSA	0.0077	U	0.154	0.147	96	67-137
2355-31-9	MeFOSAA	0.015	U	0.154	0.147	96	65-136
2991-50-6	EtFOSAA	0.015	U	0.154	0.147	96	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.015	U	0.154	0.147	96	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.015	U	0.154	0.145	94	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.015	U	0.154	0.146	95	67-138

CAS No.	ID Standard Recoveries	MS	FA79381-100	Limits
	13C4-PFBA	87%	73%	50-150%
	13C5-PFPeA	84%	72%	50-150%
	13C5-PFHxA	84%	72%	50-150%
	13C4-PFHpA	85%	74%	50-150%
	13C8-PFOA	85%	76%	50-150%
	13C9-PFNA	87%	77%	50-150%
	13C6-PFDA	84%	75%	50-150%
	13C7-PFUnDA	78%	71%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82458-MS	3Q28070.D	1	10/15/20	NG	10/13/20	OP82458	S3Q422
FA79381-100	3Q28069.D	1	10/15/20	NG	10/13/20	OP82458	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	ID Standard Recoveries	MS	FA79381-100	Limits
	13C2-PFDoDA	77%	71%	50-150%
	13C2-PFTeDA	71%	64%	50-150%
	13C3-PFBS	86%	80%	50-150%
	13C3-PFHxS	87%	79%	50-150%
	13C8-PFOS	86%	79%	50-150%
	13C8-FOSA	85%	75%	50-150%
	d3-MeFOSAA	80%	76%	50-150%
	d5-EtFOSAA	77%	71%	50-150%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	88%		50-150%
	13C2-8:2FTS	84%		50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82375-DUP	2Q55854.D	1	10/09/20	NG	10/08/20	OP82375	S2Q826
FA79486-3	2Q55853.D	1	10/09/20	NG	10/08/20	OP82375	S2Q826

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-1, FA79315-2, FA79315-3

CAS No.	Compound	FA79486-3 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.015 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0077 U		ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0077 U		ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0077 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0077 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0077 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0077 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0077 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0077 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0077 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0077 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0077 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0077 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0077 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0077 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0077 U		0.0035	J	200*	30
68259-12-1	Perfluorononanesulfonic acid	0.0077 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0077 U		ND		nc	30
754-91-6	PFOSA	0.0077 U		ND		nc	30
2355-31-9	MeFOSAA	0.015 U		ND		nc	30
2991-50-6	EtFOSAA	0.015 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.015 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.015 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.015 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA79486-3	Limits
	13C8-PFOA	78%	87%	50-150%
	13C3-PFBS	75%	85%	50-150%
	13C8-PFOS	55%	58%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82458-DUP	3Q28073.D	1	10/15/20	NG	10/13/20	OP82458	S3Q422
FA79381-111	3Q28072.D	1	10/15/20	NG	10/13/20	OP82458	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	Compound	FA79381-111 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.0493		0.0448		10	30
2706-90-3	Perfluoropentanoic acid	0.0029	J	0.0025	J	15	30
307-24-4	Perfluorohexanoic acid	0.0077 U		ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0077 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0077 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0077 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0077 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0077 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0077 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0077 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0077 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0077 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0077 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0077 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0077 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0077 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0077 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0077 U		ND		nc	30
754-91-6	PFOSA	0.0077 U		ND		nc	30
2355-31-9	MeFOSAA	0.015 U		ND		nc	30
2991-50-6	EtFOSAA	0.015 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.015 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.015 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.015 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA79381-111	Limits
	13C4-PFBA	83%	77%	50-150%
	13C5-PFPeA	82%	75%	50-150%
	13C5-PFHxA	81%	75%	50-150%
	13C4-PFHpA	83%	77%	50-150%
	13C8-PFOA	83%	78%	50-150%
	13C9-PFNA	84%	78%	50-150%
	13C6-PFDA	81%	74%	50-150%
	13C7-PFUnDA	78%	68%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA79315
Account: SGSAKA SGS North America, Inc
Project: 1205226

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP82458-DUP	3Q28073.D	1	10/15/20	NG	10/13/20	OP82458	S3Q422
FA79381-111	3Q28072.D	1	10/15/20	NG	10/13/20	OP82458	S3Q422

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA79315-4

CAS No.	ID Standard Recoveries	DUP	FA79381-111	Limits
	13C2-PFDoDA	76%	68%	50-150%
	13C2-PFTeDA	68%	61%	50-150%
	13C3-PFBS	83%	76%	50-150%
	13C3-PFHxS	83%	76%	50-150%
	13C8-PFOS	84%	75%	50-150%
	13C8-FOSA	82%	78%	50-150%
	d3-MeFOSAA	78%	69%	50-150%
	d5-EtFOSAA	77%	67%	50-150%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	78%		50-150%

* = Outside of Control Limits.

LABORATORY DATA REVIEW CHECKLIST

Completed by: Alec Rizzo
Title: Former Markair Facility
Date: March 2021

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.
Laboratory Report Number: 1205226
Laboratory Report Date: 10/15/2020

Contaminated Site Name: MarkAir King Salmon
ADEC File Number: 2569.38.009
Hazard Identification Number: 1879

(**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: *Analyses were performed by SGS of Orlando, Florida.*

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 was 0.6° C upon receipt at SGS in Anchorage, Alaska and 4.4°C at SGS in Orlando, Florida.*

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, VOCs, etc.)? **Yes / No / NA**
Comments: *The method does not require a preservative.*

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: *Data quality/usability are considered unaffected; 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:*

- *RPD(s) for Duplicate for Perfluorooctanesulfonic acid are outside control limits for sample OP82375-DUP. Probable cause is due to sample non-homogeneity.*
- *Samples B3MW, B7MW, and B20MW have surrogates outside control limits.*
- *Sample B3MW for 13C8-FOSA: Outside control limits.*
- *Sample B3MW for PFOSA: Associated ID Standard outside control limits due to matrix interference. Confirmed by reanalysis.*
- *Sample B3MW: Dilution required due to matrix interference (ID recovery standard failure).*
- *Sample B7MW for 13C2-PFTeDA: Outside control limits in associated MS/MSD.*
- *Sample B20MW have surrogates outside control limits.*
- *Sample B20MW for Perfluorotetradecanoic acid: Associated ID Standard outside DoD QSM 5.3 control limits due to matrix interference. Confirmed by re-extraction and reanalysis.*
- *Sample B20MW for Perfluorotridecanoic acid: Associated ID Standard outside DoD QSM 5.3 control limits due to matrix interference. Confirmed by re-extraction and reanalysis.*
- *Sample B20MW for 13C2-PFTeDA: Outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.*

c. Were all corrective actions documented? **Yes / No / NA**
Comments: *See above.*

d. What is the effect on data quality/usability, according to the case narrative?
Comments: *See above.*

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:

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 are unaffected.*

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: *Only organic analyses were requested with this work order.*

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*: 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: *Only organic analyses were requested with this work order.*

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 MS/MSD, and/or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) **Yes / No / NA**
Comments: *The MSD RPD for perfluorooctanesulfonic acid is outside the control limits for Samples B3MW, B7MW, and B13MW.*

v. If %R or RPD is outside of acceptable limits, what samples are affected?
Comments: *See above.*

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined? **Yes / No / NA**
Comments: *The sample used as the parent is from another work order. Therefore, flagging is not required.*

vii. Data quality or usability affected?
Comments*: 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: *Samples B3MW, B7MW, and B20MW have IDA recoveries outside control limits.*

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: *Samples B3MW and B20MW have IDA recoveries for PFOSA and perfluorotetradecanoic acid outside QC criteria, respectively. The non-detected results were flagged "J" in Table 3. Sample B7MW also has an IDA recovery failure for perfluorotetradecanoic acid below QC criteria, however, a second confirmation run was performed and the IDA recovery was in the QC limit. Therefore, the reported laboratory results are unaffected*

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? **Yes / No / (NA)**
Comments: *Volatile analyses were not requested with this work order.*

ii. Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **Yes / No / (NA)**
Comments:

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:

f. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?
Yes / (No) / NA
Comments: *A duplicate sample was not included in our ADEC-approved work plan.*

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 6 and on the bottom of pages 14-21, 25-28, and 44-55.*

Laboratory Report of Analysis

To: Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, AK 99518
(907)433-3223

Report Number: **1205227**

Client Project: **104675 King Salmon-MarkAir**

Dear Dan McMahon,

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
2020.10.15
17:07:19 -08'00'

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

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

Case Narrative

SGS Client: **Shannon & Wilson, Inc.**
SGS Project: **1205227**
Project Name/Site: **104675 King Salmon-MarkAir**
Project Contact: **Dan McMahon**

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.

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

Laboratory Qualifiers

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

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

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & 17-021 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020B, 7470A, 7471B, 8015C, 8021B, 8082A, 8260D, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). SGS is only certified for the analytes listed on our Drinking Water Certification (DW methods: 200.8, 2130B, 2320B, 2510B, 300.0, 4500-CN-C,E, 4500-H-B, 4500-NO3-F, 4500-P-E and 524.2) and only those analytes will be reported to the State of Alaska for compliance. Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
B	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
DF	Analytical Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LLQC/LLIQC	Low Level Quantitation Check
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
RPD	Relative Percent Difference
TNTC	Too Numerous To Count
U	Indicates the analyte was analyzed for but not detected.

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

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

Sample Summary

Client Sample ID	Lab Sample ID	Collected	Received	Matrix
1046785-B1MW	1205227001	09/23/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B2MW	1205227002	09/23/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B3MW	1205227003	09/23/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B7MW	1205227004	09/23/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B12MW	1205227005	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B13MW	1205227006	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B16MW	1205227007	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B17MW	1205227008	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B18MW	1205227009	09/23/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B19MW	1205227010	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B20MW	1205227011	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B21MW	1205227012	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-B28MW	1205227013	09/23/2020	09/25/2020	Water (Surface, Eff., Ground)
1046785-WTB	1205227014	09/22/2020	09/25/2020	Water (Surface, Eff., Ground)

Method	Method Description
AK102	DRO Low Volume (W)
SW8260D	Volatile Organic Compounds (W) FULL

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

Detectable Results Summary

Client Sample ID: **1046785-B1MW**
Lab Sample ID: 1205227001
Semivolatile Organic Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	2.90	mg/L
Benzene	0.202J	ug/L
Dichlorodifluoromethane	0.875J	ug/L
Isopropylbenzene (Cumene)	3.14	ug/L
sec-Butylbenzene	2.05	ug/L
tert-Butylbenzene	1.08	ug/L

Client Sample ID: **1046785-B2MW**
Lab Sample ID: 1205227002
Semivolatile Organic Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	30.5	mg/L
1,2,4-Trimethylbenzene	0.797J	ug/L
1,2-Dichloroethane	0.486J	ug/L
Benzene	43.8	ug/L
Ethylbenzene	11.9	ug/L
Isopropylbenzene (Cumene)	3.68	ug/L
Naphthalene	88.4	ug/L
n-Propylbenzene	1.96	ug/L
P & M -Xylene	6.36	ug/L
sec-Butylbenzene	1.24	ug/L
tert-Butylbenzene	0.356J	ug/L
Xylenes (total)	6.36	ug/L

Client Sample ID: **1046785-B3MW**
Lab Sample ID: 1205227003
Semivolatile Organic Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	1.24	mg/L
Trichlorofluoromethane	0.435J	ug/L

Client Sample ID: **1046785-B7MW**
Lab Sample ID: 1205227004
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	1.27	mg/L

Client Sample ID: **1046785-B12MW**
Lab Sample ID: 1205227005
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.411J	mg/L

Client Sample ID: **1046785-B13MW**
Lab Sample ID: 1205227006
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.367J	mg/L

Client Sample ID: **1046785-B16MW**
Lab Sample ID: 1205227007
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.688	mg/L

Client Sample ID: **1046785-B17MW**
Lab Sample ID: 1205227008
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	10.6	mg/L

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

Detectable Results Summary

Client Sample ID: **1046785-B18MW**
Lab Sample ID: 1205227009
Semivolatile Organic Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	5.27	mg/L
Benzene	0.170J	ug/L
Naphthalene	7.06	ug/L
sec-Butylbenzene	0.496J	ug/L

Client Sample ID: **1046785-B19MW**
Lab Sample ID: 1205227010
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.535J	mg/L

Client Sample ID: **1046785-B20MW**
Lab Sample ID: 1205227011
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.667	mg/L

Client Sample ID: **1046785-B21MW**
Lab Sample ID: 1205227012
Semivolatile Organic Fuels

Parameter	Result	Units
Diesel Range Organics	0.641	mg/L

Client Sample ID: **1046785-B28MW**
Lab Sample ID: 1205227013
Semivolatile Organic Fuels
Volatile GC/MS

Parameter	Result	Units
Diesel Range Organics	5.57	mg/L
Benzene	0.157J	ug/L
Naphthalene	6.65	ug/L
sec-Butylbenzene	0.489J	ug/L
Tetrachloroethene	0.315J	ug/L

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

Results of **1046785-B1MW**

Client Sample ID: **1046785-B1MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227001
Lab Project ID: 1205227

Collection Date: 09/23/20 10:05
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	2.90		0.588	0.176	mg/L	1		10/07/20 19:24
Surrogates								
5a Androstane (surr)	99.9		50-150		%	1		10/07/20 19:24

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 19:24
Container ID: 1205227001-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B1MW**

Client Sample ID: **1046785-B1MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227001
Lab Project ID: 1205227

Collection Date: 09/23/20 10:05
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:00
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:00
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 00:00
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:00
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 00:00
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:00
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:00
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:00
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:00
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:00
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:00
Benzene	0.202	J	0.400	0.120	ug/L	1		09/28/20 00:00
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:00
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 00:00
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:00
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:00
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:00

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B1MW**

Client Sample ID: **1046785-B1MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227001
Lab Project ID: 1205227

Collection Date: 09/23/20 10:05
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:00
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:00
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
Dichlorodifluoromethane	0.875 J		1.00	0.310	ug/L	1		09/28/20 00:00
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:00
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
Isopropylbenzene (Cumene)	3.14		1.00	0.310	ug/L	1		09/28/20 00:00
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:00
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:00
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 00:00
sec-Butylbenzene	2.05		1.00	0.310	ug/L	1		09/28/20 00:00
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
tert-Butylbenzene	1.08		1.00	0.310	ug/L	1		09/28/20 00:00
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:00
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:00
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 00:00
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 00:00
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		09/28/20 00:00
4-Bromofluorobenzene (surr)	94.4		85-114		%	1		09/28/20 00:00
Toluene-d8 (surr)	92.5		89-112		%	1		09/28/20 00:00

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B1MW**

Client Sample ID: **1046785-B1MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227001
Lab Project ID: 1205227

Collection Date: 09/23/20 10:05
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 00:00
Container ID: 1205227001-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B2MW**

Client Sample ID: **1046785-B2MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227002
Lab Project ID: 1205227

Collection Date: 09/23/20 11:15
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	30.5		0.577	0.173	mg/L	1		10/07/20 19:34
Surrogates								
5a Androstane (surr)	112		50-150		%	1		10/07/20 19:34

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 19:34
Container ID: 1205227002-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Results of **1046785-B2MW**

Client Sample ID: **1046785-B2MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227002
Lab Project ID: 1205227

Collection Date: 09/23/20 11:15
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:57
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:57
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 02:57
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,2,4-Trimethylbenzene	0.797	J	1.00	0.310	ug/L	1		09/28/20 02:57
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:57
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 02:57
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,2-Dichloroethane	0.486	J	0.500	0.150	ug/L	1		09/28/20 02:57
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:57
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:57
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:57
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:57
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:57
Benzene	43.8		0.400	0.120	ug/L	1		09/28/20 02:57
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:57
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 02:57
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:57
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:57
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B2MW**

Client Sample ID: **1046785-B2MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227002
Lab Project ID: 1205227

Collection Date: 09/23/20 11:15
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Chloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:57
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:57
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Ethylbenzene	11.9		1.00	0.310	ug/L	1		09/28/20 02:57
Freon-113	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:57
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Isopropylbenzene (Cumene)	3.68		1.00	0.310	ug/L	1		09/28/20 02:57
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:57
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:57
Naphthalene	88.4		1.00	0.310	ug/L	1		09/28/20 02:57
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
n-Propylbenzene	1.96		1.00	0.310	ug/L	1		09/28/20 02:57
o-Xylene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
P & M -Xylene	6.36		2.00	0.620	ug/L	1		09/28/20 02:57
sec-Butylbenzene	1.24		1.00	0.310	ug/L	1		09/28/20 02:57
Styrene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
tert-Butylbenzene	0.356	J	1.00	0.310	ug/L	1		09/28/20 02:57
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Toluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:57
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:57
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		09/28/20 02:57
Xylenes (total)	6.36		3.00	1.00	ug/L	1		09/28/20 02:57
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.4		81-118		%	1		09/28/20 02:57
4-Bromofluorobenzene (surr)	94.5		85-114		%	1		09/28/20 02:57
Toluene-d8 (surr)	92.4		89-112		%	1		09/28/20 02:57

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B2MW**

Client Sample ID: **1046785-B2MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227002
Lab Project ID: 1205227

Collection Date: 09/23/20 11:15
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 02:57
Container ID: 1205227002-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B3MW**

Client Sample ID: **1046785-B3MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227003
Lab Project ID: 1205227

Collection Date: 09/23/20 09:50
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	1.24		0.588	0.176	mg/L	1		10/07/20 19:43
Surrogates								
5a Androstane (surr)	103		50-150		%	1		10/07/20 19:43

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 19:43
Container ID: 1205227003-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Results of **1046785-B3MW**

Client Sample ID: **1046785-B3MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227003
Lab Project ID: 1205227

Collection Date: 09/23/20 09:50
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:15
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:15
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 00:15
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:15
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 00:15
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:15
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:15
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:15
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:15
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:15
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:15
Benzene	0.200	U	0.400	0.120	ug/L	1		09/28/20 00:15
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:15
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 00:15
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:15
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:15
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:15

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B3MW**

Client Sample ID: **1046785-B3MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227003
Lab Project ID: 1205227

Collection Date: 09/23/20 09:50
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:15
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:15
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:15
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:15
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:15
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 00:15
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:15
Trichlorofluoromethane	0.435 J		1.00	0.310	ug/L	1		09/28/20 00:15
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:15
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 00:15
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 00:15
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.8		81-118		%	1		09/28/20 00:15
4-Bromofluorobenzene (surr)	93.6		85-114		%	1		09/28/20 00:15
Toluene-d8 (surr)	93.4		89-112		%	1		09/28/20 00:15

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B3MW**

Client Sample ID: **1046785-B3MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227003
Lab Project ID: 1205227

Collection Date: 09/23/20 09:50
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 00:15
Container ID: 1205227003-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B7MW**

Client Sample ID: **1046785-B7MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227004
Lab Project ID: 1205227

Collection Date: 09/23/20 11:00
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	1.27		0.588	0.176	mg/L	1		10/07/20 19:53
Surrogates								
5a Androstane (surr)	97.4		50-150		%	1		10/07/20 19:53

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 19:53
Container ID: 1205227004-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B7MW**

Client Sample ID: **1046785-B7MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227004
Lab Project ID: 1205227

Collection Date: 09/23/20 11:00
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:30
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:30
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 00:30
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:30
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 00:30
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:30
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:30
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:30
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:30
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:30
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:30
Benzene	0.200	U	0.400	0.120	ug/L	1		09/28/20 00:30
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:30
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 00:30
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:30
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:30
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:30

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B7MW**

Client Sample ID: **1046785-B7MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227004
Lab Project ID: 1205227

Collection Date: 09/23/20 11:00
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:30
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:30
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:30
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:30
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:30
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 00:30
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:30
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:30
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 00:30
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 00:30
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.7		81-118		%	1		09/28/20 00:30
4-Bromofluorobenzene (surr)	95.1		85-114		%	1		09/28/20 00:30
Toluene-d8 (surr)	91.7		89-112		%	1		09/28/20 00:30

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B7MW**

Client Sample ID: **1046785-B7MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227004
Lab Project ID: 1205227

Collection Date: 09/23/20 11:00
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 00:30
Container ID: 1205227004-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B12MW**

Client Sample ID: **1046785-B12MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227005
Lab Project ID: 1205227

Collection Date: 09/22/20 14:30
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.411	J	0.577	0.173	mg/L	1		10/07/20 20:03
Surrogates								
5a Androstane (surr)	91.7		50-150		%	1		10/07/20 20:03

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 20:03
Container ID: 1205227005-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B12MW**

Client Sample ID: **1046785-B12MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227005
Lab Project ID: 1205227

Collection Date: 09/22/20 14:30
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:45
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:45
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 00:45
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:45
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 00:45
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:45
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:45
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:45
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:45
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:45
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:45
Benzene	0.200	U	0.400	0.120	ug/L	1		09/28/20 00:45
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:45
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 00:45
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:45
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:45
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:45

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B12MW**

Client Sample ID: **1046785-B12MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227005
Lab Project ID: 1205227

Collection Date: 09/22/20 14:30
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:45
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:45
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:45
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:45
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:45
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 00:45
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:45
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:45
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 00:45
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 00:45
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		81-118		%	1		09/28/20 00:45
4-Bromofluorobenzene (surr)	94.5		85-114		%	1		09/28/20 00:45
Toluene-d8 (surr)	92.4		89-112		%	1		09/28/20 00:45

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B12MW**

Client Sample ID: **1046785-B12MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227005
Lab Project ID: 1205227

Collection Date: 09/22/20 14:30
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 00:45
Container ID: 1205227005-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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

Results of **1046785-B13MW**

Client Sample ID: **1046785-B13MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227006
Lab Project ID: 1205227

Collection Date: 09/22/20 15:25
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.367	J	0.577	0.173	mg/L	1		10/07/20 20:14
Surrogates								
5a Androstane (surr)	97.8		50-150		%	1		10/07/20 20:14

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 20:14
Container ID: 1205227006-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B13MW**

Client Sample ID: **1046785-B13MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227006
Lab Project ID: 1205227

Collection Date: 09/22/20 15:25
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:59
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:59
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 00:59
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:59
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 00:59
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:59
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:59
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:59
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:59
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:59
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:59
Benzene	0.200	U	0.400	0.120	ug/L	1		09/28/20 00:59
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:59
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 00:59
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 00:59
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 00:59
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 00:59

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B13MW**

Client Sample ID: **1046785-B13MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227006
Lab Project ID: 1205227

Collection Date: 09/22/20 15:25
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:59
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 00:59
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:59
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:59
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:59
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 00:59
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 00:59
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 00:59
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 00:59
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 00:59
Surrogates								
1,2-Dichloroethane-D4 (surr)	100		81-118		%	1		09/28/20 00:59
4-Bromofluorobenzene (surr)	95.2		85-114		%	1		09/28/20 00:59
Toluene-d8 (surr)	92.5		89-112		%	1		09/28/20 00:59

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B13MW**

Client Sample ID: **1046785-B13MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227006
Lab Project ID: 1205227

Collection Date: 09/22/20 15:25
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 00:59
Container ID: 1205227006-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B16MW**

Client Sample ID: **1046785-B16MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227007
Lab Project ID: 1205227

Collection Date: 09/22/20 15:40
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.688		0.600	0.180	mg/L	1		10/07/20 20:24
Surrogates								
5a Androstane (surr)	97.1		50-150		%	1		10/07/20 20:24

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 20:24
Container ID: 1205227007-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B16MW**

Client Sample ID: **1046785-B16MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227007
Lab Project ID: 1205227

Collection Date: 09/22/20 15:40
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:14
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:14
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 01:14
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:14
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 01:14
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:14
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:14
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:14
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:14
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:14
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:14
Benzene	0.200	U	0.400	0.120	ug/L	1		09/28/20 01:14
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:14
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 01:14
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:14
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:14
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:14

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B16MW**

Client Sample ID: **1046785-B16MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227007
Lab Project ID: 1205227

Collection Date: 09/22/20 15:40
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 01:14
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 01:14
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:14
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:14
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:14
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 01:14
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:14
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:14
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 01:14
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 01:14
Surrogates								
1,2-Dichloroethane-D4 (surr)	101		81-118		%	1		09/28/20 01:14
4-Bromofluorobenzene (surr)	93.7		85-114		%	1		09/28/20 01:14
Toluene-d8 (surr)	90.7		89-112		%	1		09/28/20 01:14

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B16MW**

Client Sample ID: **1046785-B16MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227007
Lab Project ID: 1205227

Collection Date: 09/22/20 15:40
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 01:14
Container ID: 1205227007-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B17MW**

Client Sample ID: **1046785-B17MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227008
Lab Project ID: 1205227

Collection Date: 09/22/20 18:05
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	10.6		0.600	0.180	mg/L	1		10/07/20 20:53
Surrogates								
5a Androstane (surr)	118		50-150		%	1		10/07/20 20:53

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 20:53
Container ID: 1205227008-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B17MW**

Client Sample ID: **1046785-B17MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227008
Lab Project ID: 1205227

Collection Date: 09/22/20 18:05
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:29
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:29
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 01:29
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:29
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 01:29
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:29
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:29
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:29
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:29
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:29
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:29
Benzene	0.200	U	0.400	0.120	ug/L	1		09/28/20 01:29
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:29
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 01:29
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:29
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:29
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:29

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B17MW**

Client Sample ID: **1046785-B17MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227008
Lab Project ID: 1205227

Collection Date: 09/22/20 18:05
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 01:29
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 01:29
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:29
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:29
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:29
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 01:29
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:29
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:29
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 01:29
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 01:29
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.8		81-118		%	1		09/28/20 01:29
4-Bromofluorobenzene (surr)	95		85-114		%	1		09/28/20 01:29
Toluene-d8 (surr)	92.4		89-112		%	1		09/28/20 01:29

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B17MW**

Client Sample ID: **1046785-B17MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227008
Lab Project ID: 1205227

Collection Date: 09/22/20 18:05
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 01:29
Container ID: 1205227008-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B18MW**

Client Sample ID: **1046785-B18MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227009
Lab Project ID: 1205227

Collection Date: 09/23/20 13:55
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	5.27		0.600	0.180	mg/L	1		10/07/20 21:03
Surrogates								
5a Androstane (surr)	101		50-150		%	1		10/07/20 21:03

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 21:03
Container ID: 1205227009-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B18MW**

Client Sample ID: **1046785-B18MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227009
Lab Project ID: 1205227

Collection Date: 09/23/20 13:55
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:43
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:43
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 01:43
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:43
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 01:43
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:43
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:43
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:43
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:43
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:43
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:43
Benzene	0.170	J	0.400	0.120	ug/L	1		09/28/20 01:43
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:43
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 01:43
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:43
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:43
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B18MW**

Client Sample ID: **1046785-B18MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227009
Lab Project ID: 1205227

Collection Date: 09/23/20 13:55
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Chloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:43
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:43
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Freon-113	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:43
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:43
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:43
Naphthalene	7.06		1.00	0.310	ug/L	1		09/28/20 01:43
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
o-Xylene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		09/28/20 01:43
sec-Butylbenzene	0.496	J	1.00	0.310	ug/L	1		09/28/20 01:43
Styrene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Toluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:43
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:43
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		09/28/20 01:43
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		09/28/20 01:43
Surrogates								
1,2-Dichloroethane-D4 (surr)	99.4		81-118		%	1		09/28/20 01:43
4-Bromofluorobenzene (surr)	94.6		85-114		%	1		09/28/20 01:43
Toluene-d8 (surr)	91.4		89-112		%	1		09/28/20 01:43

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B18MW**

Client Sample ID: **1046785-B18MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227009
Lab Project ID: 1205227

Collection Date: 09/23/20 13:55
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 01:43
Container ID: 1205227009-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B19MW**

Client Sample ID: **1046785-B19MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227010
Lab Project ID: 1205227

Collection Date: 09/22/20 16:50
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.535	J	0.588	0.176	mg/L	1		10/07/20 21:13
Surrogates								
5a Androstane (surr)	103		50-150		%	1		10/07/20 21:13

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 21:13
Container ID: 1205227010-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 255 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B19MW**

Client Sample ID: **1046785-B19MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227010
Lab Project ID: 1205227

Collection Date: 09/22/20 16:50
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:58
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:58
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 01:58
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:58
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 01:58
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:58
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:58
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:58
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:58
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:58
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:58
Benzene	0.200	U	0.400	0.120	ug/L	1		09/28/20 01:58
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:58
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 01:58
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 01:58
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 01:58
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 01:58

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B19MW**

Client Sample ID: **1046785-B19MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227010
Lab Project ID: 1205227

Collection Date: 09/22/20 16:50
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 01:58
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 01:58
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:58
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:58
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:58
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 01:58
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 01:58
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 01:58
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 01:58
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 01:58
Surrogates								
1,2-Dichloroethane-D4 (surr)	100		81-118		%	1		09/28/20 01:58
4-Bromofluorobenzene (surr)	94.3		85-114		%	1		09/28/20 01:58
Toluene-d8 (surr)	93.2		89-112		%	1		09/28/20 01:58

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B19MW**

Client Sample ID: **1046785-B19MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227010
Lab Project ID: 1205227

Collection Date: 09/22/20 16:50
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 01:58
Container ID: 1205227010-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B20MW**

Client Sample ID: **1046785-B20MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227011
Lab Project ID: 1205227

Collection Date: 09/22/20 16:45
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.667		0.577	0.173	mg/L	1		10/07/20 21:23
Surrogates								
5a Androstane (surr)	102		50-150		%	1		10/07/20 21:23

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 21:23
Container ID: 1205227011-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B20MW**

Client Sample ID: **1046785-B20MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227011
Lab Project ID: 1205227

Collection Date: 09/22/20 16:45
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:13
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:13
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 02:13
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:13
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 02:13
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:13
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:13
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:13
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:13
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:13
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:13
Benzene	0.200	U	0.400	0.120	ug/L	1		09/28/20 02:13
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:13
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 02:13
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:13
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:13
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:13

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B20MW**

Client Sample ID: **1046785-B20MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227011
Lab Project ID: 1205227

Collection Date: 09/22/20 16:45
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 02:13
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 02:13
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 02:13
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 02:13
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 02:13
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 02:13
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:13
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 02:13
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 02:13
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 02:13
Surrogates								
1,2-Dichloroethane-D4 (surr)	103		81-118		%	1		09/28/20 02:13
4-Bromofluorobenzene (surr)	92.8		85-114		%	1		09/28/20 02:13
Toluene-d8 (surr)	93.3		89-112		%	1		09/28/20 02:13

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B20MW**

Client Sample ID: **1046785-B20MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227011
Lab Project ID: 1205227

Collection Date: 09/22/20 16:45
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 02:13
Container ID: 1205227011-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B21MW**

Client Sample ID: **1046785-B21MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227012
Lab Project ID: 1205227

Collection Date: 09/22/20 18:30
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.641		0.577	0.173	mg/L	1		10/07/20 21:33
Surrogates								
5a Androstane (surr)	98.3		50-150		%	1		10/07/20 21:33

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 21:33
Container ID: 1205227012-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 260 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B21MW**

Client Sample ID: **1046785-B21MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227012
Lab Project ID: 1205227

Collection Date: 09/22/20 18:30
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:27
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:27
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 02:27
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:27
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 02:27
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:27
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:27
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:27
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:27
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:27
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:27
Benzene	0.200	U	0.400	0.120	ug/L	1		09/28/20 02:27
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:27
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 02:27
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:27
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:27
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:27

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B21MW**

Client Sample ID: **1046785-B21MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227012
Lab Project ID: 1205227

Collection Date: 09/22/20 18:30
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/28/20 02:27
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/28/20 02:27
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/28/20 02:27
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/28/20 02:27
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/28/20 02:27
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/28/20 02:27
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Styrene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Toluene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/28/20 02:27
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/28/20 02:27
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/28/20 02:27
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/28/20 02:27
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		09/28/20 02:27
4-Bromofluorobenzene (surr)	93.7		85-114		%	1		09/28/20 02:27
Toluene-d8 (surr)	93.3		89-112		%	1		09/28/20 02:27

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B21MW**

Client Sample ID: **1046785-B21MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227012
Lab Project ID: 1205227

Collection Date: 09/22/20 18:30
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 02:27
Container ID: 1205227012-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-B28MW**

Client Sample ID: **1046785-B28MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227013
Lab Project ID: 1205227

Collection Date: 09/23/20 14:25
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Semivolatile Organic Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	5.57		0.600	0.180	mg/L	1		10/07/20 21:43
Surrogates								
5a Androstane (surr)	107		50-150		%	1		10/07/20 21:43

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Analyst: CDM
Analytical Date/Time: 10/07/20 21:43
Container ID: 1205227013-A

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/05/20 14:56
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B28MW**

Client Sample ID: **1046785-B28MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227013
Lab Project ID: 1205227

Collection Date: 09/23/20 14:25
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:42
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:42
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/28/20 02:42
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:42
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/28/20 02:42
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:42
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:42
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:42
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:42
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:42
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:42
Benzene	0.157	J	0.400	0.120	ug/L	1		09/28/20 02:42
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:42
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/28/20 02:42
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:42
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:42
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B28MW**

Client Sample ID: **1046785-B28MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227013
Lab Project ID: 1205227

Collection Date: 09/23/20 14:25
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Chloromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:42
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		09/28/20 02:42
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Freon-113	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:42
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:42
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:42
Naphthalene	6.65		1.00	0.310	ug/L	1		09/28/20 02:42
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
o-Xylene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		09/28/20 02:42
sec-Butylbenzene	0.489	J	1.00	0.310	ug/L	1		09/28/20 02:42
Styrene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Tetrachloroethene	0.315	J	1.00	0.310	ug/L	1		09/28/20 02:42
Toluene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		09/28/20 02:42
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		09/28/20 02:42
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		09/28/20 02:42
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		09/28/20 02:42
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		09/28/20 02:42
4-Bromofluorobenzene (surr)	94.3		85-114		%	1		09/28/20 02:42
Toluene-d8 (surr)	94.2		89-112		%	1		09/28/20 02:42

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-B28MW**

Client Sample ID: **1046785-B28MW**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227013
Lab Project ID: 1205227

Collection Date: 09/23/20 14:25
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/28/20 02:42
Container ID: 1205227013-C

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **1046785-WTB**

Client Sample ID: **1046785-WTB**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227014
Lab Project ID: 1205227

Collection Date: 09/22/20 14:00
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/27/20 21:04
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		09/27/20 21:04
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		09/27/20 21:04
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		09/27/20 21:04
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		09/27/20 21:04
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		09/27/20 21:04
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		09/27/20 21:04
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/27/20 21:04
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		09/27/20 21:04
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		09/27/20 21:04
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		09/27/20 21:04
Benzene	0.200	U	0.400	0.120	ug/L	1		09/27/20 21:04
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		09/27/20 21:04
Bromoform	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
Bromomethane	2.50	U	5.00	2.00	ug/L	1		09/27/20 21:04
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		09/27/20 21:04
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		09/27/20 21:04
Chloroethane	0.500	U	1.00	0.310	ug/L	1		09/27/20 21:04

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-WTB**

Client Sample ID: **1046785-WTB**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227014
Lab Project ID: 1205227

Collection Date: 09/22/20 14:00
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Chloroform	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Chloromethane	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
cis-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
cis-1,3-Dichloropropene	0.250 U		0.500	0.150	ug/L	1		09/27/20 21:04
Dibromochloromethane	0.250 U		0.500	0.150	ug/L	1		09/27/20 21:04
Dibromomethane	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Dichlorodifluoromethane	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Freon-113	5.00 U		10.0	3.10	ug/L	1		09/27/20 21:04
Hexachlorobutadiene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Isopropylbenzene (Cumene)	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Methylene chloride	5.00 U		10.0	3.10	ug/L	1		09/27/20 21:04
Methyl-t-butyl ether	5.00 U		10.0	3.10	ug/L	1		09/27/20 21:04
Naphthalene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
n-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
n-Propylbenzene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
o-Xylene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		09/27/20 21:04
sec-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Styrene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
tert-Butylbenzene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Tetrachloroethene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Toluene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
trans-1,2-Dichloroethene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
trans-1,3-Dichloropropene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Trichloroethene	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Trichlorofluoromethane	0.500 U		1.00	0.310	ug/L	1		09/27/20 21:04
Vinyl acetate	5.00 U		10.0	3.10	ug/L	1		09/27/20 21:04
Vinyl chloride	0.0750 U		0.150	0.0500	ug/L	1		09/27/20 21:04
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		09/27/20 21:04
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		09/27/20 21:04
4-Bromofluorobenzene (surr)	95.2		85-114		%	1		09/27/20 21:04
Toluene-d8 (surr)	92.4		89-112		%	1		09/27/20 21:04

Print Date: 10/15/2020 4:31:02PM

J flagging is activated

Results of **1046785-WTB**

Client Sample ID: **1046785-WTB**
Client Project ID: **104675 King Salmon-MarkAir**
Lab Sample ID: 1205227014
Lab Project ID: 1205227

Collection Date: 09/22/20 14:00
Received Date: 09/25/20 10:12
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 09/27/20 21:04
Container ID: 1205227014-A

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 09/27/20 18:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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

Method Blank

Blank ID: MB for HBN 1812236 [VXX/36425]
Blank Lab ID: 1583948

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1205227001, 1205227002, 1205227003, 1205227004, 1205227005, 1205227006, 1205227007, 1205227008, 1205227009, 1205227010, 1205227011, 1205227012, 1205227013, 1205227014

Results by **SW8260D**

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

Method Blank

Blank ID: MB for HBN 1812236 [VXX/36425]
Blank Lab ID: 1583948

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1205227001, 1205227002, 1205227003, 1205227004, 1205227005, 1205227006, 1205227007, 1205227008, 1205227009, 1205227010, 1205227011, 1205227012, 1205227013, 1205227014

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	5.00U	10.0	3.10	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	0.500U	1.00	0.310	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.0750U	0.150	0.0500	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	102	81-118		%
4-Bromofluorobenzene (surr)	97.4	85-114		%
Toluene-d8 (surr)	93.1	89-112		%

Method Blank

Blank ID: MB for HBN 1812236 [VXX/36425]
Blank Lab ID: 1583948

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1205227001, 1205227002, 1205227003, 1205227004, 1205227005, 1205227006, 1205227007, 1205227008, 1205227009, 1205227010, 1205227011, 1205227012, 1205227013, 1205227014

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS20358
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 9/27/2020 6:07:00PM

Prep Batch: VXX36425
Prep Method: SW5030B
Prep Date/Time: 9/27/2020 6:00:00PM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205227 [VXX36425]
Blank Spike Lab ID: 1583949
Date Analyzed: 09/27/2020 18:36

Spike Duplicate ID: LCSD for HBN 1205227 [VXX36425]
Spike Duplicate Lab ID: 1583950
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205227001, 1205227002, 1205227003, 1205227004, 1205227005, 1205227006, 1205227007, 1205227008, 1205227009, 1205227010, 1205227011, 1205227012, 1205227013, 1205227014

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
1,1,1,2-Tetrachloroethane	30	28.9	96	30	29.6	99	(78-124)	2.40	(< 20)
1,1,1-Trichloroethane	30	29.4	98	30	30.4	101	(74-131)	3.50	(< 20)
1,1,2,2-Tetrachloroethane	30	28.2	94	30	28.6	96	(71-121)	1.40	(< 20)
1,1,2-Trichloroethane	30	27.5	92	30	27.5	92	(80-119)	0.13	(< 20)
1,1-Dichloroethane	30	28.3	94	30	29.4	98	(77-125)	3.90	(< 20)
1,1-Dichloroethene	30	28.5	95	30	30.2	101	(71-131)	5.60	(< 20)
1,1-Dichloropropene	30	28.9	96	30	30.0	100	(79-125)	3.60	(< 20)
1,2,3-Trichlorobenzene	30	31.9	106	30	32.3	108	(69-129)	1.20	(< 20)
1,2,3-Trichloropropane	30	29.5	99	30	30.0	100	(73-122)	1.70	(< 20)
1,2,4-Trichlorobenzene	30	30.5	102	30	30.8	103	(69-130)	0.74	(< 20)
1,2,4-Trimethylbenzene	30	28.9	97	30	30.8	103	(79-124)	6.20	(< 20)
1,2-Dibromo-3-chloropropane	30	29.1	97	30	29.2	98	(62-128)	0.35	(< 20)
1,2-Dibromoethane	30	28.4	95	30	28.3	94	(77-121)	0.33	(< 20)
1,2-Dichlorobenzene	30	29.2	97	30	30.0	100	(80-119)	2.80	(< 20)
1,2-Dichloroethane	30	28.5	95	30	28.6	95	(73-128)	0.60	(< 20)
1,2-Dichloropropane	30	28.9	97	30	29.7	99	(78-122)	2.50	(< 20)
1,3,5-Trimethylbenzene	30	28.5	95	30	30.4	101	(75-124)	6.60	(< 20)
1,3-Dichlorobenzene	30	28.9	97	30	30.5	102	(80-119)	5.30	(< 20)
1,3-Dichloropropane	30	27.6	92	30	27.8	93	(80-119)	0.40	(< 20)
1,4-Dichlorobenzene	30	28.9	96	30	30.1	100	(79-118)	4.10	(< 20)
2,2-Dichloropropane	30	30.1	100	30	31.5	105	(60-139)	4.70	(< 20)
2-Butanone (MEK)	90	89.0	99	90	84.5	94	(56-143)	5.10	(< 20)
2-Chlorotoluene	30	29.2	98	30	30.9	103	(79-122)	5.40	(< 20)
2-Hexanone	90	77.7	86	90	75.5	84	(57-139)	2.90	(< 20)
4-Chlorotoluene	30	29.2	98	30	30.6	102	(78-122)	4.60	(< 20)
4-Isopropyltoluene	30	30.0	100	30	31.2	104	(77-127)	4.20	(< 20)
4-Methyl-2-pentanone (MIBK)	90	87.3	97	90	85.1	95	(67-130)	2.60	(< 20)
Benzene	30	28.4	95	30	29.3	98	(79-120)	3.20	(< 20)
Bromobenzene	30	29.3	98	30	30.8	103	(80-120)	4.90	(< 20)
Bromochloromethane	30	29.4	98	30	30.0	100	(78-123)	1.90	(< 20)
Bromodichloromethane	30	29.5	98	30	30.1	100	(79-125)	1.80	(< 20)
Bromoform	30	29.0	97	30	29.0	97	(66-130)	0.15	(< 20)
Bromomethane	30	28.1	94	30	28.8	96	(53-141)	2.30	(< 20)
Carbon disulfide	45	37.4	83	45	40.5	90	(64-133)	8.10	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205227 [VXX36425]
Blank Spike Lab ID: 1583949
Date Analyzed: 09/27/2020 18:36

Spike Duplicate ID: LCSD for HBN 1205227 [VXX36425]
Spike Duplicate Lab ID: 1583950
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205227001, 1205227002, 1205227003, 1205227004, 1205227005, 1205227006, 1205227007, 1205227008, 1205227009, 1205227010, 1205227011, 1205227012, 1205227013, 1205227014

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Carbon tetrachloride	30	29.7	99	30	30.9	103	(72-136)	3.80	(< 20)
Chlorobenzene	30	26.5	88	30	27.5	92	(82-118)	3.50	(< 20)
Chloroethane	30	24.3	81	30	24.5	82	(60-138)	0.76	(< 20)
Chloroform	30	27.5	92	30	28.3	94	(79-124)	3.10	(< 20)
Chloromethane	30	26.2	87	30	27.1	90	(50-139)	3.40	(< 20)
cis-1,2-Dichloroethene	30	29.1	97	30	30.2	101	(78-123)	3.70	(< 20)
cis-1,3-Dichloropropene	30	29.1	97	30	29.8	99	(75-124)	2.40	(< 20)
Dibromochloromethane	30	28.7	96	30	28.7	96	(74-126)	0.02	(< 20)
Dibromomethane	30	29.5	98	30	29.5	98	(79-123)	0.12	(< 20)
Dichlorodifluoromethane	30	29.4	98	30	30.0	100	(32-152)	2.10	(< 20)
Ethylbenzene	30	29.3	98	30	30.3	101	(79-121)	3.60	(< 20)
Freon-113	45	40.4	90	45	42.2	94	(70-136)	4.40	(< 20)
Hexachlorobutadiene	30	34.1	114	30	36.0	120	(66-134)	5.50	(< 20)
Isopropylbenzene (Cumene)	30	29.0	97	30	30.3	101	(72-131)	4.20	(< 20)
Methylene chloride	30	28.4	95	30	29.4	98	(74-124)	3.20	(< 20)
Methyl-t-butyl ether	45	44.2	98	45	44.3	99	(71-124)	0.32	(< 20)
Naphthalene	30	28.1	94	30	28.7	96	(61-128)	2.40	(< 20)
n-Butylbenzene	30	32.7	109	30	33.1	110	(75-128)	1.30	(< 20)
n-Propylbenzene	30	30.2	101	30	32.0	107	(76-126)	5.80	(< 20)
o-Xylene	30	30.2	101	30	31.2	104	(78-122)	3.20	(< 20)
P & M -Xylene	60	60.6	101	60	62.7	105	(80-121)	3.50	(< 20)
sec-Butylbenzene	30	31.2	104	30	32.6	109	(77-126)	4.20	(< 20)
Styrene	30	27.8	93	30	29.4	98	(78-123)	5.30	(< 20)
tert-Butylbenzene	30	30.6	102	30	31.9	106	(78-124)	4.00	(< 20)
Tetrachloroethene	30	28.4	95	30	29.2	97	(74-129)	3.00	(< 20)
Toluene	30	26.8	89	30	27.5	92	(80-121)	2.80	(< 20)
trans-1,2-Dichloroethene	30	29.0	97	30	30.4	101	(75-124)	4.90	(< 20)
trans-1,3-Dichloropropene	30	29.3	98	30	29.5	98	(73-127)	0.78	(< 20)
Trichloroethene	30	29.5	99	30	30.7	102	(79-123)	4.00	(< 20)
Trichlorofluoromethane	30	29.9	100	30	30.7	102	(65-141)	2.50	(< 20)
Vinyl acetate	30	33.2	111	30	33.5	112	(54-146)	0.79	(< 20)
Vinyl chloride	30	25.4	85	30	26.6	89	(58-137)	4.70	(< 20)
Xylenes (total)	90	90.8	101	90	93.9	104	(79-121)	3.40	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205227 [VXX36425]
Blank Spike Lab ID: 1583949
Date Analyzed: 09/27/2020 18:36

Spike Duplicate ID: LCSD for HBN 1205227 [VXX36425]
Spike Duplicate Lab ID: 1583950
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205227001, 1205227002, 1205227003, 1205227004, 1205227005, 1205227006, 1205227007, 1205227008, 1205227009, 1205227010, 1205227011, 1205227012, 1205227013, 1205227014

Results by **SW8260D**

	Blank Spike (%)			Spike Duplicate (%)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	97.1	97	30	97.1	97	(81-118)	0.02	
4-Bromofluorobenzene (surr)	30	94.8	95	30	96	96	(85-114)	1.30	
Toluene-d8 (surr)	30	92.9	93	30	92.5	93	(89-112)	0.47	

Batch Information

Analytical Batch: **VMS20358**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX36425**
Prep Method: **SW5030B**
Prep Date/Time: **09/27/2020 18:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Method Blank

Blank ID: MB for HBN 1812583 [XXX/43997]
Blank Lab ID: 1585635

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1205227001, 1205227002, 1205227003, 1205227004, 1205227005, 1205227006, 1205227007, 1205227008, 1205227009, 1205227010, 1205227011, 1205227012, 1205227013

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.267J	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	102	60-120		%

Batch Information

Analytical Batch: XFC15764
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: CDM
Analytical Date/Time: 10/7/2020 6:54:00PM

Prep Batch: XXX43997
Prep Method: SW3520C
Prep Date/Time: 10/5/2020 2:56:49PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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

Blank Spike Summary

Blank Spike ID: LCS for HBN 1205227 [XXX43997]
Blank Spike Lab ID: 1585636
Date Analyzed: 10/07/2020 19:04

Spike Duplicate ID: LCSD for HBN 1205227 [XXX43997]
Spike Duplicate Lab ID: 1585637
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1205227001, 1205227002, 1205227003, 1205227004, 1205227005, 1205227006, 1205227007, 1205227008, 1205227009, 1205227010, 1205227011, 1205227012, 1205227013

Results by **AK102**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Diesel Range Organics	20	22.0	110	20	21.8	109	(75-125)	0.69	(< 20)
Surrogates									
5a Androstane (surr)	0.4	115	115	0.4	117	117	(60-120)	1.60	

Batch Information

Analytical Batch: **XFC15764**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **CDM**

Prep Batch: **XXX43997**
Prep Method: **SW3520C**
Prep Date/Time: **10/05/2020 14:56**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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

1205227

CHAIN OF CUSTODY

Shannon & Wilson, Inc.
5430 Fairbanks Street, Suite 3
Anchorage, Alaska 99518
(907) 561-2120
Fax (206) 695-6777

Date	Time	Sample ID	Total Containers	VOA Vials HCl Pres.	Amber Glass HCl Pres.													
				VOCs- EPA Method 8260D	DRO- AK102													
9/23/2020	10:05	104675-B1MW	5	X	X													1AE
9/23/2020	11:15	104675-B2MW	5	X	X													2AE
9/23/2020	9:50	104675-B3MW	5	X	X													3AE
9/23/2020	11:00	104675-B7MW	5	X	X													4AE
9/22/2020	14:30	104675-B12MW	5	X	X													5AE
9/22/2020	15:25	104675-B13MW	5	X	X													6AE
9/22/2020	15:40	104675-B16MW	5	X	X													7AE
9/22/2020	18:05	104675-B17MW	5	X	X													8AE
9/23/2020	13:55	104675-B18MW	5	X	X													9AE
9/22/2020	16:50	104675-B19MW	5	X	X													10AE
9/22/2020	16:45	104675-B20MW	5	X	X													11AE
9/22/2020	18:30	104675-B21MW	5	X	X													12AE
9/23/2020	14:25	104675-B28MW	5	X	X													13AE
9/22/2020	14:00	104675-WTB	1 Box	X														14AC

Relinquished By:

Signature: [signature] Date: 9/25/20

Print Name: Zachary T Time: 10:15

Company: Shannon & Wilson, Inc.

Received By:

Signature: Date:

Print Name: Time:

Company:

Relinquished By:

Signature: Date:

Print Name: Time:

Company: Shannon & Wilson, Inc.

Received By:

Signature: [signature] Date: 09/25/20

Print Name: Michelle Allgaier Time: 1012

Company: SGS HD, absent

Project Information

Project Number: 104675 Contact: Dan McMahon

Project Name: King Salmon- MarkAir Sampler: AJR/ZJT

Special Instructions:

Sample Receipt

Temp Blank: 0.3 D21 Sample Matrix: Water

Cooler Temperature Upon Arrival:

Standard TAT

p# 365300 NV

e-Sample Receipt Form

SGS Workorder #: 1205227

1205227

Review Criteria	Condition (Yes, No, N/A)	Exceptions Noted below
Chain of Custody / Temperature Requirements		Yes — Exemption permitted if sampler hand carries/delivers.
Were Custody Seals intact? Note # & location	N/A	Absent
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 @ 0.3 °C Therm. ID: D21
		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.		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
		Cooler ID: @ °C Therm. ID:
*If >6°C, were samples collected <8 hours ago?	N/A	
If <0°C, were sample containers ice free?	N/A	
Note: Identify containers received at non-compliant temperature . Use form FS-0029 if more space is needed.		
Holding Time / Documentation / Sample Condition Requirements		Note: Refer to form F-083 "Sample Guide" for specific holding times.
Were samples received within holding time?	Yes	
Do samples **match COC**** (i.e.,sample IDs,dates/times collected)?	Yes	
**Note: If times differ <1hr, record details & login per COC.		
***Note: If sample information on containers differs from COC, SGS will default to COC information		
Were analytical requests clear? (i.e., method is specified for analyses with multiple option for analysis (Ex: BTEX, Metals)	Yes	
	N/A	***Exemption permitted for metals (e.g,200.8/6020B).
Were proper containers (type/mass/volume/preservative***)used?	Yes	
Volatile / LL-Hg Requirements		
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	Yes	
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

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

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition
1205227001-A	HCL to pH < 2	OK
1205227001-B	HCL to pH < 2	OK
1205227001-C	HCL to pH < 2	OK
1205227001-D	HCL to pH < 2	OK
1205227001-E	HCL to pH < 2	OK
1205227002-A	HCL to pH < 2	OK
1205227002-B	HCL to pH < 2	OK
1205227002-C	HCL to pH < 2	OK
1205227002-D	HCL to pH < 2	OK
1205227002-E	HCL to pH < 2	OK
1205227003-A	HCL to pH < 2	OK
1205227003-B	HCL to pH < 2	OK
1205227003-C	HCL to pH < 2	OK
1205227003-D	HCL to pH < 2	OK
1205227003-E	HCL to pH < 2	OK
1205227004-A	HCL to pH < 2	OK
1205227004-B	HCL to pH < 2	OK
1205227004-C	HCL to pH < 2	OK
1205227004-D	HCL to pH < 2	OK
1205227004-E	HCL to pH < 2	OK
1205227005-A	HCL to pH < 2	OK
1205227005-B	HCL to pH < 2	OK
1205227005-C	HCL to pH < 2	OK
1205227005-D	HCL to pH < 2	OK
1205227005-E	HCL to pH < 2	OK
1205227006-A	HCL to pH < 2	OK
1205227006-B	HCL to pH < 2	OK
1205227006-C	HCL to pH < 2	OK
1205227006-D	HCL to pH < 2	OK
1205227006-E	HCL to pH < 2	OK
1205227007-A	HCL to pH < 2	OK
1205227007-B	HCL to pH < 2	OK
1205227007-C	HCL to pH < 2	OK
1205227007-D	HCL to pH < 2	OK
1205227007-E	HCL to pH < 2	OK
1205227008-A	HCL to pH < 2	OK
1205227008-B	HCL to pH < 2	OK
1205227008-C	HCL to pH < 2	OK
1205227008-D	HCL to pH < 2	OK
1205227008-E	HCL to pH < 2	OK
1205227009-A	HCL to pH < 2	OK
1205227009-B	HCL to pH < 2	OK
1205227009-C	HCL to pH < 2	OK
1205227009-D	HCL to pH < 2	OK
1205227009-E	HCL to pH < 2	OK
1205227010-A	HCL to pH < 2	OK
1205227010-B	HCL to pH < 2	OK
1205227010-C	HCL to pH < 2	OK
1205227010-D	HCL to pH < 2	OK
1205227010-E	HCL to pH < 2	OK
1205227011-A	HCL to pH < 2	OK
1205227011-B	HCL to pH < 2	OK
1205227011-C	HCL to pH < 2	OK
1205227011-D	HCL to pH < 2	OK
1205227011-E	HCL to pH < 2	OK
1205227012-A	HCL to pH < 2	OK
1205227012-B	HCL to pH < 2	OK
1205227012-C	HCL to pH < 2	OK
1205227012-D	HCL to pH < 2	OK
1205227012-E	HCL to pH < 2	OK
1205227013-A	HCL to pH < 2	OK
1205227013-B	HCL to pH < 2	OK
1205227013-C	HCL to pH < 2	OK
1205227013-D	HCL to pH < 2	OK
1205227013-E	HCL to pH < 2	OK
1205227014-A	HCL to pH < 2	OK
1205227014-B	HCL to pH < 2	OK
1205227014-C	HCL to pH < 2	OK

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

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

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

LABORATORY DATA REVIEW CHECKLIST

Completed by: Alec Rizzo
Title: Former Markair Facility
Date: March 2021

Consultant Firm: Shannon & Wilson, Inc.

Laboratory Name: SGS North America Inc.
Laboratory Report Number: 1205227
Laboratory Report Date: 10/15/2020

Contaminated Site Name: MarkAir King Salmon
ADEC File Number: 2569.38.009
Hazard Identification Number: 1879

(**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 0.3° 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: *Data quality/usability are considered unaffected; 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:

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: *Data quality/usability are unaffected.*

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:

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 is greater than the ADEC cleanup level.*

e. Data quality or usability affected?
Comments: *There is a potential that this target analyte is present at a concentration in the associated samples greater than the ADEC cleanup level, but less than the LOQ; however, this analyte was not detected at estimated concentrations in the project samples.*

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: *The method blank for Samples B1MW, B2MW, B3MW, B7MW, B12MW, B13MW, B16MW, B17MW, B18MW, B19MW, B20MW, B21MW, B28MW contained an estimated concentration of DRO (0.267 J mg/kg) less than the LOQ.*

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

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?
Yes / No / NA
Comments: *Although less than the LOQ, samples are flagged "B" in Table 2 when the reported sample concentration is within 10x the reported method blank concentration. Estimated concentrations of DRO were detected in Samples B12MW, B13MW, and B19MW at levels less than the LOQ; therefore, the sample concentrations are reported as non-detect at the LOQ. The concentrations of DRO detected in Samples B16MW, B20MW, and B21MW are greater than the LOQ but less than 5 times the blank concentration, therefore the results are flagged "B", and reported as non-detect at the detected concentration. The concentrations of DRO detected in Samples B3MW and B7MW are within 5x the method blank detection. These results are consistent with historical sample results. Therefore, based on professional judgment the results are flagged "B" and reported at the detected concentration. The remaining DRO concentrations are greater than 10 times the blank concentration, therefore the results are reported at the detected concentration.*

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: *Only organic analyses were requested with this work order.*

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*: 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: *Only organic analyses were requested with this work order.*

iii. Accuracy – All percent recoveries (%R) reported and *w*ithin 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 MS/MSD, 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*: 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? **Yes / No / NA**
Comments: *One water trip blank (WTB) was submitted to the laboratory with the project samples.*

ii. Is the cooler used to transport the trip blank and volatile samples clearly indicated on the COC? **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: *Duplicate sample B28MW (duplicate of B18MW) was submitted to the laboratory.*

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: *The RPDs were within the specified DQOs.*

iv. Data quality or usability affected?
Comments: *See above.*

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. <u>Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)</u>

a. Defined and appropriate? **Yes / No / NA**
Comments: *A key is provided on Page 3 of the SGS Laboratory Report.*

ATTACHMENT 4

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

Attachment to and part of Report 104675-001

Date: March 2021
To: ADEC

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