September 21, 2020

Mr. Grant Lidren
Alaska Department of Environmental Conservation-SPAR
555 Cordova St.
Anchorage, AK 99501

RE: 2020 Groundwater Monitoring at the ML&P Transformer Shop; 1130 E. First Ave., Anchorage, Alaska (Hazard ID: 23842)

Dear Mr. Lidren:

This report presents the results of groundwater monitoring conducted in 2020 at Municipal Light and Power's (ML&P) Transformer Shop Site at 1130 E. First Avenue (formerly 1201 E. Third Ave.), in Anchorage, Alaska. The Site is listed with the Alaska Department of Environmental Conservation (ADEC) as File # 2100.26.302, Record Key # 90210001102, and Hazard ID 23842. Past work conducted at this site has identified petroleum hydrocarbon concentrations in excess of Alaska Department of Environmental Conservation (ADEC) cleanup levels for groundwater. The petroleum hydrocarbon contamination in the groundwater is attributed to leaking underground storage tanks that were removed in 1989. Groundwater monitoring has been conducted at the Site since 2000 at least annually up to 2016 and then biannually starting in 20018. All of the groundwater monitoring wells are flush-mounted and located in an asphalt paved lot adjacent to the Transformer Shop Building (Figures 1 and 2).

In November 2018, a vapor intrusion assessment of the indoor air quality in the Transformer Shop Building was conducted in accordance with an ADEC approved Work Plan. The measured concentration of compounds in the indoor air in the building did not exceed the ADEC vapor intrusion target levels for commercial or residential use. Based on the air sample results, it was concluded the vapor intrusion pathway is incomplete and not a concern at the Site (SLR 2018c).

2020 Groundwater Sampling

The sampling activities were conducted by International Corporation (SLR) in accordance with the ADEC 2018 Work Plan Addendum (SLR, 2018a) which is an addendum to the 2002 Work Plan (ML&P, 2002). SLR personnel collected groundwater samples at four monitoring wells (MW-5, MW-6, MW-7, and MW-9) on June 10 and 12, 2020. The sampling effort was completed by Nick Wells and Francesca Risse, who meet the criteria of ADEC-qualified environmental professionals per 18 AAC 75.333. A photograph log is included documenting the site conditions during the sampling event (Appendix A). Groundwater sampling forms documenting the sampling of the wells are included in Appendix B of this report.

Prior to the collection of the groundwater samples, the water levels in all wells were measured using an electronic water level indicator. At MW-6 and MW-7, groundwater samples were collected using the low-flow sampling method using a peristaltic pump. The low-flow sampling method has been used for the annual monitoring at the site since 2011 and consists of purging at a low flow rate (between 0.05 and 0.5 liters per minute [L/min]), while maintaining a drawdown of less than 0.3 feet, if possible. While purging, up to six water quality parameters are measured (temperature, pH, conductivity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity) at three to five-minute intervals. Water quality parameters are considered stable when three consecutive readings of at least three parameters (or four if temperature is used) are within:

- ± 3% for temperature (minimum of ± 0.2 º C),
- ± 0.1 for pH,
- ± 3% for conductivity,
- ± 10 mv for ORP,
- ± 10% for DO, and
- ± 10% for turbidity.

MW-6 and MW-7 sustained near constant water levels during purging, at flow rates of 0.2 to 0.3 L/min. MW-5 was sampled by the conventional sampling method using a peristaltic pump. MW-5 was intended to be sampled by low-flow sampling, but drawdown exceeded 0.3 feet, so three casing volumes, equaling 4.25 gallons, were purged prior to sampling. While purging MW-5, MW-6, and MW-7, water quality parameters were measured using a YSI 556 multi-parameter instrument. Turbidity was measured quantitatively using a turbidity meter. Stability criteria were met for all wells except MW-9. Water level data and final water quality parameters are presented in Table 1. Purge water generated during sampling activities was placed in labeled containers and disposed of by ML&P following the receipt of analytical results.

MW-9 has typically been a poor yielding well and has repeatedly gone dry when purging and attempting to achieve stable parameters, even at very low flow rates. Since 2015, the standard sampling protocol for MW-9 has been to purge the well dry and collect samples at least 24 hours later. On June 9, 2020, MW-9 was intentionally purged dry without attempting to achieve stable parameters, generating approximately 4.5 gallons of purge water. The water in the well was as allowed to recover for approximately 68 hours and analytical samples were collected on June 12 without additional purging. At that time, the water level well had recovered over 80%. Water quality parameters were measured on June 12 concurrent with sampling.

Laboratory Analyses

Groundwater samples were collected from the four monitoring wells, including a duplicate sample from well MW-9, and submitted to SGS North America in Anchorage using chain-of-custody procedures. Groundwater samples were analyzed for diesel range organics (DRO) by AK Method (AK) 102, GRO by AK101, and benzene, toluene, ethylbenzene, and xylenes (BTEX) by United States Environmental Protection Agency (USEPA) Method SW8260D. In addition, samples collected at MW-9 were analyzed for the full list of Volatile Organic Compounds (VOC) by USEPA SW8260D and polycyclic aromatic hydrocarbons (PAH) by USEPA 8270D LV. The full-list VOCs and PAHs were added to the analytical suite in 2018 at the request of ADEC and were approved in the subsequent Work Plan Addendum (SLR, 2018a).

Analytical data was reviewed for consistency with the *ADEC Technical Memorandum, Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling* (ADEC, 2017a). Appendices C, D, and E contain a Data Quality Assessment (DQA), ADEC Laboratory Data Review Checklist, and the laboratory analytical data package, respectively. Based on the DQA, the data were considered to be of good quality and acceptable for use with the noted qualifications. No data were rejected.

Analytical Results

The 2020 analytical results are provided in Table 2 and Figure 2. Table 3 provides a summary of current and historical analytical results for DRO, GRO, benzene, and total BTEX analytes. The results were screened against the current ADEC ground water cleanup levels defined in 18 AAC 75.345, Table C (ADEC, 2018). Of the four wells sampled, monitoring well MW-9 was the only well with detected concentrations of analytes above applicable groundwater cleanup levels.

Groundwater cleanup levels at MW-9 were exceeded for GRO, DRO, benzene, ethylbenzene, total xylenes, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, 1,2-Dichloroethane and naphthalene, as shown on Table 2 and summarized below:

- GRO was detected at 11 milligrams per liter (mg/L) in the primary sample and 9.53 mg/L in the duplicate, exceeding the groundwater cleanup level of 2.2 mg/L;
- DRO was 3.03 mg/L in the primary sample and 2.71 mg/L in the duplicate, exceeding the groundwater cleanup level of 1.5 mg/L;
- Benzene was 4.31 mg/L in the primary sample and 3.25 mg/L in the duplicate, exceeding the groundwater cleanup level of 0.0046 mg/L;
- Ethylbenzene was detected at 0.246 mg/L in the primary sample and 0.11 mg/L in the duplicate, exceeding the groundwater cleanup level of 0.015 mg/L;
- Total xylenes were 1.01 mg/L in the primary sample and 0.89 mg/L in the duplicate, exceeding the groundwater cleanup level of 0.19 mg/L.
- 1,2,4-Trimethylbenzene was 0.344 mg/L in the primary sample and 0.304 mg/L in the duplicate, exceeding the groundwater cleanup level of 0.056 mg/L;
- 1,3,5-Trimethylbenzene was 0.0764 mg/L in the primary sample and 0.0819 mg/L in the duplicate, exceeding the groundwater cleanup level of 0.06 mg/L;
- 1,2-Dichloroethane (1,2-DCA) was 0.0362 mg/L in the primary sample and 0.0298 mg/L in the duplicate, exceeding the groundwater cleanup level of 0.0017 mg/L;
- Naphthalene was 0.103 mg/L in the primary sample and 0.0958 mg/L in the duplicate when analyzed by SW8260D, and was 0.0177 mg/L in the primary sample and 0.00905 mg/L in the duplicate when analyzed by SW8270D, which were all greater than the groundwater cleanup level of 0.0017 mg/L.

In MW-9, all sample results for perchloroethylene (PCE) and related daughter products were below detection limits, except for 1,2-Dichloroethane as listed above. However, the detection limits for Trichloroethylene (TCE) and vinyl chloride were above their respective groundwater cleanup levels. PCE daughter products are considered to be TCE, 1,1,1-trichloroethane (1,1,1-TCA), 1,1,2-TCA, 1,1-dichloroethane (1,1-DCA), 1,2-DCA, 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride. 1,2-Dichloroethane also exceeded

groundwater cleanup levels in 2018, with a concentration of 0.00965 Q in the primary sample and 0.00663 mg/l in the duplicate (SLR, 2018b).

Samples from the down gradient monitoring wells MW-5, MW-6, and MW-7 had contaminant concentrations well below groundwater cleanup levels. Downgradient wells MW-6, and MW-7 contained low-level detections of DRO (concentrations were between the detection limit (DL) and limit of quantitation (LOQ)). This is consistent with the historical dataset (Table 3) and indicates that the plume of petroleum hydrocarbon-impacted groundwater is localized around MW-9. MW-9 is located where the former USTs were removed and is the presumed source area. MW-6 and MW-7 are located less than 150 feet down gradient from MW-9 and indicate essentially no petroleum hydrocarbon-impacted groundwater at these locations. MW-9 has historically contained the highest concentrations of BTEX, GRO and DRO, with the three down gradient wells consistently showing no detections or trace detections well below groundwater cleanup levels (Table 3).

A plot of historical data from monitoring well MW-9 shows the long-term trend of petroleum hydrocarbon concentrations (Figure 3). A primary and a duplicate sample have been collected at MW-9 beginning in 2011 and at each sampling event thereafter. The higher of the two results (primary or duplicate) are plotted on the figure giving is conservative (high) biased. As illustrated by the graph, between 2000 and 2020 the overall trend has been a decrease in petroleum hydrocarbon concentrations with time. In 2003, a large increase in DRO may have been the result of free product in the sample, which was occasionally observed in the well during that period. Since 2004 the groundwater concentrations have been relatively steady state, with relatively minor fluctuations between sample events.

The changes in sampling protocol may account for a portion of the fluctuations in the data set. In 2011 the sampling method was changed from purging three volumes with a bailer prior to sampling, to low-flow sampling with a peristaltic pump. In 2013 and 2014, samples were collected without prior purging of the well. As noted, since 2015 the sampling protocol for MW-9 has been to purge the well dry and collect the sample approximately 24 -72 hours later.

Groundwater data was also compared against ADEC's vapor intrusion target level for the vapor intrusion pathway for commercial site use as defined by *Vapor Intrusion Guidance for Contaminated Sites* (ADEC, 2017b).The target levels for benzene, ethylbenzene, and 1,2,4-Trimethylbenzene were exceeded in the water sample from MW-9, as shown on Table 2. However, the vapor intrusion assessment of the adjacent Transformer Shop Building concluded the vapor intrusion pathway is incomplete and not a concern at the site (SLR 2018c).

Conclusions

The results from groundwater monitoring at the Transformer Shop Site in 2020 indicate that petroleum hydrocarbons in the groundwater have decreased but still exceed ADEC groundwater cleanup levels at MW-9. The extent of petroleum hydrocarbon impacted groundwater is localized around MW-9, the presumed source area. The long-term trend based on the cumulative data set (2000 to 2020) indicates that the petroleum hydrocarbon concentrations initially decreased but have remained relatively steady state since 2004. A pronounced trend since 2004 is not evident. However, natural attenuation of the petroleum hydrocarbons is presumably occurring at a slow rate. There appears to be minimal groundwater movement in the immediate area of the plume,

as evidenced by the poor recharge in MW-9 and downgradient sample results (non-detected concentrations of GRO and BTEX, and trace detection of DRO).

In accordance with the January 10, 2019 letter from ADEC to ML&P (ADEC File: 2404.26.302) and related correspondence, the next monitoring event, scheduled for 2022, will include analysis of GRO by AK101, DRO by AK102, residual range organics (RRO) by AK103, and full suite VOCs by SW8260D for all four monitoring wells. PAHs by SW8270 are no longer required for any monitoring wells and will not be sampled.

If you have any questions or concerns, please contact Bret Berglund (SLR, 907-563-2128) or Yelena Saville (ML&P, 907-263-5273).

Sincerely,

Nicholas Wells
Project Engineer

Bret Berglund
Project Manager, C.P.G.

CC: Yelena Saville, ML&P

References

Alaska Department of Environmental Conservation (ADEC), 2018. 18 AAC 75, Oil and Other Hazardous Substances Pollution Control, as amended through October 27, 2018.

ADEC, 2017a. ADEC Technical Memorandum, Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling. March.

ADEC, 2017b. Vapor Intrusion Guidance for Contaminated Sites. November.

Municipal Light and Power (ML&P) 2002. Work Plan for Groundwater Monitoring at 1201 E. 3rd Ave. Anchorage; File #L69.07, Fac ID Fac ID #1420, Event ID #133, Reckey # 90210001102. August 26. Note: The site address is now referred to as 1130 E. First Avenue.

SLR International Corporation (SLR). 2018a. Work Plan Addendum for Groundwater Monitoring at the ML&P Transformer Shop; 1130 E. First Ave., Anchorage, Alaska (Hazard ID: 23842). July 9.

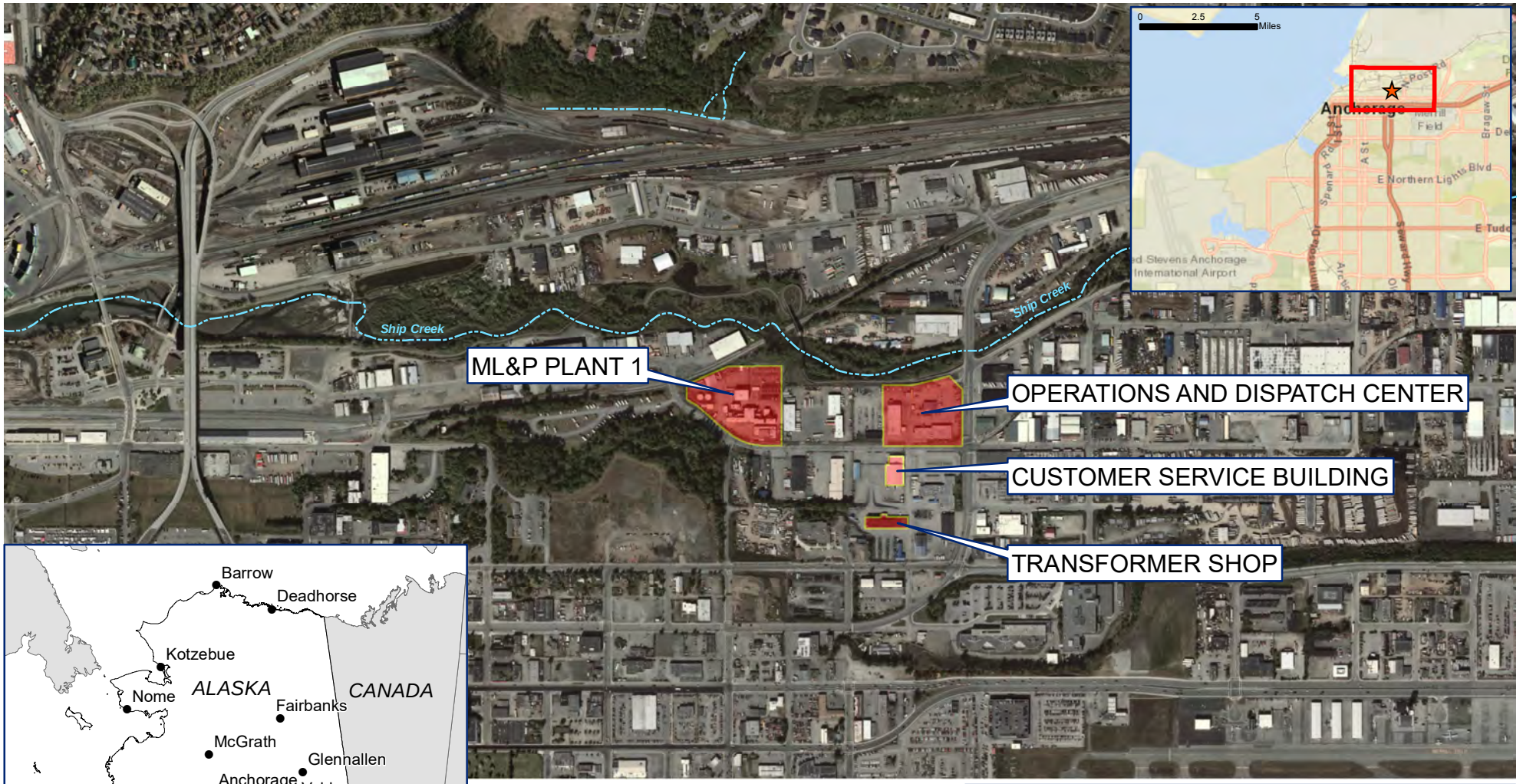
SLR. 2018b. 2018 Groundwater Monitoring at the ML&P Transformer Shop; 1130 E. First Ave., Anchorage, Alaska (Hazard ID: 23842). October 8, 2018.

SLR. 2018c. Vapor Intrusion Assessment Report. ML&P Transformer Shop; Anchorage, Alaska. December 27.

<u>Figures</u>

<u>Tables</u>

<u>Appendices</u>



N

0 275 550 1,100 1,650 2,200 Feet

WHEN PLOTTED AT 8.5 x 11 PAGE SIZE

THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY.
ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.

SLR

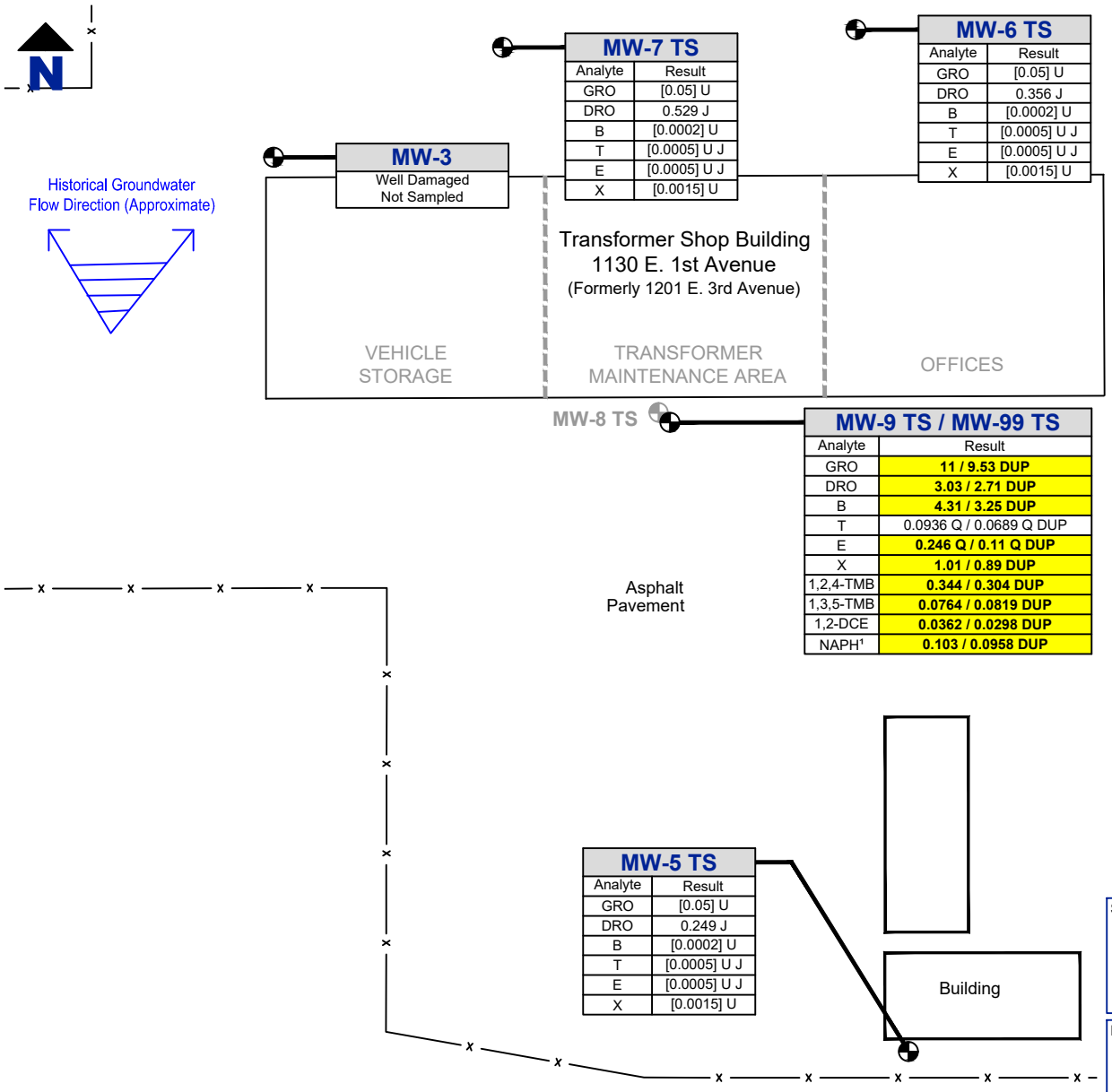
Site
TRANSFORMER SHOP
MUNICIPAL LIGHT AND POWER
1130 EAST 1ST AVENUE
ANCHORAGE, ALASKA

Report
2020 GROUNDWATER SAMPLING

Drawing
SITE VICINITY MAP

Drawing	August 2020	Scale	1 in = 880 feet
File Name	F1 Transformer Shop Bldg_18.mxd	Project No.	105.00528.18001

Fig. No. 1



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Legend

- GROUNDWATER MONITORING WELL
- GROUNDWATER MONITORING WELL - SAMPLING DISCONTINUED IN 2003
- CHAIN-LINK FENCE

Sampling Results Guidelines

AAC	ALASKA ADMINISTRATIVE CODE
ADEC	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DRO	DIESEL RANGE ORGANICS
GRO	GASOLINE RANGE ORGANICS
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
1,2,4-TMB	1,2,4-TRIMETHYLBENZENE
1,3,5-TMB	1,3,5-TRIMETHYLBENZENE
1,2-DCE	1,2-DICHLOROETHANE
NAPH	NAPHTHALENE
DUP	DUPLICATE SAMPLE
J	ESTIMATED CONCENTRATION BETWEEN THE LOQ AND DL.
Q	THE RESULT IS ESTIMATED, DUE TO A LABORATORY QUALITY CONTROL FAILURE OR A MATRIX EFFECT. WHERE APPLICABLE, A "+" OR "-" WAS APPENDED TO INDICATE A HIGH OR LOW BIAS.
U	NONDETECT, LOD IS SHOWN IN BRACKETS
UJ	THE ANALYTE WAS NOT DETECTED. THE REPORTED QUANTITATION LIMIT IS APPROXIMATE AND MAY BE INACCURATE OR IMPRECISE.
LOD	LIMIT OF DETECTION
LOQ	LIMIT OF QUANTITATION
DL	DETECTION LIMIT

0.00249 SAMPLE HAS **EXCEEDED** ADEC CLEANUP LEVEL LISTED IN 18 AAC 75.345 TABLE C [OCTOBER 2018]

0.005 SAMPLE **DOES NOT EXCEED** ADEC CLEANUP LEVEL LISTED IN 18 AAC 75.345 TABLE C [OCTOBER 2018]

[1] NAPTHALENE WAS ANALYZED BY BOTH SW8260D AND SW8270D LV. ONLY THE HIGHEST CONCENTRATIONS ARE INCLUDED IN THIS FIGURE.

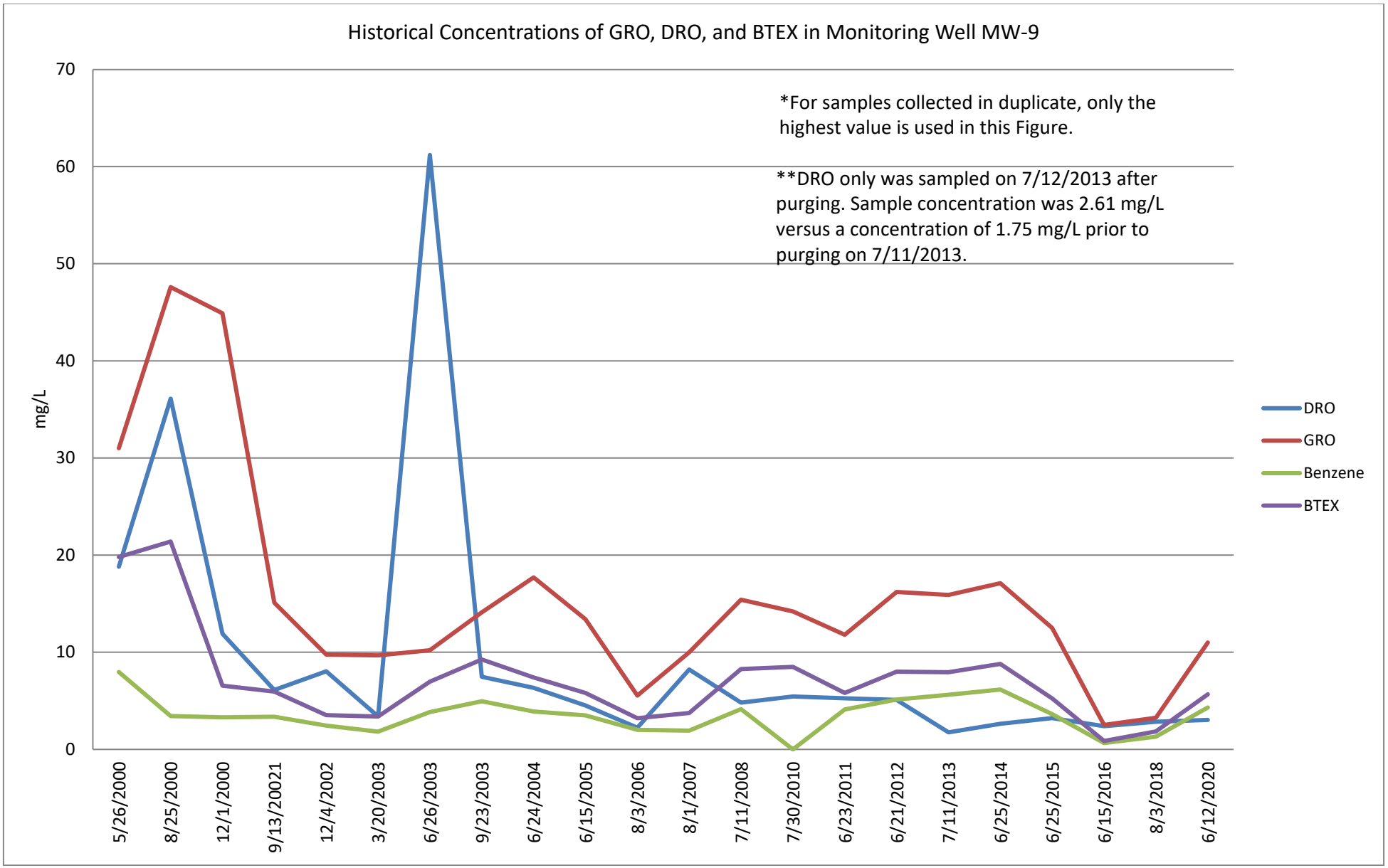
Site
TRANSFORMER SHOP
ML&P 1130 E. 1ST AVENUE
(FORMERLY 1201 E. 3RD AVENUE)
ANCHORAGE, ALASKA

Report
2020 GROUNDWATER SAMPLING

Drawing
2020 GROUNDWATER SAMPLING RESULTS

Date	September 2020	Scale	1" = 50 Feet
File Name	F2 Trans Shop GW Results_20	Project No.	105.00528.18001

Fig. No. 2



SLR

Figure 3 – Historical Concentrations in MW-9

ML&P Transformer Shop
2020 Groundwater Monitoring Report

Project No.: 105.00528.18001

TABLE 1 - 2020 WATER SAMPLING LOG
ML&P TRANSFORMER SHOP

Well Number[1,2,3]	MW-5 TS	MW-6 TS	MW-7 TS	MW-9 TS
Water Level & Well Purging Data				
Date Water Level Measured	6/10/2020	6/10/2020	6/10/2020	6/9/2020
Time Water Level Measured	9:20	12:00	10:55	12:55
TOC Elevation, ft	Unknown	51.51	49.23	51.23
Depth to Water Below TOC, ft	4.96	15.34	19.40	4.22
Water Level Elevation, ft	NC	36.17	29.83	47.01
Depth of Well Below Top of Casing, ft	13.64	20.61	20.68	8.56
Water Column in Well, ft	8.68	5.27	1.28	4.34
Diameter of Well Casing, inch	2	2	2	2
Gallons per Foot	0.163	0.163	0.163	0.163
Gallons in Well	1.41	0.86	0.21	0.71
Total Gallons Purged (Low Flow)	4.3	2.0	2.5	4.0
Sampling/Water Parameters				
Date Sampled	6/10/2020	6/10/2020	6/10/2020	6/12/2020
Time Sampled	10:28	12:45	11:40	9:40
Temperature, C	6.82	7.90	8.21	10.64
Specific Conductance, µS/cm	647	706	1141	971
Turbidity (NTU)	4.96	9.06	6.59	4.11
pH	8.98	10.44	9.42	7.19
Dissolved Oxygen, mg/L	9.49	1.10	1.70	4.56
Sample Number	MW-5 TS	MW-6 TS	MW-7 TS	MW-9 TS, MW-99 TS (duplicate)

Abbreviations:

C Celsius
ft feet
mg/L milligrams per liter
NC Not calculated (TOC elevation not known).
µS/cm microsiemens per centimeter
TOC Top of casing

Notes

1 Sampled By SLR: Nick Wells and Francesca Risse
2 All wells were purged and sampled using a peristaltic pump. MW-5 was sampled by the conventional sampling method, while MW-6 and MW-7 were sampled by the low-flow method. MW-9 was purged dry on 6/9/2020, and was sampled just under 72 hours later on 6/12/2020 without additional purging. Water level recovered 80%.
3 All wells are flush-mounted in paved areas surrounding the Transformer Shop. Top of casing well elevation has not been surveyed since 2005, or longer, and is considered approximate.

Table 2 - Groundwater Sampling Analytical Results

Compound in milligrams per Liter (mg/L)	Screening Criteria		Sample Location[3]					Trip Blank
	18 AAC 75, Table C Groundwater Cleanup Level (mg/L)[1]	Vapor Intrusion Target Level for Groundwater, Commercial Site Use[2] (mg/L)	MW-5TS 10-Jun-20 1202600001	MW-6TS 10-Jun-20 1202600003	MW-7TS 10-Jun-20 1202600002	**Primary:** MW-9TS 12-Jun-20 1202600004	**Duplicate:** MW-99TS 12-Jun-20 1202600005	Trip Blank 10-Jun-20 1202600006
			Conc.[4]	Conc.[4]	Conc.[4]	Conc.[4]	Conc.[4]	Conc.[4]
Fuels (AK101 and 102)								
Gasoline Range Organics	2.2	--	[0.05] U	[0.05] U	[0.05] U	**11**	**9.53**	[0.05] U
Diesel Range Organics	1.5	--	0.249 J	0.356 J	0.529 J	**3.03**	**2.71**	--
VOCs (SW8260D)								
1,1,1,2-Tetrachloroethane	0.0057	0.16	--	--	--	[0.0125] U	[0.0125] U	[0.00025] U
1,1,1-Trichloroethane	8	31	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,1,2,2-Tetrachloroethane	0.00076	0.14	--	--	--	[0.0125] U	[0.0125] U	[0.00025] U
1,1,2-Trichloroethane	0.00041	0.026	--	--	--	[0.01] U	[0.01] U	[0.0002] U
1,1-Dichloroethane	0.028	0.33	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,1-Dichloroethene	0.28	0.82	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,1-Dichloropropene	--	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,2,3-Trichlorobenzene	0.007	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,2,3-Trichloropropane	0.0000075	0.094	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,2,4-Trichlorobenzene	0.004	0.15	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,2,4-Trimethylbenzene[b]	0.056	0.12	--	--	--	**0.344**	**0.304**	[0.0005] U
1,2-Dibromo-3-chloropropane	--	--	--	--	--	[0.25] U	[0.25] U	[0.005] U
1,2-Dibromoethane	0.000075	0.0077	--	--	--	[0.00188] U	[0.00188] U	[0.0000375] U
1,2-Dichlorobenzene	0.3	11	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,2-Dichloroethane	0.0017	0.098	--	--	--	**0.0362**	**0.0298**	[0.00025] U
1,2-Dichloropropane	0.0082	0.11	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,3,5-Trimethylbenzene[b]	0.06	--	--	--	--	**0.0764**	**0.0819**	[0.0005] U
1,3-Dichlorobenzene	0.3	8.1	--	--	--	[0.025] U	[0.025] U	[0.0005] U
1,3-Dichloropropane	--	--	--	--	--	[0.0125] U	[0.0125] U	[0.00025] U
1,4-Dichlorobenzene	0.0048	0.11	--	--	--	[0.0125] U	[0.0125] U	[0.00025] U
2,2-Dichloropropane	--	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
2-Butanone (MEK)	5.6	9400	--	--	--	[0.25] U	[0.25] U	[0.005] U
2-Chlorotoluene	--	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
2-Hexanone	0.038	34	--	--	--	[0.25] U	[0.25] U	[0.005] U
4-Chlorotoluene	--	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
4-Isopropyltoluene	--	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
4-Methyl-2-pentanone (MIBK)	6.3	2300	--	--	--	[0.25] U	[0.25] U	[0.005] U
Benzene[b]	0.0046	0.069	[0.0002] U	[0.0002] U	[0.0002] U	**4.31**	**3.25**	[0.0002] U
Bromobenzene	0.062	2.6	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Bromochloromethane	--	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Bromodichloromethane	0.0013	0.038	--	--	--	[0.0125] U	[0.0125] U	[0.00025] U
Bromoform	0.033	5.1	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Bromomethane	0.0075	0.073	--	--	--	[0.125] U	[0.125] U	[0.0025] U
Carbon disulfide	0.81	5.2	--	--	--	[0.25] U	[0.25] U	[0.005] U
Carbon tetrachloride	0.0046	0.018	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Chlorobenzene	0.078	1.7	--	--	--	[0.0125] U	[0.0125] U	[0.00025] U
Chloroethane	21.0	97.0	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Chloroform	0.0022	0.036	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Chloromethane	0.19	1.1	--	--	--	[0.025] U	[0.025] U	[0.0005] U
cis-1,2-Dichloroethene	0.036	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
cis-1,3-Dichloropropene	0.0047	--	--	--	--	[0.0125] U	[0.0125] U	[0.00025] U
Dibromochloromethane	0.0087	--	--	--	--	[0.0125] U	[0.0125] U	[0.00025] U
Dibromomethane	0.0083	0.52	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Dichlorodifluoromethane	0.2	0.031	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Ethylbenzene[b]	0.015	0.15	[0.0005] UJ	[0.0005] UJ	[0.0005] UJ	**0.246 Q**	**0.11 Q**	[0.0005] U
Freon-113	10	--	--	--	--	[0.25] U	[0.25] U	[0.005] U
Hexachlorobutadiene	0.0014	0.013	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Isopropylbenzene (Cumene)	0.45	3.7	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Methylene chloride	0.11	20	--	--	--	[0.25] U	[0.25] U	[0.005] U
Methyl-t-butyl ether	0.14	20	--	--	--	[0.25] U	[0.25] U	[0.005] U
Naphthalene[c]	0.0017	0.2	--	--	--	**0.103**	**0.0958**	[0.0005] U
n-Butylbenzene[b]	1.00	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
n-Propylbenzene[b]	0.66	10	--	--	--	[0.025] U	[0.025] U	[0.0005] U
o-Xylene	--	--	[0.0005] U	[0.0005] U	[0.0005] U	0.0307 J	0.0321 J	[0.0005] U
P & M -Xylene	--	--	[0.001] U	[0.001] U	[0.001] U	0.982	0.858	[0.001] U
sec-Butylbenzene[b]	2.00	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Styrene	1.2	39	--	--	--	[0.025] U	[0.025] U	[0.0005] U
tert-Butylbenzene[b]	0.69	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Tetrachloroethene	0.041	0.24	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Toluene[b]	1.1	81	[0.0005] UJ	[0.0005] UJ	[0.0005] UJ	0.0936 Q	0.0689 Q	[0.0005] U
trans-1,2-Dichloroethene	0.36	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
trans-1,3-Dichloropropene	0.0047	0.21	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Trichloroethene	0.0028	0.021	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Trichlorofluoromethane	5.2	--	--	--	--	[0.025] U	[0.025] U	[0.0005] U
Vinyl acetate	0.41	42	--	--	--	[0.25] U	[0.25] U	[0.005] U
Vinyl chloride	0.00019	0.025	--	--	--	[0.00375] U	[0.00375] U	[0.000075] U
Xylenes (total)[5,6]	0.19	1.6	[0.0015] U	[0.0015] U	[0.0015] U	**1.01**	**0.89**	[0.0015] U

Compound in milligrams per Liter (mg/L)	Screening Criteria		Sample Location[3]					Trip Blank
	18 AAC 75, Table C Groundwater Cleanup Level (mg/L)[1]	Vapor Intrusion Target Level for Groundwater, Commercial Site Use[2] (mg/L)	MW-5TS 10-Jun-20 1202600001	MW-6TS 10-Jun-20 1202600003	MW-7TS 10-Jun-20 1202600002	**Primary:** MW-9TS 12-Jun-20 1202600004	**Duplicate:** MW-99TS 12-Jun-20 1202600005	Trip Blank 10-Jun-20 1202600006
			Conc.[4]	Conc.[4]	Conc.[4]	Conc.[4]	Conc.[4]	Conc.[4]
PAH SIM (SW8270D LV)								
1-Methylnaphthalene[6]	0.011	--	--	--	--	0.0057 Q	0.00302 Q	--
2-Methylnaphthalene[6]	0.036	--	--	--	--	0.00126	0.00128	--
Acenaphthene[6]	0.53	--	--	--	--	0.000224 Q	0.000132 Q	--
Acenaphthylene	0.26	--	--	--	--	[0.0000252] U	[0.0000259] U	--
Anthracene	0.043	--	--	--	--	[0.0000252] U	[0.0000259] U	--
Benzo(a)Anthracene	0.0003	--	--	--	--	[0.0000252] U	[0.0000259] U	--
Benzo[a]pyrene	0.00025	--	--	--	--	[0.0000101] U	[0.0000104] U	--
Benzo[b]Fluoranthene	0.0025	--	--	--	--	[0.0000252] U	[0.0000259] U	--
Benzo[g,h,i]perylene	0.00026	--	--	--	--	[0.0000252] U	[0.0000259] U	--
Benzo[k]fluoranthene	0.0008	--	--	--	--	[0.0000252] U	[0.0000259] U	--
Chrysene	0.002	--	--	--	--	[0.0000252] U	[0.0000259] U	--
Dibenzo[a,h]anthracene	0.00025	--	--	--	--	[0.0000101] U	[0.0000104] U	--
Fluoranthene	0.26	--	--	--	--	[0.0000252] UJ	0.000062 Q	--
Fluorene[6]	0.29	--	--	--	--	0.00033 Q	0.000152 Q	--
Indeno[1,2,3-c,d] pyrene	0.00019		--	--	--	[0.0000252] U	[0.0000259] U	--
Naphthalene[6]	0.0017	0.2	--	--	--	**0.0177 Q**	**0.00905 Q**	--
Phenanthrene[6]	0.17	--	--	--	--	[0.0000252] U	[0.0000259] U	--
Pyrene	0.12	--	--	--	--	[0.0000252] U	[0.0000259] U	--

Yellow and Bold	Value exceeds Method Two cleanup level
Shaded green	Un-detectable result with the LOD is above ADEC cleanup level.
Shaded Blue	Groundwater result for this analyte exceeds the ADEC vapor intrusion target level for groundwater (commercial site use).

Notes:

1 - The cleanup level corresponds to those listed in 18 AAC 75.345, Method Two, Table C, Groundwater Cleanup Levels (ADEC, October 27, 2018).

2 - The level corresponds to the target level listed in ADEC Vapor Intrusion Guidance for Contaminated Sites (January 2017), Appendix G.

3 - The sample type, field sample identification number, date collected, and laboratory sample identification number are provided.

4 - For detected results, the sample result is listed in this column. For undetectable results, the Limit of Detection (LOD) is listed in brackets in this column. Associated flag(s) are shown to the right.

5 - Total values were the summation of detected compounds only. If compounds were not detected, then the highest LOD was listed.

6 - The ADEC Vapor Intrusion Guidance for Contaminated Sites (January 2017), Appendix F, states these chemicals should be investigated as chemicals of potential concern for vapor intrusion when petroleum is present.

Data Flags

J	Estimated concentration between the LOQ and DL.
Q	The result is estimated, due to a laboratory quality control failure or a matrix effect. Where applicable, a "+" or "-" was appended to indicate a high or low bias.
U	Nondetect, LOD is shown in brackets.
UJ	The analyte was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Abbreviations

--	Not applicable or screening criteria does not exist for this compound	LOQ	limit of quantitation
AAC	Alaska Administrative Code	LV	low volume
ADEC	Alaska Department of Environmental Conservation	mg/L	milligrams per liter
AK	Alaska	PAH	polycyclic aromatic hydrocarbons
DL	detection limit	SIM	selective ion monitoring
LOD	limit of detection	VOCs	volatile organic compounds

TABLE 3 - HISTORICAL GROUNDWATER ANALYTICAL RESULTS
ML&P TRANSFORMER SHOP

Compound (mg/L)		DRO	GRO	Benzene	Total BTEX
October 2018 Cleanup Level (18 AAC 75.345, Table C)		**1.5**	**2.2**	**0.0046**	**--**
Monitoring Well	**Date[1]**				
MW-3	8/27/1998	0.206	--	--	--
	12/31/1998	0.669	--	--	--
	3/19/1999	ND [0.333]	--	--	--
	6/23/1999	0.427	--	--	--
	9/30/1999	**4.42**	--	--	--
	2/2/2000	ND [0.395]	ND [0.0900]	ND [0.00050]	--
	5/26/2000	0.700	ND [0.0900]	ND [0.00050]	--
	8/25/2000	0.622	ND [0.0900]	ND [0.00050]	0.0194
	12/1/2000	ND [0.326]	ND [0.0900]	ND [0.00050]	0.00303
	6/24/2004	ND [0.300]	ND [0.0900]	ND [0.00050]	ND
	6/15/2005	ND [0.337]	ND [0.0900]	ND [0.00050]	ND
	8/3/2006	0.465	ND [0.100]	ND [0.00050]	ND
	8/1/2007	ND [0.357]	ND [0.100]	ND [0.00050]	ND
	7/10/2008	0.495 B	ND [0.100]	ND [0.00050]	ND
	7/29/2010	ND [0.574]	ND [0.062]	ND [0.0003]	ND
	6/23/2011	ND [0.266]	ND [0.031]	0.00029 J	0.00029 J
	6/22/2012	ND [0.382]	ND [0.0620]	ND [0.0003]	ND
	7/12/2013	ND [0.360]	ND [0.0620]	ND [0.0003]	ND
	6/25/2014	Well damaged, not sampled.			
MW-5 (upgradient well)	7/16/2004	0.352	ND [0.0900]	ND [0.00050]	ND
	6/15/2005	ND [0.333]	ND [0.0900]	ND [0.00050]	ND
	8/2/2006	ND [0.370]	ND [0.100]	ND [0.00050]	ND
	8/1/2007	ND [0.328]	ND [0.100]	ND [0.00050]	ND
	7/11/2008	0.276 J, B	ND [0.100]	ND [0.00050]	ND
	7/29/2010	ND [0.526]	ND [0.062]	ND [0.0003]	ND
	6/22/2011	ND [0.266]	ND [0.031]	ND [0.00015]	ND
	6/22/2012	ND [0.392]	ND [0.0620]	0.00016 J	0.00016 J
	7/11/2013	0.236 J	ND [0.0620]	ND [0.0003]	ND
	6/25/2014	ND [0.308]	ND [0.0500]	ND [0.00025]	ND
	6/25/2015	0.423 J	ND [0.05]	ND [0.00025]	ND
	6/15/2016	ND [0.294]	ND [0.05]	ND [0.0002]	ND
	7/31/2018	0.208 J	ND [0.05]	ND [0.0002]	ND
	6/10/2020	0.249 J	ND [0.05]	ND [0.0002]	ND
MW-6	8/27/1998	0.282	--	--	--
	12/31/1998	0.759	--	--	--
	3/19/1999	1.21	--	--	--
	6/23/1999	**2.17**	--	--	--
	9/30/1999	1.43	--	--	--
	2/2/2000	0.419	ND [0.0900]	ND [0.00050]	ND
	5/26/2000	ND [0.674]	ND [0.0900]	ND [0.00050]	ND
	8/25/2000	ND [0.323]	ND [0.0900]	ND [0.00050]	ND
	12/1/2000	1.29	ND [0.0900]	ND [0.00050]	ND
	6/24/2004	ND [0.366]	ND [0.0900]	ND [0.00050]	ND
	6/15/2005	ND [0.333]	ND [0.0900]	ND [0.00050]	ND
	8/3/2006	ND [0.366]	ND [0.100]	ND [0.00050]	ND
	8/1/2007	0.519	ND [0.100]	ND [0.00050]	ND
	7/11/2008	0.407 B	ND [0.100]	ND [0.00050]	ND
	7/29/2010	ND [0.544]	ND [0.062]	ND [0.0003]	ND
	6/22/2011	ND [0.260]	ND [0.031] QN	ND [0.00015]	ND
	6/21/2012	ND [0.378]	ND [0.0620]	ND [0.0003]	ND
	7/12/2013	0.185 J	ND [0.0620]	ND [0.0003]	ND
	6/25/2014	0.189 J	ND [0.0500]	ND [0.00025]	ND
	6/25/2015	0.223 J	ND [0.05]	ND [0.00025]	ND
	6/15/2016	0.191 J	ND [0.05]	ND [0.0002]	ND
	7/31/2018	0.419 J	ND [0.05]	ND [0.0002]	ND
	6/10/2020	0.356 J	ND [0.05]	ND [0.0002]	ND

TABLE 3, Continued - HISTORICAL GROUNDWATER ANALYTICAL RESULTS
ML&P TRANSFORMER SHOP

Compound (mg/L)		DRO	GRO	Benzene	Total BTEX
Oct 2018 Cleanup Level (18 AAC 75.345, Table C)		**1.5**	**2.2**	**0.0046**	**--**
Monitoring Well	**Date**				
MW-7	8/27/1998	ND [0.104]	--	--	--
	12/31/1998	0.158	--	--	--
	3/19/1999	ND [0.309]	--	--	--
	6/23/1999	ND [0.297]	--	--	--
	9/30/1999	ND [0.319]	--	--	--
	2/2/2000	ND [0.357]	ND [0.0900]	ND [0.00050]	ND
	5/26/2000	ND [0.674]	ND [0.0900]	ND [0.00050]	ND
	8/25/2000	ND [0.333]	ND [0.0900]	ND [0.00050]	ND
	12/1/2000	ND [0.330]	ND [0.0900]	ND [0.00050]	ND
	6/24/2004	ND [0.361]	ND [0.0900]	ND [0.00050]	ND
	6/15/2005	ND [0.375]	ND [0.0900]	ND [0.00050]	ND
	8/3/2006	ND [0.368]	ND [0.100]	ND [0.00050]	ND
	8/1/2007	ND [0.321]	ND [0.100]	ND [0.00050]	ND
	7/11/2008	ND [0.621] B	ND [0.100]	ND [0.00050]	ND
	7/29/2010	ND [0.538]	ND [0.062]	ND [0.0003]	ND
	6/23/2011	ND [0.266]	ND [0.031]	0.00035 J	0.00035 J
	6/21/2012	ND [0.378]	ND [0.0620]	ND [0.0003]	ND
	7/11/2013	0.465 J	ND [0.0620]	ND [0.0003]	ND
	6/25/2014	0.211 J	ND [0.0500]	ND [0.00025]	ND
	6/25/2015	0.878	ND [0.05]	ND [0.00025]	ND
	6/15/2016	ND [0.3]	ND [0.05]	ND [0.0002]	0.00055 J
	7/31/2018	0.276 J	ND [0.05]	ND [0.0002]	ND
	6/10/2020	0.529 J	ND [0.05]	ND [0.0002]	ND
MW-8	6/23/1999	**7.53**	0.25	**0.103**	0.109
	9/30/1999	**5.34**	0.22	**0.0599**	0.0759
	2/2/2000	**12**	0.33	**0.172**	0.177
	5/26/2000	**4.73**	0.94	**0.473**	0.473
	9/13/2002[2]	**3.06**	0.464	**0.0158**	0.160
	12/4/2002	**2.31**	1.40	**0.00677**	0.449
	3/20/2003	**3.02**	1.04	**0.00489**	0.364
	6/26/2003	**4.78**	0.862	**0.726**	0.762
	9/23/2003	**2.37**	1.410	**0.019**	0.7762

TABLE 3, Continued - HISTORICAL GROUNDWATER ANALYTICAL RESULTS
ML&P TRANSFORMER SHOP

Compound (mg/L)		DRO	GRO	Benzene	Total BTEX
Oct 2018 Cleanup Level (18 AAC 75.345, Table C)		1.5	2.2	0.0046	--
Monitoring Well	**Date**				
MW-9[4]	5/26/2000	**18.8**	**31**	**7.97**	19.8
	8/25/2000	**36.1**	**47.6**	**3.42**	21.4
	12/1/2000	**11.92**	**44.9**	**3.3**	6.55
	9/13/2002[2]	**6.11**	**15.1**	**3.36**	5.94
	12/4/2002	**8.03**	**9.76**	**2.44**	3.52
	3/20/2003	**3.39**	**9.67**	**1.82**	3.38
	6/26/2003	**61.2**	**10.2**	**3.84**	6.97
	9/23/2003	**7.47**	**14.1**	**4.95**	9.25
	6/24/2004	**6.33**	**17.7**	**3.89**	7.40
	6/15/2005	**4.51**	**13.4**	**3.50**	5.81
	8/3/2006	**2.23**	**5.53**	**2.01**	3.20
	8/1/2007	**8.22**	**9.99**	**1.93**	3.74
	7/11/2008	**4.81**	**15.4**	**4.14**	8.26
	7/30/2010	**5.44**	**14.2**	**6.01 Q+**	8.49
	6/23/2011	**5.25/4.07**	**11.2/11.8**	**3.94/4.10**	5.71/5.80
	6/21/2012	**5.09/3.89**	**14.5/16.2**	**4.97/5.12**	7.18 QN/7.99 QN
	7/11/2013[3]	0.871 QN /**1.75 QN**	**8.31 QN/15.9 QN**	**2.14 QN/5.62 QN**	3.47 QN/7.94 QN
	7/12/2013	**2.61**	--	--	--
	6/25/2014[3]	**2.63/1.97**	**17.1 QN/2.87 QN**	**6.16 QN/0.996 QN**	8.79 QN/1.45 QN
	6/25/2015	**3.22/2.83**	**12.5/9.85**	**3.62 QH/2.79 QH**	5.24 QH/4.24 QH
	6/15/2016	**2.16/2.38**	**2.34/2.52**	**0.645/0.5**	0.8609 MN/0.7033 MN
	8/3/2018	**2.69/2.84**	**3.25/2.59 Q+**	**1.3/1.2**	1.8419 Q/ 1.5237 Q
	6/12/2020	**3.03/2.71**	**11/9.53**	**4.31/3.25**	5.6596 Q/4.3189 Q

Notes:

1. Sampling method prior to 2011 was purging 3 casing volumes with a bailer, followed by sample collection with a bailer. Starting in 2011, the sampling method switched to a low-flow sampling technique with purging and sampling performed with a peristaltic pump and tubing.
2. Analytical results are suspected to have been mislabeled or switched for monitoring wells MW-8 and MW-9 during sampling handling of 9/13/2002 samples. Analytical results in this table have been placed in corrected locations.
3. Monitoring well MW-9 sample was collected without prior purging in 2013 and 2014.
4. MW-9 is a poor producer of groundwater and typically was purged dry when trying to achieve standard parameters using a low-flow sampling technique. Since 2015, the standard sampling protocol for MW-9 is to purge the well dry and collect the sample approximately 24 -72 hours later. Water level recovery has been on the order of 40 to 80% at the time of sampling.

Coding

0.377 / 0.364	Primary sample concentration followed by duplicate sample concentration
4.81	Bold and Shaded - Concentration exceeded the 18 AAC 75.345, Table C groundwater cleanup level (October, 2018).
ND [0.0900]	Analyte not detected above the practical quantitation limit (limit of quantitation, or LOQ). Data prior to 2012 analytes were not detect above the Detection Limit (DL).

Abbreviations:

AAC	Alaska Administration Code
B	Compound was positively identified in the trip blank or method blank.
BTEX	benzene, toluene, ethylbenzene, and total xylenes
DRO	diesel range organics
J	Compound was positively identified, above the detection limit, but below the Limit of Quantitation.
GRO	gasoline range organics
Q	The quantitation is an estimate. An "H/+", "L/-", or "N" indicates a potential high, low, or unknown bias respectively.
mg/L	milligrams/liter
M	The quantitation is an estimate due to a sample matrix quality control failure. An "H", "L", or "N" indicates a potential high, low, or unknown bias respectively.
ND	not detected
--	Sample not analyzed for parameter

Photo 1: Monitoring Well MW-9 TS as it was being purged dry on 6/9/2020. The well was not sampled until 6/12/2020 due to the slow recharge rate. The well is located south of the Transformer Shop.

Photo 2: Monitoring Well MW-5 TS, located under the stairs, being purged prior to sampling. Photo on 6/10/2020.

SLR	Transformer Shop Groundwater Sampling ML&P Anchorage, Alaska
SITE PHOTOGRAPHS June 9 & 10, 2020	Job No: 105.00528.18001

Photo 3: Monitoring Well MW-7 TS as it is being purged. Location is north of Transformer Shop. Photo on 6/10/2020.

Photo 4: MW-6 TS site prior to purging. Location is near top of ramp north of Transformer Shop. Photo on 6/10/2020.

Groundwater Sampling Form

Site/Client Name: MLTP Transformer Shop	**Well ID:** MW-9TS
Project # : 105.00528.18001 T0351	Sample ID: —
Sampled By: Nicholas Wells	Sample Time: — Sample Date: 6/9/2020
Weather Conditions: Low 50s, Cloudy	Duplicate ID: —
Sampling Method: ☐ Low Flow ☒ Other Purge full volume	MS/MSD ☐ Yes ☐ No Trip Blank Required: ☐ Yes ☐ No

Well Information

Well Type: ☒ Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): ~~4.33~~ NW 4.22	Tubing/Pump Depth (ft. BTOC):
Total Depth (ft BTOC): ~~8.34~~ CM/dc 8.56	Purge Start Time (24-hr) 12:54 @ 250 mL/minute
Depth to Product (ft. BTOC) N/A	Purge End Time (24-hr) 13:57
Product Thickness (ft) N/A	Total Purge Time (min) 58 4 gallons purged.

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.: Drawdown greater than 0.3 ft

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4" – 0.653 gal/ft	6" – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (liter/ minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
Parameter Stable (Check applicable)										

Sample Color: Clear **Sample Odor:** light fuel smell **Sheen:** Slight hydrocarbon sheen

Analytical Sampling

Analyses	Check Applicable	Comments

Notes: 4.34 ft water column. 3.47 ft of recharge is 80%. Water level of 5.09 ft BTOC needed for sampling.

Equipment: Pump Type Peristaltic - GeoPump #2 Tubing (Type/Length) Teflon lined Bailer Type N/A

Water Level Meter SLR#2 Yellow 300ft Multi-Parameter Meter (Make/SN#) —

Turbidity Meter (Make/SN#) N/A Filter Lot # N/A

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☐ Treated (how?)_____

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: MLAP Transformer Shop	**Well ID:** MW-9TS
Project #: 105.00528.18001 T0351	Sample ID: MW-9TS
Sampled By: Nick Wells & Francesca Risse	Sample Time: 0940 Sample Date: 6/12/2020
Weather Conditions: 50s, Sunny, Partly Cloudy	Duplicate ID: MW-99TS @ 10:00
Sampling Method: ☐ Low Flow ☒ Other recharge to 80%	MS/MSD ☐ Yes ☒ No Trip Blank Required: ☒ Yes ☐ No

Well Information

Well Type: ☒ Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 4.92	Tubing/Pump Depth (ft. BTOC):
Total Depth (ft BTOC): 8.56	Purge Start Time (24-hr) 10:00
Depth to Product (ft BTOC) ~	Purge End Time (24-hr) 10:10
Product Thickness (ft) ~	Total Purge Time (min) 10

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4" – 0.653 gal/ft	6" – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (liter/ minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
10:03			11.17	1130	8.07	7.08	172.0	7.45		
10:06			10.93	1004	5.27	7.16	159.8	4.92		
10:09			10.64	971	4.56	7.19	155.4	4.11		
Parameter Stable (Check applicable)										

Sample Color: None **Sample Odor:** light fuel **Sheen:** Slight hydrocarbon sheen

Analytical Sampling

Analyses	Check Applicable	Comments
VOCs SW8260	✓	
GRO AK101	✓	
DRO AK102	✓	
PAH SIM SW8270D	✓	

Notes:

Equipment: Pump Type Peristaltic GeoPump #2 Tubing (Type/Length) Teflon lined Bailer Type N/A

Water Level Meter SLR #2 300ft yellow Multi-Parameter Meter (Make/SN#) YSI 556 05B2462 AE

Turbidity Meter (Make/SN#) Hach 2100Q Portable Turbidimeter 10030C001472 Filter Lot # N/A

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☐ Treated (how?)_____

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: ML&P Transformer Shop	**Well ID:** MW-5 TS
Project #: 105.00528.18001 T0351	Sample ID: MW-5TS
Sampled By: Nick Wells, Francesca Risse	Sample Time: 10:28 Sample Date: 6/10/2020
Weather Conditions: 50s, Sunny	Duplicate ID: —
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: ☒ Yes ☐ No

Well Information

Well Type: ☒ Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 4.92	Tubing/Pump Depth (ft. BTOC):
Total Depth (ft BTOC): 13.64	Purge Start Time (24-hr) 09:28
Depth to Product (ft. BTOC) —	Purge End Time (24-hr) 10:14
Product Thickness (ft) —	Total Purge Time (min) 51

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft;

Min. purge volume if required: purge volume (gal) = volume of water/ft 0.163 (gal/ft) X Water column thickness 8.68 (ft) X # of casing volumes 3 = 4.25 gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4" – 0.653 gal/ft	6" – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate ~~mL~~ (liter/ minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%; or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
09:33	250	0	7.07	844	12.92	7.49	175.0	23.9	5.15	0.19
09:38	250	|	3.86	692	10.56	7.82	158.2	17.4	5.19	0.23
09:43	250	|	6.86	662	9.94	7.96	150.5	10.02	5.28	0.32
09:48	250	|	7.29	647	9.86	8.12	145.9	10.60	5.31	0.35
09:53	250	|	7.29	644	10.01	8.38	143.1	7.11	5.34	0.38
09:58	250	|	7.16	642	9.48	8.44	142.3	10.69	5.38	0.42
10:03	275	|	7.37	638	9.33	8.44	141.1	14.00	5.41	0.45
10:08	275	|	7.57	636	9.30	9.22	139.6	15.1	5.45	0.49
10:13	275	|	6.88	646	9.51	8.84	139.9	4.24	5.51	0.55
10:18	275	4.25	6.82	647	9.49	8.98	139.7	4.96	5.52	0.56
Parameter Stable (Check applicable)				✓	✓		✓			

Sample Color: Clear	**Sample Odor:** None	**Sheen:** N/A

Analytical Sampling

Analyses	Check Applicable	Comments
GRO AK101	✓	
BTEX SW8260	✓	
DRO AK102	✓	

Notes: 3 casing volumes purged.

Equipment: Pump Type Peristaltic GeoPump #2 Tubing (Type/Length) Teflon Lined Bailer Type N/A
Water Level Meter SLR #2 300ft yellow Multi-Parameter Meter (Make/SN#) YSI 556 05B2462AE
Turbidity Meter (Make/SN#) Lamotte 2020e Turbidimeter 14728 Filter Lot # N/A

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☐ Treated (how?)_____

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

Site/Client Name: MLP Transformer Shop	**Well ID:** MW-7TS
Project #: 105.00528.18001 T0351	Sample ID: MW-7TS
Sampled By: Nick Wells & Francesca Risse	Sample Time: 11:40 Sample Date: 6/10/2020
Weather Conditions: Upper 50s, Sunny	Duplicate ID: —
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: ☒ Yes ☐ No

Well Information

Well Type: ☒ Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): ~~17.40~~ 19.40 NW 6/10/20	Tubing/Pump Depth (ft. BTOC):
Total Depth (ft BTOC): 20.68	Purge Start Time (24-hr) 11:00
Depth to Product (ft. BTOC) —	Purge End Time (24-hr) 11:36
Product Thickness (ft) —	Total Purge Time (min) 36

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ =_____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4" – 0.653 gal/ft	6" – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate (mL/liter/minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max____ft)
11:05	200	0	8.69	1131	2.50	10.58	152.5	169	19.42	0.02
11:10	250	|	8.67	1122	2.20	9.57	145.7	71.6	19.42	0.02
11:15	250	|	8.52	1124	2.31	8.41	143.1	34.0	19.40	0.00
11:20	250	|	8.55	1124	2.97	8.13	138.9	29.7	19.42	0.02
11:23	250	|	8.48	1128	2.03	8.34	136.2	18.9	19.42	0.02
11:26	250	|	8.43	1129	1.88	8.82	134.0	11.9	19.42	0.02
11:29	250	|	8.28	1133	1.79	9.16	132.3	9.76	19.42	0.02
11:32	250	|	8.27	1140	1.74	9.78	129.1	4.99	19.43	0.03
11:35	250	2.5	8.21	1141	1.70	9.42	127.0	6.59	19.43	
Parameter Stable (Check applicable)			✓	✓	✓		✓			

Sample Color: Clear	**Sample Odor:** None	**Sheen:** N/A

Analytical Sampling

Analyses	Check Applicable	Comments
GRO AK 101	✓	
BTEX SW8260	✓	
DRO AK102	✓	

Notes:

Equipment: Pump Type Peristaltic Geopump #2 Tubing (Type/Length) Teflon lined Bailer Type N/A

Water Level Meter ~~YSI 556~~ SLR #3 300Ft Yellow Multi-Parameter Meter (Make/SN#) YSI 556 05B2462 AE

Turbidity Meter (Make/SN#) NW 6/10/20 LaMotte 2020e Turbidimeter 14728 Filter Lot # N/A

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☐ Treated (how?)_____

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Groundwater Sampling Form

NW 6/10/20

Site/Client Name: ~~SLR~~ ML&P Transformer Shop	**Well ID:** MW-6TS
Project #: 105.00528.18001 T0351	Sample ID: MW-6TS
Sampled By: Nick Wells & Francesca Risse	Sample Time: 12:45 Sample Date: 6/10/2020
Weather Conditions: 50s, Sunny, Breeze	Duplicate ID: —
Sampling Method: ☒ Low Flow ☐ Other_____	MS/MSD ☐ Yes ☒ No Trip Blank Required: ☒ Yes ☐ No

Well Information

Well Type: ☒ Permanent ☐ Temporary	Well Diameter 2 in.	Screen Interval: _____ ft BGS to _____ ft BGS
Well Condition: ☒ Good ☐ Fair ☐ Poor (if fair or poor explain in Notes)		Stickup ☐ Yes ☒ No; If yes, _____ ft above ground

Gauging/Purging Information

Depth to Water (ft BTOC): 15.34	Tubing/Pump Depth (ft. BTOC):
Total Depth (ft BTOC): 20.61	Purge Start Time (24-hr) 1205
Depth to Product (ft. BTOC) —	Purge End Time (24-hr) 1239
Product Thickness (ft) —	Total Purge Time (min)

LOW FLOW: **Max Draw Down** = (Tubing Depth – Top of Screen Depth)_____ X 0.25 = _____(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;

Min. purge volume if required: purge volume (gal) = volume of water/ft_____(gal/ft) X Water column thickness_____(ft) X # of casing volumes_____ = _____gal

Well Diameter – gal/ft	1" – 0.041 gal/ft	2" – 0.163 gal/ft	4" – 0.653 gal/ft	6" – 1.469 gal/ft

Water Quality Parameters

(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])

Time (24-hr)	Flow Rate ~~mL/(liter~~ minute)	Purge Volume (gal)	Temp (°C) (± 3 %)	Specific Conductance (µS/cm°) (± 3%)	DO (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10mV)	Turbidity (NTU) (± 10%, or <5 NTU)	DTW (ft BTOC)	Drawdown (ft) (Max___ft)
12:10	225	0	8.34	718	3.96	11.90	84.5	47.2	15.34	0
12:15	225	0	8.02	709	2.06	11.87	70.3	48.2	15.34	0
12:20	225	|	7.71	705	1.68	11.72	59.7	36.7	15.34	0
12:23	225	|	7.92	705	1.38	12.30	53.4	22.9	15.34	0
12:26	225	|	7.83	705	1.33	12.40	48.4	18.1	15.34	0
12:29	225	|	7.83	705	1.25	12.14	44.6	15.7	15.34	0
12:32	225	|	7.78	705	1.18	11.56	40.9	12.7	15.34	0
12:35	225	|	7.70	707	1.13	10.93	39.0	8.55	15.34	0
12:38	225	2	7.90	706	1.10	10.44	35.8	9.06	15.34	0
Parameter Stable (Check applicable)			✓	✓	✓		✓			

Sample Color: Clear	**Sample Odor:** None	**Sheen:** None

Analytical Sampling

Analyses	Check Applicable	Comments
GRO AK101	✓	
BTEX SW 8260	✓	
DRO AK102	✓	

Notes:

Equipment: Pump Type Peristaltic GeoPump #2 Tubing (Type/Length) Teflon Lined Bailer Type N/A

Water Level Meter SLR #2 300ft yellow Multi-Parameter Meter (Make/SN#) YSI 556 05B2462 AE

Turbidity Meter (Make/SN#) LaMotte 2020e Turbidimeter 14728 Filter Lot # N/A

Purge Water Handling: ☐ Discharged to surface ☒ Containerized ☐ Treated (how?)_____

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Water Parameter Meter Calibration Log

SLR

Date: 6/10/2020 Time: 08:43 Calibration By: Nick Wells

Meter Manufacturer and Identification #: YSI 556 MPS 05B2462 AE

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading NW 6/10/20	Reading After Calibration	Calibration Acceptance Criteria
pH	7.00	7.01	CC678634	6/6/20	6/28/21	~~7.90~~ 6.19	7.01	± 0.10
	4.00	4.00	CC643483	6/6/20	10/07/21	~~3.40~~ 3.98	4.00	± 0.10
	10.00	10.06	CC627098	6/6/20	6/19/21	10.08	10.07	± 0.10
Sp Cond (mS/cm)	1.413	1.413	CC18930	6/6/20	8/29/20	2.430	1.413	± 10%
ORP (mV)	240	240	1600	9/4/17	05/2022	236.8	240.3	----------
DO*						130.6	99.5	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable) 29.95 in Hg

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date: 6/12/2020 Time: 09:06 Calibration By: Nick Wells

Meter Manufacturer and Identification #: YSI 556 MPS 05B2462 AE

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
pH	7.00	7.01	CC678634	6/6/20	6/28/21	6.76	7.02	± 0.10
	4.00	4.00	CC643483	5/26/20	10/7/21	3.98	4.00	± 0.10
	10.00	10.06	CC627098	6/6/20	6/19/21	10.24	10.08	± 0.10
Sp Cond (mS/cm)	1.413	1.413	CC18930	6/6/20	8/29/20	1.466	1.413	± 10%
ORP (mV)	240	240	3688	6/6/20	12/2023	241.3	240.1	----------
DO*						106.2	100.0	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable) 30.19 in Hg

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date: _____ Time: _____ Calibration By: _____

Meter Manufacturer and Identification #: _____

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
pH	7.00							± 0.10
	4.00							± 0.10
	10.00							± 0.10
Sp Cond (mS/cm)	1.413							± 10%
ORP (mV)	240							----------
DO*								± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Turbidimeter Calibration Log

SLR

Calibration Date	Calibration Time	Calibration By		
6/10/2020	08:55	Francesca Risse		
Instrument Make/Model	**Serial #**	**Cal Fluid #1**	**Cal Fluid #2**	**Within Acceptable Range?**
LaMotte / 2020e Turbidimeter	14728	10 NTU	0 NTU	yes / no
Bump Check ☐ or Calibration ☒ Notes: 6/10/2020 08:55		Bump check result or post-calibration reading: 10.02	Bump check result or post-calibration reading: 0.00	

Calibration Date	Calibration Time	Calibration By		
6/12/2020	09:06	Francesca Risse		
Instrument Make/Model	**Serial #**	**Cal Fluid #1**	**Cal Fluid #2**	**Within Acceptable Range?**
~~LaMotte / 2020e Turbidimeter~~	14728	10 NTU	0 NTU	yes / no
Bump Check ☐ or Calibration ☒ Notes:		Bump check result or post-calibration reading: 9.09	Bump check result or post-calibration reading: 0.00	

FR 6/12/20

Calibration Date	Calibration Time	Calibration By		
6/12/2020	09:23	Francesca Risse		
Instrument Make/Model	**Serial #**	**Cal Fluid #1**	**Cal Fluid #2**	**Within Acceptable Range?**
HACH / 2100Q Portable Turbidimeter	10030C001472	800 NTU	100 NTU	yes / no
Bump Check ☐ or Calibration ☒ Notes:		Bump check result or post-calibration reading: 819	Bump check result or post-calibration reading: 103	

Calibration Date	Calibration Time	Calibration By		
Instrument Make/Model	**Serial #**	**Cal Fluid #1**	**Cal Fluid #2**	**Within Acceptable Range?**
		20 NTU	_____ NTU	yes / no
Bump Check ☐ or Calibration ☐ Notes:		Bump check result or post-calibration reading: 20.3	Bump check result or post-calibration reading:	

Calibration Date	Calibration Time	Calibration By		
Instrument Make/Model	**Serial #**	**Cal Fluid #1**	**Cal Fluid #2**	**Within Acceptable Range?**
		_____ NTU	_____ NTU	yes / no
Bump Check ☐ or Calibration ☐ Notes:		Bump check result or post-calibration reading:	Bump check result or post-calibration reading:	

Calibration Date	Calibration Time	Calibration By		
Instrument Make/Model	**Serial #**	**Cal Fluid #1**	**Cal Fluid #2**	**Within Acceptable Range?**
		_____ NTU	_____ NTU	yes / no
Bump Check ☐ or Calibration ☐ Notes:		Bump check result or post-calibration reading:	Bump check result or post-calibration reading:	

Note: A bump check can verify the instrument is in proper calibration if the instrument reads an accurate value for a calibration solution (without performing a full calibration). In the event a bump check does not indicate the instrument is properly calibrated, a calibration will be performed, per manufacturer instructions.

LABORATORY DATA
QUALITY ASSURANCE REVIEW
ML&P

2020 GROUNDWATER MONITORING
AT THE ML&P TRANSFORMER SHOP
(1130 EAST 1ST AVE., ANCHORAGE, AK)

July 2020

Prepared by: Francesca Risse
Reviewed by: Jennifer McLean

SLR Project Number: 105.00528.18001
ADEC Number: 2100.26.302
ADEC Hazard ID: 23842

SLR International Corporation
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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
AK	Alaska
ADEC	Alaska Department of Environmental Conservation
BTEX	benzene, toluene, ethylbenzene, xylenes
°C	degrees Celsius
CCV	continuing calibration verification
COC	chain of custody
DL	detection limit
DRO	diesel range organics
EDD	electronic data deliverable
GRO	gasoline range organics
LCL	lower control limit
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
LV	low volume
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
NA	not applicable
NFG	National Functional Guidelines
PAH	polynuclear aromatic hydrocarbons
PARCCS	precision, accuracy, representativeness, comparability, completeness, and sensitivity
QA	quality assurance
QAR	quality assurance review
QC	quality control
RPD	relative percent difference
SDG	sample delivery group
SIM	selective ion monitoring
SLR	SLR International Corporation
SGS	SGS North America, Inc.
UCL	upper control limit
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds

This report summarizes a review of analytical data for samples collected on June 10, 2020 and June 12, 2020 in support of ML&P Transformer Shop Area groundwater monitoring activities. Samples were collected by SLR International Corporation (SLR). SGS North America, Inc (SGS) provided analytical support to the project. SGS maintains a current Alaska Department of Environmental Conservation (ADEC) Contaminated Sites approval number (17-021) for analytical methods of interest, as applicable. Table 1 provides a summary of the work order, sample receipt, analytical methods, and analytes.

Table 1 Sample Summary

SDG	Date Collected	Date Received by Laboratory	Temp. Blank	Matrix	Analytical Method	Analyte	Trip Blank[1]
1202600	6/10/2020, 6/12/2020	6/12/2020	4.9°C	GW	SW8260D SW8260D AK101 AK102 SW8270D LV	VOCs BTEX GRO DRO PAH SIM	Required Required Required NA NA

Notes:
1 – This type of sample requires a trip blank to be included in the cooler, with the trip blank noted on the chain of custody.
Acronyms:
AK – Alaska
°C – degrees Celsius
BTEX – benzene, toluene, ethylbenzene, and total xylenes
DRO – diesel range organics
GRO – gasoline range organics
GW – groundwater
LV – low volume
PAH – polynuclear aromatic hydrocarbons
SDG – sample delivery group
SIM – selective ion monitoring
VOCs – volatile organic compounds

The laboratory final report was presented as a Level II deliverable and included documentation of the delivery group chain-of-custody (COC) and sample receipt condition. A Microsoft Access compatible electronic data deliverable (EDD) was also provided. The PDF laboratory report is provided electronically as Appendix E.

Quality Assurance Program

A quality assurance (QA) program was followed for this project that addressed project administration, sampling, quality control (QC), and data review. SLR adhered to required and established sampling and COC protocols. The selected laboratory maintains an internal quality assurance program and standard operating procedures.

The analytical data was reviewed for consistency with any project-specific requirements in the Work Plan Addendum (SLR 2018), ADEC Technical Memorandum *Minimum Quality Assurance Requirements for Sample Handling, Reports, and Laboratory Data* (ADEC, 2019), National Functional Guidelines (NFG, United States Environmental Protection Agency [USEPA] 2017), analytical method criteria, and laboratory criteria. An ADEC Laboratory Data Review Checklist was completed for the SDG, and is included as Appendix D. A review for any anomalies to the project requirements for precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS) are noted in this QAR, and any data qualifications discussed.

The data review included the following, as applicable:

- Reviewing COC records for completeness, signatures, and dates;
- Identifying any sample receipt or preservation anomalies that could impact data quality;
- Verifying that QC blanks (e.g., field blanks, equipment blanks, trip blanks, etc.) were properly prepared, identified, and analyzed;
- Evaluating whether laboratory reporting limits met project goals; Reviewing calibration verification recoveries, to include confirming that the laboratory did not identify that any Calibration Verification (CCV) recoveries or other calibration related criteria were outside applicable acceptance limits;
- Verifying that surrogate analyses were within recovery acceptance limits;
- Verifying that Laboratory Control Samples (LCS) and Laboratory Control Sample Duplicates (LCSD), and Matrix Spike (MS) and Matrix Spike Duplicate (MSD), were within recovery acceptance limits;
- Evaluating the result relative percent difference (RPD) between primary and duplicate field samples, LCS/LCSD, MS/MSD, and laboratory duplicates; and
- Providing an overall assessment of laboratory data quality and qualifying sample results if necessary.

Data Qualifications

As part of this QAR, qualifiers were applied to datum as determined necessary based on specified criteria or professional judgement. In all cases, the basis for qualification and the applied data flag are discussed in this QAR. Table 2 provides a list of potential qualifiers (i.e., flags). These data flags were appended to the data as appropriate.

Table 2 Data Qualifiers

Lab Qualifier (Flag)	NFG Qualifier (Flag)	Equivalent Project Qualifier (Flag)[1,2]	Definition
U	U	U	The analyte was analyzed for, but was not detected above the limit of detection (LOD). This qualifier is appended by the laboratory.
J	NJ	**J**	The analyte has been "tentatively" or "presumptively" identified as present and the associated numerical value is the estimated concentration in the sample between the limit of quantitation (LOQ) and the Detection Limit (DL). This qualifier is appended by the laboratory.
--	J	**Q**	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample, due to one or more laboratory quality control criteria failures (e.g., LCS recovery, surrogate spike recovery) or a matrix effect. Where applicable, a "+" or "-" was appended to indicate a high or low bias, respectively.
--	UJ	**UJ**	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
--	R	R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
--	--	B	Blank contamination: The analyte was positively identified in the blank (e.g., trip blank and/or method blank) associated with the sample and the concentration reported for the sample was less than five times that of the blank (ten times for metals and common laboratory contaminants methylene chloride and acetone). Where applicable, "U" was appended prior to the "B" to indicate the blank detection was greater than the sample detection and the result is likely a false positive or both the blank detection and sample detection were below the LOD. The greater of the sample detection or LOD was reported in brackets.

Notes:
1 - Flags were appended to the data where applicable. The table presents laboratory, NFG and project equivalent qualifiers.
2 - Only flags in **bold** were applicable and appended to data for this project.

A discussion of the project data quality relative to PARCCS goals and summary of any anomalies or failures requiring data qualifiers follows.

Data Validation

Data Packages

The data package was checked for transcription errors, omissions, or other anomalies. No issues were noted with regards to the data package.

- The case narrative noted a surrogate recovery exceedance; however, the comment is not applicable to any project samples or associated QC. No data were impacted.

Sample Receipt

The sample receipt documentation was checked for anomalies. No issues were noted with regards to the receipt of samples, except as noted below.

- A comment regarding trip blanks on the Sample Receipt Form noted that an extra set of trip blanks accompanied the samples with the label "Do not analyze this one". The laboratory proceeded to dispose of the extra trip blanks as indicated. No data were impacted.

Holding Times and Preservation

Samples were appropriately preserved and were submitted to SGS. Sample analyses were conducted within holding time criteria. No issues were noted with regards to sample preservation.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the appropriate frequencies. Analytes were not detected at or above the LOD in any method blanks, and one detection occurred between the DL and LOD.

- For GRO by Method AK101, one method blank in batch VXX 35778 had a detection of 0.0389 J milligrams per liter (mg/L), below the LOD of 0.05 mg/L. Samples associated with this blank detection were MW-5TS, MW-6TS, and MW-7TS, all of which had nondetectable results for GRO. Since a high bias was indicated and all associated results were nondetectable, no qualification was considered necessary. All data were usable without qualification.

Trip Blanks

One trip blank was analyzed for VOCs by Method SW8260D and GRO by Method AK101. All BTEX analytes are included in the VOC list, so an additional trip blank for BTEX by Method SW8260D was not required. Analytes were not detected at or above the LOD in the trip blank.

Reporting Limits

For non-detectable results, LODs were compared to applicable regulatory criteria for the site. LODs were compared to 18 Alaska Administrative Code (AAC) 75.345 Table C, *Groundwater Cleanup Levels* (ADEC, 2018). Except as noted below, all analytes with results of non-detect had LODs at or below applicable regulatory criteria.

The LODs for several VOC analytes (listed below) by Method SW8260D, for samples MW-9 TS and duplicate MW-99 TS, did not meet ADEC cleanup levels. This was due to a necessary 50-fold dilution due to high target analyte concentration. For these compounds, it is not possible to state with certainty the absence of target analyte below the laboratory LOD, but above the ADEC cleanup level. The data for the impacted analytes are limited in usability for that purpose. For both

impacted samples, multiple target analytes exceeded applicable ADEC cleanup levels. Overall, data usability was considered not impacted, and all data were usable without qualification.

- 1,1,1,2-Tetrachloroethane
- 1,1,2,2-Tetrachloroethane
- 1,1,2-Trichloroethane
- 1,1-Dichloroethane
- 1,2,3-Trichlorobenzene
- 1,2,3-Trichloropropane (TB LOD also above limits)
- 1,2,4-Trichlorobenzene
- 1,2-Dibromoethane
- 1,2-Dichloropropane
- 1,4-Dichlorobenzene
- 2-Hexanone
- Bromodichloromethane
- Bromomethane
- Carbon tetrachloride
- Chloroform
- cis-1,3-Dichloropropene
- Dibromochloromethane
- Dibromomethane
- Hexachlorobutadiene
- Methylene chloride
- Methyl-t-butyl ether
- trans-1,3-Dichloropropene
- Trichloroethene
- Vinyl chloride

Calibration Verifications
CCVs were analyzed at the appropriate frequencies. CCV data was included only in the EDD, not in the case narrative. All CCV recoveries were within acceptable limits as reviewed in the EDD.

Internal Standards
No internal standards were noted in the case narrative as being outside of acceptance limits. Internal standard performance was not otherwise presented in the report or in the electronic data deliverable. Internal standards criteria were considered met.

Surrogate Recovery Results
Surrogate analysis was performed at the required frequencies. All surrogate recoveries were within analytical method and SGS percent recovery acceptance limits.

Laboratory Control Samples and Laboratory Control Duplicate Samples done
LCS and LCSDs were analyzed at the appropriate frequencies. All LCS and LCSD recoveries and RPDs were within acceptable limits.

Matrix Spike and Matrix Spike Duplicate Samples
MS and MSDs were analyzed at the appropriate frequencies. All MS/MSD recoveries and RPDs were within acceptable limits.

Field Duplicates
The field duplicate sample frequency is presented in Table 3. Parent sample and field duplicates are presented in Table 4. For all methods and analytes, the duplicate frequency satisfied the requirement of one per 10 samples or less per matrix and analyte. A duplicate was not submitted for BTEX by Method SW8260D, as a duplicate for the full VOCs by Method SW8260D was submitted, which includes the BTEX analytes. Field duplicates were submitted blind to the laboratory.

All parent sample/field duplicate RPDs were within the ADEC required 30% for waters, except as noted in Table 5 with chronologically associated samples listed in the table footnotes. Parent sample/duplicate results were qualified as shown in the table. To err on the conservative, impacted analytes for all chronologically associated field samples, listed in the Table 5 footnotes, were also qualified. Detected results were qualified “Q” and non-detect results were qualified “UJ.” Associated trip blank data were not listed in the footnotes, nor qualified, as the trip blank, prepared in the laboratory, was considered unaffected by field precision.

In all cases, either both the parent sample and duplicate results were below, or both parent sample and duplicate results were above, the applicable ADEC cleanup level; therefore, data usability was not impacted.

Regarding field associated samples, in all instances laboratory precision was established by either an LCS/LCSD or an MS/MSD pair with RPDs within acceptable limits, thus the impact to data was considered minimal. Associated field samples, MW-5 TS, MW-6 TS, and MW-7 TS were analyzed for BTEX by SW8260D, thus only ethylbenzene and toluene were affected by field precision exceedances. All associated samples had undetectable ethylbenzene and toluene results and were qualified "UJ" with LODs over 100-fold below the applicable cleanup level. All data were usable as qualified.

Parent sample/field duplicate pairs with both results below the LOQ were considered acceptable without qualification.

Table 3 Field Duplicate Count

Number of Primary Samples	Number of Field Duplicates	Method	Analytes
4	1	AK101	GRO
4	1	AK 102	DRO
3	1	SW8260D	BTEX[1]
1	1	SW8260D	VOCs
1	1	SW8270D LV	PAH SIM

Notes:
1 – BTEX are included in the VOCs analyte list.

Table 4 Parent Samples and Field Duplicates

Matrix	Parent Sample	Field Duplicate	Method	Analytes
Groundwater	MW-9 TS	MW-99 TS	SW8260D AK101 AK102 SW8270D LV	BTEX/VOCs GRO DRO PAH SIM

Table 5 Field Duplicate RPD Exceedances

Method	Analyte	Primary: MW-9 TS	Duplicate: MW-99 TS	RPD (%)	Flag	ADEC Cleanup Level (mg/L)[1]
		Result (mg/L)	Result (mg/L)			
SW8260D	Ethylbenzene	**0.246**	**0.11**	76%	Q	0.015
	Toluene	0.0936	0.0689	30%	Q	1.1
SW8270D LV	1-Methylnaphthalene	0.0057	0.00302	61%	Q	0.011
	Acenaphthene	0.000224	0.000132	52%	Q	0.53
	Fluoranthene	[0.0000252] U	0.000062	84%	UJ/Q	0.26
	Fluorene	0.00033	0.000152	74%	Q	0.29
	Naphthalene	**0.0177**	**0.00905**	65%	Q	0.0017

Bold indicates an exceedance of ADEC criteria.
Notes:
1 – Limits shown are 18 AAC 75, Table C (ADEC, 2018).
2 – Samples chronologically associated with this parent sample field duplicate pair were MW-5 TS, MW-6 TS, and MW-7 TS.

Laboratory Duplicate Samples
No laboratory duplicates were analyzed in association with these samples.

Overall Assessment

This data were considered of good quality acceptable for use with the noted qualifications. No data were rejected.

Precision, Accuracy, Representativeness, Comparability, Completeness, and Sensitivity Summary

- Precision: Precision goals were met, except as noted in the Field Duplicates section.
- Accuracy: Accuracy goals were met.
- Representativeness: Representativeness goals were met. The samples were collected from usual locations.
- Comparability: Comparability goals were met. The same laboratory and methods were used.
- Completeness: Completeness goals were met. The data were 100% complete with respect to analysis.
- Sensitivity: Sensitivity goals were met, except as noted in the Method Blanks and Reporting Limits section.

References

ADEC. 2019. ADEC Technical Memorandum *Minimum Quality Assurance Requirements for Sample Handling, Reports, and Laboratory Data.* October.

ADEC. 2018. 18 AAC 75, *Oil and Other Hazardous Substances Pollution Control.* October 27.

SLR International Corporation (SLR). 2018. *Work Plan Addendum for Groundwater Monitoring at the ML&P Transformer Shop.* July 9.

U.S. Environmental Protection Agency (USEPA). 2017. *National Functional Guidelines for Superfund Organic Methods Data Review.* January.

Laboratory Data Review Checklist

Completed By:

Francesca Risse

Title:

Staff Engineer

Date:

July 14, 2020

Consultant Firm:

SLR International Corporation

Laboratory Name:

SGS North America, Inc.

Laboratory Report Number:

1202600

Laboratory Report Date:

July 14, 2020

CS Site Name:

ML&P Transformer Shop, 1130 E. 1st

ADEC File Number:

2100.26.302

Hazard Identification Number:

23842

1202600

Laboratory Report Date:

July 14, 2020

CS Site Name:

ML&P Transformer Shop, 1130 E. 1st

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

1. Laboratory

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

   Yes☒ No☐ N/A☐ Comments:

   All analyses were conducted at SGS North America, Inc., Anchorage. SGS is ADEC CS approved, certificate number 17-021.

   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☐ N/A☒ Comments:

   All analyses were conducted at SGS North America, Inc., Anchorage.

2. Chain of Custody (CoC)

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

   Yes☒ No☐ N/A☐ Comments:

   b. Correct analyses requested?

   Yes☒ No☐ N/A☐ Comments:

3. Laboratory Sample Receipt Documentation

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

   Yes☒ No☐ N/A☐ Comments:

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

   Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ 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☐ N/A☐ Comments:

One extra set of trip blanks accompanied the samples. These were not analyzed since one set of trip blanks was satisfactory.

e. Data quality or usability affected?

Comments:

4. Case Narrative

a. Present and understandable?

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

c. Were all corrective actions documented?

Yes☐ No☐ N/A☒ Comments:

No corrective actions.

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

Comments:

No impact.

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5. Samples Results

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

Yes☒ No☐ N/A☐ Comments:

b. All applicable holding times met?

Yes☒ No☐ N/A☐ Comments:

c. All soils reported on a dry weight basis?

Yes☐ No☐ N/A☒ Comments:

Only water samples were analyzed.

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

Yes☐ No☒ N/A☐ Comments:

LODs for VOC analytes 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,1-dichloroethane, 1,2,3-trichlorobenzene, 1,2,3-trichloropropane, 1,2,4-trichlorobenzene, 1,2-dibromoethane, 1,2-dichloropropane, 1,4-dichlorobenzene, 2-hexanone, bromodichloromethane, bromomethane, carbon tetrachloride, chloroform, cis-1,3-dichloropropene, dibromochloromethane, dibromomethane, hexachlorobutadiene, methylene chloride, methyl-t-butyl ether, trans-1,3-dichloropropene, trichloroethene, and vinyl chloride for samples MW-9 TS and duplicate MW-99 TS, did not meet ADEC cleanup levels.

e. Data quality or usability affected?

The high LODs were due to a 50-fold dilution due to high target analyte concentration. For these compounds, it is not possible to state with certainty the absence of target analyte below the laboratory LOD, but above the ADEC cleanup level. These data are limited in usability for the impacted analytes for that purpose. Both affected samples had multiple target analytes with detected values over ADEC cleanup levels. Overall, data usability was considered not impacted, and all data were usable without qualification.

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ML&P Transformer Shop, 1130 E. 1st

6. QC Samples

a. Method Blank

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

For GRO by Method AK101 in batch VXX 35778, one method blank had a detection of 0.0389 J milligrams per liter (mg/L), below the LOD of 0.05 mg/L.

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

Comments:

Samples associated with this blank detection were MW-5TS, MW-6TS, and MW-7TS, all of which had nondetectable results for GRO, and were therefore not affected.

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

Yes☐ No☐ N/A☒ Comments:

No samples were affected.

v. Data quality or usability affected?

Comments:

Since a high bias was indicated and all associated results were nondetectable, no qualification was considered necessary. All data were usable without qualification.

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☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

No metals or inorganics were analyzed.

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Comments:

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

Yes☐ No☐ N/A☒ Comments:

LCS/LCSD's met all criteria.

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

Comments:

No impact.

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☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

No metals or inorganics were analyzed.

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

Yes☒ No☐ N/A☐ Comments:

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits and project specified objectives, if applicable? RPD reported from MS/MSD, and or sample/sample duplicate.

Yes☒ No☐ N/A☐ Comments:

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

Comments:

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

Yes☐ No☐ N/A☒ Comments:

MS/MSD's met all criteria.

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

Comments:

No impact.

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☐ N/A☐ Comments:

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ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits and project specified objectives, if applicable? (AK Petroleum methods 50-150 %R for field samples and 60-120 %R for QC samples; all other analyses see the laboratory report pages)

Yes☒ No☐ N/A☐ Comments:

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

Yes☐ No☐ N/A☒ Comments:

All surrogates met criteria.

iv. Data quality or usability affected?

Comments:

No impact.

e. Trip Blanks

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Yes☒ No☐ N/A☐ Comments:

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

Comments:

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v. Data quality or usability affected?

Comments:

No impact.

f. Field Duplicate

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

Yes☒ No☐ N/A☐ Comments:

ii. Submitted blind to lab?

Yes☒ No☐ N/A☐ Comments:

The duplicate of MW-9 TS was MW-99 TS.

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

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

Where R_1 = Sample Concentration
R_2 = Field Duplicate Concentration

Yes☐ No☒ N/A☐ Comments:

RPDs for the parent sample/duplicate pair for ethylbenzene and toluene by Method SW8260D, and for 1-methylnaphthalene, acenaphthene, fluoranthene, fluorene, and naphthalene by Method SW8270D LV were greater than the 30% limit. RPD exceedances ranged from 30% to 84%.

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

Comments:

Detected results were qualified "Q" and non-detect results were qualified "UJ." In all cases, either both the parent sample and duplicate results were below, or both parent sample and duplicate results were above, the applicable ADEC cleanup level; therefore, data usability was not impacted.

Regarding field associated samples, in all instances laboratory precision was established by either an LCS/LCSD or an MS/MSD pair with RPDs within acceptable limits, thus the impact to data was considered minimal. Associated field samples, MW-5 TS, MW-6 TS, and MW-7 TS were analyzed for BTEX by SW8260D, thus only ethylbenzene and toluene were affected by field precision exceedances. All associated samples had undetectable ethylbenzene and toluene results and were qualified "UJ" with LODs over 100-fold below the applicable cleanup level. All data were usable as qualified.

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

Yes☐ No☐ N/A☒ Comments:

No decontamination or equipment blanks were required or used.

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

Yes☐ No☐ N/A☒ Comments:

No decontamination or equipment blanks were required or used.

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☐ N/A☐ Comments:

Laboratory Report of Analysis

To: SLR Alaska-Anchorage
2700 Gambell Street, Suite 200
Anchorage, AK 99503
907-222-1112

Report Number: **1202600**

Client Project: **ML&P Transformer Shop**

Dear Bret Berglund,

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.

Stephen C. Ede
2020.07.14
10:53:49 -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: **SLR Alaska-Anchorage**
SGS Project: **1202600**
Project Name/Site: **ML&P Transformer Shop**
Project Contact: **Bret Berglund**

Refer to sample receipt form for information on sample condition.

LCS for HBN 1807765 [VXX/35778 (1564123) LCS

AK101 - Surrogate recovery for 1,4-difluorobenzene does not meet QC criteria. Surrogate recovery is within QC criteria in the associated samples.

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

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
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
MW-5TS	1202600001	06/10/2020	06/12/2020	Water (Surface, Eff., Ground)
MW-7TS	1202600002	06/10/2020	06/12/2020	Water (Surface, Eff., Ground)
MW-6TS	1202600003	06/10/2020	06/12/2020	Water (Surface, Eff., Ground)
MW-9TS	1202600004	06/12/2020	06/12/2020	Water (Surface, Eff., Ground)
MW-99TS	1202600005	06/12/2020	06/12/2020	Water (Surface, Eff., Ground)
Trip Blank	1202600006	06/10/2020	06/12/2020	Water (Surface, Eff., Ground)

Method	Method Description
8270D SIM LV (PAH)	8270 PAH SIM GC/MS LV
AK102	DRO Low Volume (W)
AK101	Gasoline Range Organics (W)
SW8260D	Volatile Organic Compounds (W)
SW8260D	Volatile Organic Compounds (W) FULL

SGS North America Inc.
200 West Potter Drive, Anchorage, AK 99518
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Detectable Results Summary

Client Sample ID: **MW-5TS**
Lab Sample ID: 1202600001

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.249J	mg/L

Client Sample ID: **MW-7TS**
Lab Sample ID: 1202600002

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.529J	mg/L

Client Sample ID: **MW-6TS**
Lab Sample ID: 1202600003

	Parameter	Result	Units
Semivolatile Organic Fuels	Diesel Range Organics	0.356J	mg/L

Client Sample ID: **MW-9TS**
Lab Sample ID: 1202600004

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	5.70	ug/L
	2-Methylnaphthalene	1.26	ug/L
	Acenaphthene	0.224	ug/L
	Fluorene	0.330	ug/L
	Naphthalene	17.7	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	3.03	mg/L
Volatile Fuels	Gasoline Range Organics	11.0	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	344	ug/L
	1,2-Dichloroethane	36.2	ug/L
	1,3,5-Trimethylbenzene	76.4	ug/L
	Benzene	4310	ug/L
	Ethylbenzene	246	ug/L
	Naphthalene	103	ug/L
	o-Xylene	30.7J	ug/L
	P & M -Xylene	982	ug/L
	Toluene	93.6	ug/L
	Xylenes (total)	1010	ug/L

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Detectable Results Summary

Client Sample ID: **MW-99TS**
Lab Sample ID: 1202600005

	Parameter	Result	Units
Polynuclear Aromatics GC/MS	1-Methylnaphthalene	3.02	ug/L
	2-Methylnaphthalene	1.28	ug/L
	Acenaphthene	0.132	ug/L
	Fluoranthene	0.0620	ug/L
	Fluorene	0.152	ug/L
	Naphthalene	9.05	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	2.71	mg/L
Volatile Fuels	Gasoline Range Organics	9.53	mg/L
Volatile GC/MS	1,2,4-Trimethylbenzene	304	ug/L
	1,2-Dichloroethane	29.8	ug/L
	1,3,5-Trimethylbenzene	81.9	ug/L
	Benzene	3250	ug/L
	Ethylbenzene	110	ug/L
	Naphthalene	95.8	ug/L
	o-Xylene	32.1J	ug/L
	P & M -Xylene	858	ug/L
	Toluene	68.9	ug/L
	Xylenes (total)	890	ug/L

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Results of **MW-5TS**

Client Sample ID: **MW-5TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600001
Lab Project ID: 1202600

Collection Date: 06/10/20 10:28
Received Date: 06/12/20 11:03
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	0.249	J	0.600	0.180	mg/L	1		06/22/20 17:19
Surrogates								
5a Androstane (surr)	92.4		50-150		%	1		06/22/20 17:19

Batch Information

Analytical Batch: XFC15619
Analytical Method: AK102
Analyst: A.L
Analytical Date/Time: 06/22/20 17:19
Container ID: 1202600001-A

Prep Batch: XXX43292
Prep Method: SW3520C
Prep Date/Time: 06/19/20 15:36
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Results of **MW-5TS**

Client Sample ID: **MW-5TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600001
Lab Project ID: 1202600

Collection Date: 06/10/20 10:28
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		06/16/20 19:32
Surrogates								
4-Bromofluorobenzene (surr)	104		50-150		%	1		06/16/20 19:32

Batch Information

Analytical Batch: VFC15176
Analytical Method: AK101
Analyst: KAJ
Analytical Date/Time: 06/16/20 19:32
Container ID: 1202600001-F

Prep Batch: VXX35778
Prep Method: SW5030B
Prep Date/Time: 06/16/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-5TS**

Client Sample ID: **MW-5TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600001
Lab Project ID: 1202600

Collection Date: 06/10/20 10:28
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U		0.400	0.120	ug/L	1		06/16/20 19:10
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		06/16/20 19:10
o-Xylene	0.500 U		1.00	0.310	ug/L	1		06/16/20 19:10
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		06/16/20 19:10
Toluene	0.500 U		1.00	0.310	ug/L	1		06/16/20 19:10
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		06/16/20 19:10
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.4		81-118		%	1		06/16/20 19:10
4-Bromofluorobenzene (surr)	110		85-114		%	1		06/16/20 19:10
Toluene-d8 (surr)	98.1		89-112		%	1		06/16/20 19:10

Batch Information

Analytical Batch: VMS20017
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 06/16/20 19:10
Container ID: 1202600001-C

Prep Batch: VXX35777
Prep Method: SW5030B
Prep Date/Time: 06/16/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-7TS**

Client Sample ID: **MW-7TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600002
Lab Project ID: 1202600

Collection Date: 06/10/20 11:40
Received Date: 06/12/20 11:03
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	0.529	J	0.600	0.180	mg/L	1		06/22/20 17:29
Surrogates								
5a Androstane (surr)	95.1		50-150		%	1		06/22/20 17:29

Batch Information

Analytical Batch: XFC15619
Analytical Method: AK102
Analyst: A.L
Analytical Date/Time: 06/22/20 17:29
Container ID: 1202600002-A

Prep Batch: XXX43292
Prep Method: SW3520C
Prep Date/Time: 06/19/20 15:36
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Results of **MW-7TS**

Client Sample ID: **MW-7TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600002
Lab Project ID: 1202600

Collection Date: 06/10/20 11:40
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		06/16/20 19:50
Surrogates								
4-Bromofluorobenzene (surr)	104		50-150		%	1		06/16/20 19:50

Batch Information

Analytical Batch: VFC15176
Analytical Method: AK101
Analyst: KAJ
Analytical Date/Time: 06/16/20 19:50
Container ID: 1202600002-F

Prep Batch: VXX35778
Prep Method: SW5030B
Prep Date/Time: 06/16/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-7TS**

Client Sample ID: **MW-7TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600002
Lab Project ID: 1202600

Collection Date: 06/10/20 11:40
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U		0.400	0.120	ug/L	1		06/16/20 19:26
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		06/16/20 19:26
o-Xylene	0.500 U		1.00	0.310	ug/L	1		06/16/20 19:26
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		06/16/20 19:26
Toluene	0.500 U		1.00	0.310	ug/L	1		06/16/20 19:26
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		06/16/20 19:26
Surrogates								
1,2-Dichloroethane-D4 (surr)	96		81-118		%	1		06/16/20 19:26
4-Bromofluorobenzene (surr)	107		85-114		%	1		06/16/20 19:26
Toluene-d8 (surr)	98.7		89-112		%	1		06/16/20 19:26

Batch Information

Analytical Batch: VMS20017
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 06/16/20 19:26
Container ID: 1202600002-C

Prep Batch: VXX35777
Prep Method: SW5030B
Prep Date/Time: 06/16/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/13/2020 3:16:43PM

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Results of **MW-6TS**

Client Sample ID: **MW-6TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600003
Lab Project ID: 1202600

Collection Date: 06/10/20 12:45
Received Date: 06/12/20 11:03
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	0.356	J	0.625	0.188	mg/L	1		06/22/20 17:39
Surrogates								
5a Androstane (surr)	89.4		50-150		%	1		06/22/20 17:39

Batch Information

Analytical Batch: XFC15619
Analytical Method: AK102
Analyst: A.L
Analytical Date/Time: 06/22/20 17:39
Container ID: 1202600003-A

Prep Batch: XXX43292
Prep Method: SW3520C
Prep Date/Time: 06/19/20 15:36
Prep Initial Wt./Vol.: 240 mL
Prep Extract Vol: 1 mL

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Results of **MW-6TS**

Client Sample ID: **MW-6TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600003
Lab Project ID: 1202600

Collection Date: 06/10/20 12:45
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		06/16/20 20:08
Surrogates								
4-Bromofluorobenzene (surr)	102		50-150		%	1		06/16/20 20:08

Batch Information

Analytical Batch: VFC15176
Analytical Method: AK101
Analyst: KAJ
Analytical Date/Time: 06/16/20 20:08
Container ID: 1202600003-F

Prep Batch: VXX35778
Prep Method: SW5030B
Prep Date/Time: 06/16/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/13/2020 3:16:43PM

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Results of **MW-6TS**

Client Sample ID: **MW-6TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600003
Lab Project ID: 1202600

Collection Date: 06/10/20 12:45
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Benzene	0.200 U		0.400	0.120	ug/L	1		06/16/20 19:41
Ethylbenzene	0.500 U		1.00	0.310	ug/L	1		06/16/20 19:41
o-Xylene	0.500 U		1.00	0.310	ug/L	1		06/16/20 19:41
P & M -Xylene	1.00 U		2.00	0.620	ug/L	1		06/16/20 19:41
Toluene	0.500 U		1.00	0.310	ug/L	1		06/16/20 19:41
Xylenes (total)	1.50 U		3.00	1.00	ug/L	1		06/16/20 19:41
Surrogates								
1,2-Dichloroethane-D4 (surr)	96.4		81-118		%	1		06/16/20 19:41
4-Bromofluorobenzene (surr)	109		85-114		%	1		06/16/20 19:41
Toluene-d8 (surr)	99.1		89-112		%	1		06/16/20 19:41

Batch Information

Analytical Batch: VMS20017
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 06/16/20 19:41
Container ID: 1202600003-C

Prep Batch: VXX35777
Prep Method: SW5030B
Prep Date/Time: 06/16/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-9TS**

Client Sample ID: **MW-9TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600004
Lab Project ID: 1202600

Collection Date: 06/12/20 09:40
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	5.70		0.0504	0.0151	ug/L	1		07/06/20 17:45
2-Methylnaphthalene	1.26		0.0504	0.0151	ug/L	1		07/06/20 17:45
Acenaphthene	0.224		0.0504	0.0151	ug/L	1		07/06/20 17:45
Acenaphthylene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Anthracene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Benzo(a)Anthracene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Benzo[a]pyrene	0.0101	U	0.0202	0.00625	ug/L	1		07/06/20 17:45
Benzo[b]Fluoranthene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Benzo[g,h,i]perylene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Benzo[k]fluoranthene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Chrysene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Dibenzo[a,h]anthracene	0.0101	U	0.0202	0.00625	ug/L	1		07/06/20 17:45
Fluoranthene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Fluorene	0.330		0.0504	0.0151	ug/L	1		07/06/20 17:45
Indeno[1,2,3-c,d] pyrene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Naphthalene	17.7		0.504	0.156	ug/L	5		07/08/20 20:16
Phenanthrene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Pyrene	0.0252	U	0.0504	0.0151	ug/L	1		07/06/20 17:45
Surrogates								
2-Methylnaphthalene-d10 (surr)	51.1		47-106		%	1		07/06/20 17:45
Fluoranthene-d10 (surr)	67.6		24-116		%	1		07/06/20 17:45

Batch Information

Analytical Batch: XMS12116
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/20 17:45
Container ID: 1202600004-A

Prep Batch: XXX43277
Prep Method: SW3535A
Prep Date/Time: 06/18/20 09:25
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL

Analytical Batch: XMS12120
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 07/08/20 20:16
Container ID: 1202600004-A

Prep Batch: XXX43277
Prep Method: SW3535A
Prep Date/Time: 06/18/20 09:25
Prep Initial Wt./Vol.: 248 mL
Prep Extract Vol: 1 mL

Print Date: 07/13/2020 3:16:43PM

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Results of **MW-9TS**

Client Sample ID: **MW-9TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600004
Lab Project ID: 1202600

Collection Date: 06/12/20 09:40
Received Date: 06/12/20 11:03
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	3.03		0.600	0.180	mg/L	1		06/22/20 17:49
Surrogates								
5a Androstane (surr)	91.2		50-150		%	1		06/22/20 17:49

Batch Information

Analytical Batch: XFC15619
Analytical Method: AK102
Analyst: A.L
Analytical Date/Time: 06/22/20 17:49
Container ID: 1202600004-C

Prep Batch: XXX43292
Prep Method: SW3520C
Prep Date/Time: 06/19/20 15:36
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 07/13/2020 3:16:43PM

J flagging is activated

Results of **MW-9TS**

Client Sample ID: **MW-9TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600004
Lab Project ID: 1202600

Collection Date: 06/12/20 09:40
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	11.0		1.00	0.310	mg/L	10		06/22/20 14:21
Surrogates								
4-Bromofluorobenzene (surr)	80.3		50-150		%	10		06/22/20 14:21

Batch Information

Analytical Batch: VFC15189
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 06/22/20 14:21
Container ID: 1202600004-F

Prep Batch: VXX35819
Prep Method: SW5030B
Prep Date/Time: 06/22/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/13/2020 3:16:43PM

J flagging is activated

Results of **MW-9TS**

Client Sample ID: **MW-9TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600004
Lab Project ID: 1202600

Collection Date: 06/12/20 09:40
Received Date: 06/12/20 11:03
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	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:05
1,1,1-Trichloroethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,1,2,2-Tetrachloroethane	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:05
1,1,2-Trichloroethane	10.0	U	20.0	6.00	ug/L	50		06/16/20 00:05
1,1-Dichloroethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,1-Dichloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,1-Dichloropropene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,2,3-Trichlorobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,2,3-Trichloropropane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,2,4-Trichlorobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,2,4-Trimethylbenzene	344		50.0	15.5	ug/L	50		06/16/20 00:05
1,2-Dibromo-3-chloropropane	250	U	500	155	ug/L	50		06/16/20 00:05
1,2-Dibromoethane	1.88	U	3.75	0.900	ug/L	50		06/16/20 00:05
1,2-Dichlorobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,2-Dichloroethane	36.2		25.0	7.50	ug/L	50		06/16/20 00:05
1,2-Dichloropropane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,3,5-Trimethylbenzene	76.4		50.0	15.5	ug/L	50		06/16/20 00:05
1,3-Dichlorobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
1,3-Dichloropropane	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:05
1,4-Dichlorobenzene	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:05
2,2-Dichloropropane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
2-Butanone (MEK)	250	U	500	155	ug/L	50		06/16/20 00:05
2-Chlorotoluene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
2-Hexanone	250	U	500	155	ug/L	50		06/16/20 00:05
4-Chlorotoluene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
4-Isopropyltoluene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
4-Methyl-2-pentanone (MIBK)	250	U	500	155	ug/L	50		06/16/20 00:05
Benzene	4310		20.0	6.00	ug/L	50		06/16/20 00:05
Bromobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Bromochloromethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Bromodichloromethane	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:05
Bromoform	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Bromomethane	125	U	250	100	ug/L	50		06/16/20 00:05
Carbon disulfide	250	U	500	155	ug/L	50		06/16/20 00:05
Carbon tetrachloride	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Chlorobenzene	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:05
Chloroethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05

Print Date: 07/13/2020 3:16:43PM

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Results of **MW-9TS**

Client Sample ID: **MW-9TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600004
Lab Project ID: 1202600

Collection Date: 06/12/20 09:40
Received Date: 06/12/20 11:03
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	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Chloromethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
cis-1,2-Dichloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
cis-1,3-Dichloropropene	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:05
Dibromochloromethane	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:05
Dibromomethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Dichlorodifluoromethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Ethylbenzene	246		50.0	15.5	ug/L	50		06/16/20 00:05
Freon-113	250	U	500	155	ug/L	50		06/16/20 00:05
Hexachlorobutadiene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Isopropylbenzene (Cumene)	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Methylene chloride	250	U	500	155	ug/L	50		06/16/20 00:05
Methyl-t-butyl ether	250	U	500	155	ug/L	50		06/16/20 00:05
Naphthalene	103		50.0	15.5	ug/L	50		06/16/20 00:05
n-Butylbenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
n-Propylbenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
o-Xylene	30.7	J	50.0	15.5	ug/L	50		06/16/20 00:05
P & M -Xylene	982		100	31.0	ug/L	50		06/16/20 00:05
sec-Butylbenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Styrene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
tert-Butylbenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Tetrachloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Toluene	93.6		50.0	15.5	ug/L	50		06/16/20 00:05
trans-1,2-Dichloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
trans-1,3-Dichloropropene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Trichloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Trichlorofluoromethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:05
Vinyl acetate	250	U	500	155	ug/L	50		06/16/20 00:05
Vinyl chloride	3.75	U	7.50	2.50	ug/L	50		06/16/20 00:05
Xylenes (total)	1010		150	50.0	ug/L	50		06/16/20 00:05
Surrogates								
1,2-Dichloroethane-D4 (surr)	97.2		81-118		%	50		06/16/20 00:05
4-Bromofluorobenzene (surr)	102		85-114		%	50		06/16/20 00:05
Toluene-d8 (surr)	96.2		89-112		%	50		06/16/20 00:05

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J flagging is activated

Results of **MW-9TS**

Client Sample ID: **MW-9TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600004
Lab Project ID: 1202600

Collection Date: 06/12/20 09:40
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20014
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 06/16/20 00:05
Container ID: 1202600004-E

Prep Batch: VXX35769
Prep Method: SW5030B
Prep Date/Time: 06/15/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **MW-99TS**

Client Sample ID: **MW-99TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600005
Lab Project ID: 1202600

Collection Date: 06/12/20 10:00
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Polynuclear Aromatics GC/MS**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
1-Methylnaphthalene	3.02		0.0517	0.0155	ug/L	1		07/06/20 18:05
2-Methylnaphthalene	1.28		0.0517	0.0155	ug/L	1		07/06/20 18:05
Acenaphthene	0.132		0.0517	0.0155	ug/L	1		07/06/20 18:05
Acenaphthylene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Anthracene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Benzo(a)Anthracene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Benzo[a]pyrene	0.0104 U		0.0207	0.00640	ug/L	1		07/06/20 18:05
Benzo[b]Fluoranthene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Benzo[g,h,i]perylene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Benzo[k]fluoranthene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Chrysene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Dibenzo[a,h]anthracene	0.0104 U		0.0207	0.00640	ug/L	1		07/06/20 18:05
Fluoranthene	0.0620		0.0517	0.0155	ug/L	1		07/06/20 18:05
Fluorene	0.152		0.0517	0.0155	ug/L	1		07/06/20 18:05
Indeno[1,2,3-c,d] pyrene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Naphthalene	9.05		0.103	0.0320	ug/L	1		07/06/20 18:05
Phenanthrene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Pyrene	0.0259 U		0.0517	0.0155	ug/L	1		07/06/20 18:05
Surrogates								
2-Methylnaphthalene-d10 (surr)	47.6		47-106		%	1		07/06/20 18:05
Fluoranthene-d10 (surr)	66.3		24-116		%	1		07/06/20 18:05

Batch Information

Analytical Batch: XMS12116
Analytical Method: 8270D SIM LV (PAH)
Analyst: DSD
Analytical Date/Time: 07/06/20 18:05
Container ID: 1202600005-A

Prep Batch: XXX43277
Prep Method: SW3535A
Prep Date/Time: 06/18/20 09:25
Prep Initial Wt./Vol.: 242 mL
Prep Extract Vol: 1 mL

Print Date: 07/13/2020 3:16:43PM

J flagging is activated

Results of **MW-99TS**

Client Sample ID: **MW-99TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600005
Lab Project ID: 1202600

Collection Date: 06/12/20 10:00
Received Date: 06/12/20 11:03
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	2.71		0.600	0.180	mg/L	1		06/22/20 17:59
Surrogates								
5a Androstane (surr)	93.9		50-150		%	1		06/22/20 17:59

Batch Information

Analytical Batch: XFC15619
Analytical Method: AK102
Analyst: A.L
Analytical Date/Time: 06/22/20 17:59
Container ID: 1202600005-C

Prep Batch: XXX43292
Prep Method: SW3520C
Prep Date/Time: 06/19/20 15:36
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 07/13/2020 3:16:43PM

J flagging is activated

Results of **MW-99TS**

Client Sample ID: **MW-99TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600005
Lab Project ID: 1202600

Collection Date: 06/12/20 10:00
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	9.53		1.00	0.310	mg/L	10		06/22/20 14:39
Surrogates								
4-Bromofluorobenzene (surr)	80.1		50-150		%	10		06/22/20 14:39

Batch Information

Analytical Batch: VFC15189
Analytical Method: AK101
Analyst: ALJ
Analytical Date/Time: 06/22/20 14:39
Container ID: 1202600005-F

Prep Batch: VXX35819
Prep Method: SW5030B
Prep Date/Time: 06/22/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Print Date: 07/13/2020 3:16:43PM

J flagging is activated

Results of **MW-99TS**

Client Sample ID: **MW-99TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600005
Lab Project ID: 1202600

Collection Date: 06/12/20 10:00
Received Date: 06/12/20 11:03
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	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:20
1,1,1-Trichloroethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,1,2,2-Tetrachloroethane	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:20
1,1,2-Trichloroethane	10.0	U	20.0	6.00	ug/L	50		06/16/20 00:20
1,1-Dichloroethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,1-Dichloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,1-Dichloropropene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,2,3-Trichlorobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,2,3-Trichloropropane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,2,4-Trichlorobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,2,4-Trimethylbenzene	304		50.0	15.5	ug/L	50		06/16/20 00:20
1,2-Dibromo-3-chloropropane	250	U	500	155	ug/L	50		06/16/20 00:20
1,2-Dibromoethane	1.88	U	3.75	0.900	ug/L	50		06/16/20 00:20
1,2-Dichlorobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,2-Dichloroethane	29.8		25.0	7.50	ug/L	50		06/16/20 00:20
1,2-Dichloropropane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,3,5-Trimethylbenzene	81.9		50.0	15.5	ug/L	50		06/16/20 00:20
1,3-Dichlorobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
1,3-Dichloropropane	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:20
1,4-Dichlorobenzene	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:20
2,2-Dichloropropane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
2-Butanone (MEK)	250	U	500	155	ug/L	50		06/16/20 00:20
2-Chlorotoluene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
2-Hexanone	250	U	500	155	ug/L	50		06/16/20 00:20
4-Chlorotoluene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
4-Isopropyltoluene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
4-Methyl-2-pentanone (MIBK)	250	U	500	155	ug/L	50		06/16/20 00:20
Benzene	3250		20.0	6.00	ug/L	50		06/16/20 00:20
Bromobenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Bromochloromethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Bromodichloromethane	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:20
Bromoform	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Bromomethane	125	U	250	100	ug/L	50		06/16/20 00:20
Carbon disulfide	250	U	500	155	ug/L	50		06/16/20 00:20
Carbon tetrachloride	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Chlorobenzene	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:20
Chloroethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20

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J flagging is activated

Results of **MW-99TS**

Client Sample ID: **MW-99TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600005
Lab Project ID: 1202600

Collection Date: 06/12/20 10:00
Received Date: 06/12/20 11:03
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	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Chloromethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
cis-1,2-Dichloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
cis-1,3-Dichloropropene	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:20
Dibromochloromethane	12.5	U	25.0	7.50	ug/L	50		06/16/20 00:20
Dibromomethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Dichlorodifluoromethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Ethylbenzene	110		50.0	15.5	ug/L	50		06/16/20 00:20
Freon-113	250	U	500	155	ug/L	50		06/16/20 00:20
Hexachlorobutadiene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Isopropylbenzene (Cumene)	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Methylene chloride	250	U	500	155	ug/L	50		06/16/20 00:20
Methyl-t-butyl ether	250	U	500	155	ug/L	50		06/16/20 00:20
Naphthalene	95.8		50.0	15.5	ug/L	50		06/16/20 00:20
n-Butylbenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
n-Propylbenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
o-Xylene	32.1	J	50.0	15.5	ug/L	50		06/16/20 00:20
P & M -Xylene	858		100	31.0	ug/L	50		06/16/20 00:20
sec-Butylbenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Styrene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
tert-Butylbenzene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Tetrachloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Toluene	68.9		50.0	15.5	ug/L	50		06/16/20 00:20
trans-1,2-Dichloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
trans-1,3-Dichloropropene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Trichloroethene	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Trichlorofluoromethane	25.0	U	50.0	15.5	ug/L	50		06/16/20 00:20
Vinyl acetate	250	U	500	155	ug/L	50		06/16/20 00:20
Vinyl chloride	3.75	U	7.50	2.50	ug/L	50		06/16/20 00:20
Xylenes (total)	890		150	50.0	ug/L	50		06/16/20 00:20
Surrogates								
1,2-Dichloroethane-D4 (surr)	99		81-118		%	50		06/16/20 00:20
4-Bromofluorobenzene (surr)	103		85-114		%	50		06/16/20 00:20
Toluene-d8 (surr)	99.4		89-112		%	50		06/16/20 00:20

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J flagging is activated

Results of **MW-99TS**

Client Sample ID: **MW-99TS**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600005
Lab Project ID: 1202600

Collection Date: 06/12/20 10:00
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20014
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 06/16/20 00:20
Container ID: 1202600005-E

Prep Batch: VXX35769
Prep Method: SW5030B
Prep Date/Time: 06/15/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600006
Lab Project ID: 1202600

Collection Date: 06/10/20 08:00
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile Fuels**

Parameter	Result	Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Gasoline Range Organics	0.0500	U	0.100	0.0310	mg/L	1		06/16/20 17:09
Surrogates								
4-Bromofluorobenzene (surr)	104		50-150		%	1		06/16/20 17:09

Batch Information

Analytical Batch: VFC15176
Analytical Method: AK101
Analyst: KAJ
Analytical Date/Time: 06/16/20 17:09
Container ID: 1202600006-D

Prep Batch: VXX35778
Prep Method: SW5030B
Prep Date/Time: 06/16/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600006
Lab Project ID: 1202600

Collection Date: 06/10/20 08:00
Received Date: 06/12/20 11:03
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		06/15/20 22:17
1,1,1-Trichloroethane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,1,2,2-Tetrachloroethane	0.250	U	0.500	0.150	ug/L	1		06/15/20 22:17
1,1,2-Trichloroethane	0.200	U	0.400	0.120	ug/L	1		06/15/20 22:17
1,1-Dichloroethane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,1-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,1-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,2,3-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,2,3-Trichloropropane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,2,4-Trichlorobenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,2,4-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,2-Dibromo-3-chloropropane	5.00	U	10.0	3.10	ug/L	1		06/15/20 22:17
1,2-Dibromoethane	0.0375	U	0.0750	0.0180	ug/L	1		06/15/20 22:17
1,2-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,2-Dichloroethane	0.250	U	0.500	0.150	ug/L	1		06/15/20 22:17
1,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,3,5-Trimethylbenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,3-Dichlorobenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
1,3-Dichloropropane	0.250	U	0.500	0.150	ug/L	1		06/15/20 22:17
1,4-Dichlorobenzene	0.250	U	0.500	0.150	ug/L	1		06/15/20 22:17
2,2-Dichloropropane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
2-Butanone (MEK)	5.00	U	10.0	3.10	ug/L	1		06/15/20 22:17
2-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
2-Hexanone	5.00	U	10.0	3.10	ug/L	1		06/15/20 22:17
4-Chlorotoluene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
4-Isopropyltoluene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
4-Methyl-2-pentanone (MIBK)	5.00	U	10.0	3.10	ug/L	1		06/15/20 22:17
Benzene	0.200	U	0.400	0.120	ug/L	1		06/15/20 22:17
Bromobenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Bromochloromethane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Bromodichloromethane	0.250	U	0.500	0.150	ug/L	1		06/15/20 22:17
Bromoform	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Bromomethane	2.50	U	5.00	2.00	ug/L	1		06/15/20 22:17
Carbon disulfide	5.00	U	10.0	3.10	ug/L	1		06/15/20 22:17
Carbon tetrachloride	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Chlorobenzene	0.250	U	0.500	0.150	ug/L	1		06/15/20 22:17
Chloroethane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17

Print Date: 07/13/2020 3:16:43PM

J flagging is activated

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600006
Lab Project ID: 1202600

Collection Date: 06/10/20 08:00
Received Date: 06/12/20 11:03
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		06/15/20 22:17
Chloromethane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
cis-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
cis-1,3-Dichloropropene	0.250	U	0.500	0.150	ug/L	1		06/15/20 22:17
Dibromochloromethane	0.250	U	0.500	0.150	ug/L	1		06/15/20 22:17
Dibromomethane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Dichlorodifluoromethane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Ethylbenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Freon-113	5.00	U	10.0	3.10	ug/L	1		06/15/20 22:17
Hexachlorobutadiene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Isopropylbenzene (Cumene)	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Methylene chloride	5.00	U	10.0	3.10	ug/L	1		06/15/20 22:17
Methyl-t-butyl ether	5.00	U	10.0	3.10	ug/L	1		06/15/20 22:17
Naphthalene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
n-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
n-Propylbenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
o-Xylene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
P & M -Xylene	1.00	U	2.00	0.620	ug/L	1		06/15/20 22:17
sec-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Styrene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
tert-Butylbenzene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Tetrachloroethene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Toluene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
trans-1,2-Dichloroethene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
trans-1,3-Dichloropropene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Trichloroethene	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Trichlorofluoromethane	0.500	U	1.00	0.310	ug/L	1		06/15/20 22:17
Vinyl acetate	5.00	U	10.0	3.10	ug/L	1		06/15/20 22:17
Vinyl chloride	0.0750	U	0.150	0.0500	ug/L	1		06/15/20 22:17
Xylenes (total)	1.50	U	3.00	1.00	ug/L	1		06/15/20 22:17
Surrogates								
1,2-Dichloroethane-D4 (surr)	102		81-118		%	1		06/15/20 22:17
4-Bromofluorobenzene (surr)	105		85-114		%	1		06/15/20 22:17
Toluene-d8 (surr)	99		89-112		%	1		06/15/20 22:17

Results of **Trip Blank**

Client Sample ID: **Trip Blank**
Client Project ID: **ML&P Transformer Shop**
Lab Sample ID: 1202600006
Lab Project ID: 1202600

Collection Date: 06/10/20 08:00
Received Date: 06/12/20 11:03
Matrix: Water (Surface, Eff., Ground)
Solids (%):
Location:

Results by **Volatile GC/MS**

Batch Information

Analytical Batch: VMS20014
Analytical Method: SW8260D
Analyst: NRB
Analytical Date/Time: 06/15/20 22:17
Container ID: 1202600006-A

Prep Batch: VXX35769
Prep Method: SW5030B
Prep Date/Time: 06/15/20 06:00
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1807700 [VXX/35769]
Blank Lab ID: 1563854

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202600004, 1202600005, 1202600006

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

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Method Blank

Blank ID: MB for HBN 1807700 [VXX/35769]
Blank Lab ID: 1563854

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202600004, 1202600005, 1202600006

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)	105	85-114		%
Toluene-d8 (surr)	100	89-112		%

Method Blank

Blank ID: MB for HBN 1807700 [VXX/35769]
Blank Lab ID: 1563854

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202600004, 1202600005, 1202600006

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units

Batch Information

Analytical Batch: VMS20014
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 6/15/2020 8:14:00PM

Prep Batch: VXX35769
Prep Method: SW5030B
Prep Date/Time: 6/15/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1202600 [VXX35769]
Blank Spike Lab ID: 1563855
Date Analyzed: 06/15/2020 20:30

Spike Duplicate ID: LCSD for HBN 1202600 [VXX35769]
Spike Duplicate Lab ID: 1563856
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202600004, 1202600005, 1202600006

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	29.6	99	30	29.5	99	(78-124)	0.29	(< 20)
1,1,1-Trichloroethane	30	30.8	103	30	30.5	102	(74-131)	0.86	(< 20)
1,1,2,2-Tetrachloroethane	30	30.2	101	30	29.7	99	(71-121)	1.40	(< 20)
1,1,2-Trichloroethane	30	30.2	101	30	30.2	101	(80-119)	0.04	(< 20)
1,1-Dichloroethane	30	29.2	98	30	29.7	99	(77-125)	1.50	(< 20)
1,1-Dichloroethene	30	28.2	94	30	27.2	91	(71-131)	3.70	(< 20)
1,1-Dichloropropene	30	31.4	105	30	31.2	104	(79-125)	0.81	(< 20)
1,2,3-Trichlorobenzene	30	28.9	96	30	29.9	100	(69-129)	3.40	(< 20)
1,2,3-Trichloropropane	30	29.0	97	30	28.8	96	(73-122)	0.83	(< 20)
1,2,4-Trichlorobenzene	30	29.1	97	30	30.0	100	(69-130)	2.90	(< 20)
1,2,4-Trimethylbenzene	30	31.0	103	30	31.0	103	(79-124)	0.12	(< 20)
1,2-Dibromo-3-chloropropane	30	30.2	101	30	30.1	100	(62-128)	0.25	(< 20)
1,2-Dibromoethane	30	30.7	102	30	30.6	102	(77-121)	0.38	(< 20)
1,2-Dichlorobenzene	30	29.9	100	30	29.9	100	(80-119)	0.03	(< 20)
1,2-Dichloroethane	30	28.9	97	30	28.9	96	(73-128)	0.09	(< 20)
1,2-Dichloropropane	30	31.4	105	30	31.3	104	(78-122)	0.36	(< 20)
1,3,5-Trimethylbenzene	30	30.5	102	30	30.4	101	(75-124)	0.21	(< 20)
1,3-Dichlorobenzene	30	29.7	99	30	29.8	99	(80-119)	0.35	(< 20)
1,3-Dichloropropane	30	30.5	102	30	30.3	101	(80-119)	0.49	(< 20)
1,4-Dichlorobenzene	30	29.8	99	30	29.8	99	(79-118)	0.05	(< 20)
2,2-Dichloropropane	30	31.5	105	30	31.2	104	(60-139)	0.83	(< 20)
2-Butanone (MEK)	90	98.2	109	90	96.7	107	(56-143)	1.60	(< 20)
2-Chlorotoluene	30	30.1	100	30	30.4	101	(79-122)	0.91	(< 20)
2-Hexanone	90	98.7	110	90	98.0	109	(57-139)	0.64	(< 20)
4-Chlorotoluene	30	30.1	100	30	29.9	100	(78-122)	0.59	(< 20)
4-Isopropyltoluene	30	30.7	102	30	30.9	103	(77-127)	0.51	(< 20)
4-Methyl-2-pentanone (MIBK)	90	96.5	107	90	95.4	106	(67-130)	1.20	(< 20)
Benzene	30	30.2	101	30	30.3	101	(79-120)	0.30	(< 20)
Bromobenzene	30	29.5	98	30	29.1	97	(80-120)	1.30	(< 20)
Bromochloromethane	30	29.3	98	30	29.2	98	(78-123)	0.19	(< 20)
Bromodichloromethane	30	30.7	102	30	30.6	102	(79-125)	0.52	(< 20)
Bromoform	30	29.4	98	30	29.3	98	(66-130)	0.36	(< 20)
Bromomethane	30	33.5	112	30	34.4	115	(53-141)	2.90	(< 20)
Carbon disulfide	45	41.7	93	45	40.1	89	(64-133)	3.90	(< 20)

Blank Spike Summary

Blank Spike ID: LCS for HBN 1202600 [VXX35769]
Blank Spike Lab ID: 1563855
Date Analyzed: 06/15/2020 20:30

Spike Duplicate ID: LCSD for HBN 1202600 [VXX35769]
Spike Duplicate Lab ID: 1563856
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202600004, 1202600005, 1202600006

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	30.6	102	30	30.3	101	(72-136)	0.82	(< 20)
Chlorobenzene	30	28.4	95	30	28.3	94	(82-118)	0.41	(< 20)
Chloroethane	30	28.7	96	30	26.6	89	(60-138)	7.50	(< 20)
Chloroform	30	29.7	99	30	29.6	99	(79-124)	0.15	(< 20)
Chloromethane	30	31.7	106	30	31.9	106	(50-139)	0.67	(< 20)
cis-1,2-Dichloroethene	30	29.8	100	30	30.1	100	(78-123)	0.97	(< 20)
cis-1,3-Dichloropropene	30	31.9	106	30	31.8	106	(75-124)	0.21	(< 20)
Dibromochloromethane	30	30.0	100	30	30.1	100	(74-126)	0.29	(< 20)
Dibromomethane	30	30.2	101	30	30.0	100	(79-123)	0.65	(< 20)
Dichlorodifluoromethane	30	28.7	96	30	27.4	92	(32-152)	4.60	(< 20)
Ethylbenzene	30	31.5	105	30	31.3	104	(79-121)	0.76	(< 20)
Freon-113	45	42.0	93	45	40.7	90	(70-136)	3.20	(< 20)
Hexachlorobutadiene	30	29.3	98	30	29.7	99	(66-134)	1.50	(< 20)
Isopropylbenzene (Cumene)	30	31.0	103	30	30.7	102	(72-131)	1.10	(< 20)
Methylene chloride	30	29.9	100	30	30.4	101	(74-124)	1.60	(< 20)
Methyl-t-butyl ether	45	45.9	102	45	46.7	104	(71-124)	1.80	(< 20)
Naphthalene	30	28.0	94	30	29.0	97	(61-128)	3.30	(< 20)
n-Butylbenzene	30	30.9	103	30	30.9	103	(75-128)	0.01	(< 20)
n-Propylbenzene	30	30.8	103	30	30.8	103	(76-126)	0.13	(< 20)
o-Xylene	30	30.6	102	30	30.7	102	(78-122)	0.45	(< 20)
P & M -Xylene	60	59.1	99	60	58.7	98	(80-121)	0.76	(< 20)
sec-Butylbenzene	30	30.7	102	30	30.7	102	(77-126)	0.15	(< 20)
Styrene	30	32.3	108	30	33.6	112	(78-123)	4.00	(< 20)
tert-Butylbenzene	30	30.2	101	30	30.3	101	(78-124)	0.32	(< 20)
Tetrachloroethene	30	29.8	99	30	29.6	99	(74-129)	0.57	(< 20)
Toluene	30	28.9	96	30	28.7	96	(80-121)	0.69	(< 20)
trans-1,2-Dichloroethene	30	30.5	102	30	30.7	102	(75-124)	0.47	(< 20)
trans-1,3-Dichloropropene	30	31.2	104	30	31.2	104	(73-127)	0.06	(< 20)
Trichloroethene	30	30.6	102	30	30.3	101	(79-123)	0.73	(< 20)
Trichlorofluoromethane	30	28.7	96	30	27.7	92	(65-141)	3.60	(< 20)
Vinyl acetate	30	32.2	107	30	32.6	109	(54-146)	1.20	(< 20)
Vinyl chloride	30	29.2	97	30	28.1	94	(58-137)	3.70	(< 20)
Xylenes (total)	90	89.7	100	90	89.4	99	(79-121)	0.35	(< 20)

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1202600 [VXX35769]
Blank Spike Lab ID: 1563855
Date Analyzed: 06/15/2020 20:30

Spike Duplicate ID: LCSD for HBN 1202600 [VXX35769]
Spike Duplicate Lab ID: 1563856
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202600004, 1202600005, 1202600006

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	97.4	97	30	97.3	97	(81-118)	0.12	
4-Bromofluorobenzene (surr)	30	101	101	30	102	102	(85-114)	0.77	
Toluene-d8 (surr)	30	99.4	99	30	99.6	100	(89-112)	0.15	

Batch Information

Analytical Batch: **VMS20014**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX35769**
Prep Method: **SW5030B**
Prep Date/Time: **06/15/2020 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1807747 [VXX/35777]
Blank Lab ID: 1564072

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202600001, 1202600002, 1202600003

Results by **SW8260D**

Parameter	Results	LOQ/CL	DL	Units
Benzene	0.200U	0.400	0.120	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
Toluene	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	99.5	81-118		%
4-Bromofluorobenzene (surr)	110	85-114		%
Toluene-d8 (surr)	98.1	89-112		%

Batch Information

Analytical Batch: VMS20017
Analytical Method: SW8260D
Instrument: Agilent 7890-75MS
Analyst: NRB
Analytical Date/Time: 6/16/2020 3:35:00PM

Prep Batch: VXX35777
Prep Method: SW5030B
Prep Date/Time: 6/16/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1202600 [VXX35777]
Blank Spike Lab ID: 1564073
Date Analyzed: 06/16/2020 16:21

Spike Duplicate ID: LCSD for HBN 1202600 [VXX35777]
Spike Duplicate Lab ID: 1564074
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202600001, 1202600002, 1202600003

Results by **SW8260D**

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Benzene	30	30.4	101	30	31.2	104	(79-120)	2.80	(< 20)
Ethylbenzene	30	31.4	105	30	31.4	105	(79-121)	0.12	(< 20)
o-Xylene	30	30.8	103	30	30.9	103	(78-122)	0.25	(< 20)
P & M -Xylene	60	57.3	96	60	57.2	95	(80-121)	0.19	(< 20)
Toluene	30	28.0	93	30	28.5	95	(80-121)	1.70	(< 20)
Xylenes (total)	90	88.1	98	90	88.1	98	(79-121)	0.04	(< 20)
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	92.5	93	30	93.2	93	(81-118)	0.69	
4-Bromofluorobenzene (surr)	30	107	107	30	106	106	(85-114)	1.40	
Toluene-d8 (surr)	30	97.6	98	30	97.2	97	(89-112)	0.43	

Batch Information

Analytical Batch: **VMS20017**
Analytical Method: **SW8260D**
Instrument: **Agilent 7890-75MS**
Analyst: **NRB**

Prep Batch: **VXX35777**
Prep Method: **SW5030B**
Prep Date/Time: **06/16/2020 06:00**
Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 07/13/2020 3:16:53PM

Method Blank

Blank ID: MB for HBN 1807765 [VXX/35778]
Blank Lab ID: 1564122

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202600001, 1202600002, 1202600003, 1202600006

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0389J	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	107	50-150		%

Batch Information

Analytical Batch: VFC15176
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: KAJ
Analytical Date/Time: 6/16/2020 1:21:00PM

Prep Batch: VXX35778
Prep Method: SW5030B
Prep Date/Time: 6/16/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1202600 [VXX35778]
Blank Spike Lab ID: 1564125
Date Analyzed: 06/16/2020 14:15

Spike Duplicate ID: LCSD for HBN 1202600 [VXX35778]
Spike Duplicate Lab ID: 1564126
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202600001, 1202600002, 1202600003, 1202600006

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	1.07	107	1.00	1.02	102	(60-120)	4.90	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	115	115				(50-150)		

Batch Information

Analytical Batch: **VFC15176**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **KAJ**

Prep Batch: **VXX35778**
Prep Method: **SW5030B**
Prep Date/Time: **06/16/2020 06:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1808019 [VXX/35819]
Blank Lab ID: 1565216

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202600004, 1202600005

Results by **AK101**

Parameter	Results	LOQ/CL	DL	Units
Gasoline Range Organics	0.0500U	0.100	0.0310	mg/L
Surrogates				
4-Bromofluorobenzene (surr)	80.3	50-150		%

Batch Information

Analytical Batch: VFC15189
Analytical Method: AK101
Instrument: Agilent 7890 PID/FID
Analyst: ALJ
Analytical Date/Time: 6/22/2020 9:29:00AM

Prep Batch: VXX35819
Prep Method: SW5030B
Prep Date/Time: 6/22/2020 6:00:00AM
Prep Initial Wt./Vol.: 5 mL
Prep Extract Vol: 5 mL

Blank Spike Summary

Blank Spike ID: LCS for HBN 1202600 [VXX35819]
Blank Spike Lab ID: 1565217
Date Analyzed: 06/22/2020 10:23

Spike Duplicate ID: LCSD for HBN 1202600 [VXX35819]
Spike Duplicate Lab ID: 1565218
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202600004, 1202600005

Results by **AK101**

	Blank Spike (mg/L)			Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Gasoline Range Organics	1.00	0.906	91	1.00	0.990	99	(60-120)	8.80	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	78.5	79	0.0500	76.4	76	(50-150)	2.70	

Batch Information

Analytical Batch: **VFC15189**
Analytical Method: **AK101**
Instrument: **Agilent 7890 PID/FID**
Analyst: **ALJ**

Prep Batch: **VXX35819**
Prep Method: **SW5030B**
Prep Date/Time: **06/22/2020 06:00**
Spike Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL
Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL

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Method Blank

Blank ID: MB for HBN 1807776 [XXX/43277]
Blank Lab ID: 1564172

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202600004, 1202600005

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

Parameter	Results	LOQ/CL	DL	Units
1-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
2-Methylnaphthalene	0.0250U	0.0500	0.0150	ug/L
Acenaphthene	0.0250U	0.0500	0.0150	ug/L
Acenaphthylene	0.0250U	0.0500	0.0150	ug/L
Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo(a)Anthracene	0.0250U	0.0500	0.0150	ug/L
Benzo[a]pyrene	0.0100U	0.0200	0.00620	ug/L
Benzo[b]Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Benzo[g,h,i]perylene	0.0250U	0.0500	0.0150	ug/L
Benzo[k]fluoranthene	0.0250U	0.0500	0.0150	ug/L
Chrysene	0.0250U	0.0500	0.0150	ug/L
Dibenzo[a,h]anthracene	0.0100U	0.0200	0.00620	ug/L
Fluoranthene	0.0250U	0.0500	0.0150	ug/L
Fluorene	0.0250U	0.0500	0.0150	ug/L
Indeno[1,2,3-c,d] pyrene	0.0250U	0.0500	0.0150	ug/L
Naphthalene	0.0500U	0.100	0.0310	ug/L
Phenanthrene	0.0250U	0.0500	0.0150	ug/L
Pyrene	0.0250U	0.0500	0.0150	ug/L
Surrogates				
2-Methylnaphthalene-d10 (surr)	50.7	47-106		%
Fluoranthene-d10 (surr)	69.6	24-116		%

Batch Information

Analytical Batch: XMS12116
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 7/6/2020 4:44:00PM

Prep Batch: XXX43277
Prep Method: SW3535A
Prep Date/Time: 6/18/2020 9:25:29AM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

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Blank Spike Summary

Blank Spike ID: LCS for HBN 1202600 [XXX43277]
Blank Spike Lab ID: 1564173
Date Analyzed: 07/06/2020 17:04

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202600004, 1202600005

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

Blank Spike (ug/L)

Parameter	Spike	Result	Rec (%)	CL
1-Methylnaphthalene	2	1.27	64	(41-115)
2-Methylnaphthalene	2	1.30	65	(39-114)
Acenaphthene	2	1.36	68	(48-114)
Acenaphthylene	2	1.33	66	(35-121)
Anthracene	2	1.60	80	(53-119)
Benzo(a)Anthracene	2	1.39	69	(59-120)
Benzo[a]pyrene	2	1.67	83	(53-120)
Benzo[b]Fluoranthene	2	1.76	88	(53-126)
Benzo[g,h,i]perylene	2	1.69	85	(44-128)
Benzo[k]fluoranthene	2	1.67	83	(54-125)
Chrysene	2	1.57	78	(57-120)
Dibenzo[a,h]anthracene	2	1.66	83	(44-131)
Fluoranthene	2	1.54	77	(58-120)
Fluorene	2	1.52	76	(50-118)
Indeno[1,2,3-c,d] pyrene	2	1.80	90	(48-130)
Naphthalene	2	1.27	63	(43-114)
Phenanthrene	2	1.58	79	(53-115)
Pyrene	2	1.52	76	(53-121)
Surrogates				
2-Methylnaphthalene-d10 (surr)	2	56.3	56	(47-106)
Fluoranthene-d10 (surr)	2	68.9	69	(24-116)

Batch Information

Analytical Batch: **XMS12116**
Analytical Method: **8270D SIM LV (PAH)**
Instrument: **SVA Agilent 780/5975 GC/MS**
Analyst: **DSD**

Prep Batch: **XXX43277**
Prep Method: **SW3535A**
Prep Date/Time: **06/18/2020 09:25**
Spike Init Wt./Vol.: 2 ug/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: Extract Vol:

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Matrix Spike Summary

Original Sample ID: 1202729004
MS Sample ID: 1564174 MS
MSD Sample ID: 1564175 MSD

Analysis Date: 07/06/2020 20:29
Analysis Date: 07/06/2020 20:49
Analysis Date: 07/06/2020 21:10
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202600004, 1202600005

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

		Matrix Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	RPD (%)	RPD CL
Acenaphthene	0.0256U	2.05	1.39	68	2.05	1.40	68	48-114	0.79	(< 20)
Acenaphthylene	0.0256U	2.05	1.45	71	2.05	1.59	78	35-121	9.50	(< 20)
Anthracene	0.0256U	2.05	1.51	74	2.05	1.61	79	53-119	6.00	(< 20)
Benzo(a)Anthracene	0.0256U	2.05	1.23	60	2.05	1.33	65	59-120	7.50	(< 20)
Benzo[a]pyrene	0.0103U	2.05	1.47	72	2.05	1.57	77	53-120	6.70	(< 20)
Benzo[b]Fluoranthene	0.0256U	2.05	1.48	72	2.05	1.58	77	53-126	6.40	(< 20)
Benzo[g,h,i]perylene	0.0256U	2.05	1.41	69	2.05	1.51	74	44-128	6.70	(< 20)
Benzo[k]fluoranthene	0.0256U	2.05	1.42	69	2.05	1.51	74	54-125	5.90	(< 20)
Chrysene	0.0256U	2.05	1.4	69	2.05	1.47	72	57-120	4.40	(< 20)
Dibenzo[a,h]anthracene	0.0103U	2.05	1.35	66	2.05	1.54	75	44-131	13.30	(< 20)
Fluoranthene	0.0256U	2.05	1.43	70	2.05	1.49	73	58-120	4.60	(< 20)
Fluorene	0.0256U	2.05	1.52	74	2.05	1.60	78	50-118	5.20	(< 20)
Indeno[1,2,3-c,d] pyrene	0.0256U	2.05	1.49	73	2.05	1.62	79	48-130	8.10	(< 20)
Naphthalene	0.0510U	2.05	1.37	67	2.05	1.34	65	43-114	2.30	(< 20)
Phenanthrene	0.0256U	2.05	1.49	73	2.05	1.58	77	53-115	6.00	(< 20)
Pyrene	0.0256U	2.05	1.41	69	2.05	1.46	71	53-121	3.70	(< 20)
Surrogates										
2-Methylnaphthalene-d10 (surr)		2.05	1.18	58	2.05	1.23	60	47-106	4.40	
Fluoranthene-d10 (surr)		2.05	1.31	64	2.05	1.36	66	24-116	3.70	

Batch Information

Analytical Batch: XMS12116
Analytical Method: 8270D SIM LV (PAH)
Instrument: SVA Agilent 780/5975 GC/MS
Analyst: DSD
Analytical Date/Time: 7/6/2020 8:49:00PM

Prep Batch: XXX43277
Prep Method: 3535 Solid Phase Ext for 8270 PAH SIM LV
Prep Date/Time: 6/18/2020 9:25:29AM
Prep Initial Wt./Vol.: 244.00mL
Prep Extract Vol: 1.00mL

Print Date: 07/13/2020 3:17:07PM

Method Blank

Blank ID: MB for HBN 1807861 [XXX/43292]
Blank Lab ID: 1564501

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1202600001, 1202600002, 1202600003, 1202600004, 1202600005

Results by **AK102**

Parameter	Results	LOQ/CL	DL	Units
Diesel Range Organics	0.300U	0.600	0.180	mg/L
Surrogates				
5a Androstane (surr)	98.4	60-120		%

Batch Information

Analytical Batch: XFC15619
Analytical Method: AK102
Instrument: Agilent 7890B F
Analyst: A.L
Analytical Date/Time: 6/22/2020 4:49:00PM

Prep Batch: XXX43292
Prep Method: SW3520C
Prep Date/Time: 6/19/2020 3:36:54PM
Prep Initial Wt./Vol.: 250 mL
Prep Extract Vol: 1 mL

Print Date: 07/13/2020 3:17:08PM

Blank Spike Summary

Blank Spike ID: LCS for HBN 1202600 [XXX43292]
Blank Spike Lab ID: 1564502
Date Analyzed: 06/22/2020 16:59

Spike Duplicate ID: LCSD for HBN 1202600 [XXX43292]
Spike Duplicate Lab ID: 1564503
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1202600001, 1202600002, 1202600003, 1202600004, 1202600005

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	20.6	103	20	19.7	98	(75-125)	4.40	(< 20)
Surrogates									
5a Androstane (surr)	0.4	107	107	0.4	107	107	(60-120)	0.24	

Batch Information

Analytical Batch: **XFC15619**
Analytical Method: **AK102**
Instrument: **Agilent 7890B F**
Analyst: **A.L**

Prep Batch: **XXX43292**
Prep Method: **SW3520C**
Prep Date/Time: **06/19/2020 15:36**
Spike Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 20 mg/L Extract Vol: 1 mL

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1202600

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Instructions: Sections 1 - 5 must be filled out.
Omissions may delay the onset of analysis.

Section 1

CLIENT: SLR Alaska

CONTACT: Bret Berglund — PHONE #: 907-222-1112

PROJECT NAME: MLP Transformer Shop — PROJECT/ PWSID/ PERMIT#:

REPORTS TO: Bret Berglund — E-MAIL: bberglund@slrconsulting.com — Profile #: 358616 gm

INVOICE TO: SLR — QUOTE #: — P.O. #: 105.00528.18001

Section 2

RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/yy	TIME HH:MM	MATRIX/ MATRIX CODE	# CONTAINERS	Comp Grab MI (Multi-incremental)	Preservative: HCl	HCl	HCl	HCl	None	Analysis*										REMARKS/LOC ID
							BTEX SW8260D	VOCs SW8260D	GRO AK101	DRO AK102	PAH SIM SW8270D											
1AH	MW-5TS	6/10/20	10:28	Water	8	G	X		X	X												
2AH	MW-7TS	6/10/20	11:40	Water	8	G	X		X	X												
3AH	MW-6TS	6/10/20	12:45	Water	8	G	X		X	X												
4AS	MW-9TS	6/12/20	09:40	Water	10	G		X	X	X	X											
5AS	MW-99TS	6/12/20	10:00	Water	10	G		X	X	X	X											
6AF	Trip Blank	6/10/20	08:00	Water	6	G		X	X													

NOTE:
*The following analyses require specific method and/or compound list: BTEX, Metals, PFAS

Section 5

Relinquished By:	Date	Time	Received By:
(1)	6/12/20	10:59	
(2)			
(3)			
(4)	6/12/20	11:03	Received For Laboratory By: RJC

Section 4

DOD Project? Yes (No)

Cooler ID:

Data Deliverable Requirements: level 2 + DV

Requested Turnaround Time and/or Special Instructions: Standard

Temp Blank °C: 4.9 D57 or Ambient [ ]

Chain of Custody Seal: (Circle) INTACT BROKEN (ABSENT)

Delivery Method: Hand Delivery [ ] Commerical Delivery [ ]

SLR ML P TRANSFORMER SHOP GW 20200604

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3180 Peger Rd. Ste. 190, Fairbanks, AK 99709 (ph) 907-474-8656

Sample Kit Request

1202600

Client pickup Date: 6/8/2020 **Time:** 08:00

Be sure to ask if client will ship by ground (DOT) or air carrier (IATA)

Does a Profile exist in LIMS? If not, please send a request for new profile build.

Client Name: SLR
Ordered By: Nick Wells / Bret Berglund
Email: nwells@slrconsulting.com; bberglund@slrconsulting.com
Project Name: ML&P Transformer Shop GW 00528.20001 T0351
Quote #:

Delivery Address:

Deliver to client:
Ship by/Air Carrier:
Airbill Number:
Date to ship by:
Notes:
Kit request taken by: JAN **Date:** June 4, 2020
Kit prepared by: JS **Date:** 6/5/20
Kit *(including lid tightness for pres'd bottles)* checked by: NFC **Date:** 6/5/20
Kit packed & shipped by: NFC **Date:** 6/6/20

Filename: SKIT_SLR_ML&P Transformer Shop GW_2020-06-04 ***Required Items**

No. Samples	Matrix	Analysis	Container Size & Type		Pres.	Preservative Bottle Lot #	Preservative Lot #	Hold Time	# QC Bottles	Total Bottles
5	Water	AK101 - GRO	3 x 40 mL	VOA	HCl			14 d	0	15
4	Water	8260D - BTEX	3 x 40 mL	VOA	HCl			14 d	0	12
5	Water	AK102 - DRO	2 x 250 mL	Amber	HCl			14 d	0	10
3	Water	8260D - VOC	3 x 40 mL	VOA	HCl			14 d	0	9
3	Water	8270D SIM - PAH	2 x 250 mL	Amber	None			7 d	0	6

Note: The first 10 Analysis and Preservative columns will auto-fill up to the capacity of the associated COC.

Additional Information		Notes for Kit Prep
Pack for Shipment via:	N/A	
Temperature Blank:	Yes - Small (125 mL)	
Trip Blank:	Yes - Water (8260, AK101, 8021, 624)	2 x Water Trip Blanks
Coolers:	Yes	
Gel Ice:	Yes	FROZEN GEL ICE
Labels:	Yes	
Custody Seals:	Yes	
Paper Chain of Custody:	Yes - Standard COC	
Lot Number Tracking (Required for DOD):	No	

Attention Client/Sampler:

1. Do not rinse container, be aware of any acid preservative.
2. Fill container, but do not overfill (except volatiles).
3. Label the container with your sample ID and date/time of collection
4. Fill out the Chain of Custody.
5. Add frozen gel packs to your cooler and pack to prevent breakage.

If you have any questions please contact your Project Manager.

e-Sample Receipt Form

SGS Workorder #: **1202600**

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 @ 4.9 °C Therm. ID: D57
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?	Yes	An extra trip blank set receivedwith samples labeled " Do not analyze this one".Proceed to dispose.
Were all water VOA vials free of headspace (i.e., bubbles ≤ 6mm)?	Yes	
Were all soil VOAs field extracted with MeOH+BFB?	N/A	

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

Additional notes (if applicable):

Sample Containers and Preservatives

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition
1202600001-A	HCL to pH < 2	OK			
1202600001-B	HCL to pH < 2	OK			
1202600001-C	HCL to pH < 2	OK			
1202600001-D	HCL to pH < 2	OK			
1202600001-E	HCL to pH < 2	OK			
1202600001-F	HCL to pH < 2	OK			
1202600001-G	HCL to pH < 2	OK			
1202600001-H	HCL to pH < 2	OK			
1202600002-A	HCL to pH < 2	OK			
1202600002-B	HCL to pH < 2	OK			
1202600002-C	HCL to pH < 2	OK			
1202600002-D	HCL to pH < 2	OK			
1202600002-E	HCL to pH < 2	OK			
1202600002-F	HCL to pH < 2	OK			
1202600002-G	HCL to pH < 2	OK			
1202600002-H	HCL to pH < 2	OK			
1202600003-A	HCL to pH < 2	OK			
1202600003-B	HCL to pH < 2	OK			
1202600003-C	HCL to pH < 2	OK			
1202600003-D	HCL to pH < 2	OK			
1202600003-E	HCL to pH < 2	OK			
1202600003-F	HCL to pH < 2	OK			
1202600003-G	HCL to pH < 2	OK			
1202600003-H	HCL to pH < 2	OK			
1202600004-A	No Preservative Required	OK			
1202600004-B	No Preservative Required	OK			
1202600004-C	HCL to pH < 2	OK			
1202600004-D	HCL to pH < 2	OK			
1202600004-E	HCL to pH < 2	OK			
1202600004-F	HCL to pH < 2	OK			
1202600004-G	HCL to pH < 2	OK			
1202600004-H	HCL to pH < 2	OK			
1202600004-I	HCL to pH < 2	OK			
1202600004-J	HCL to pH < 2	OK			
1202600005-A	No Preservative Required	OK			
1202600005-B	No Preservative Required	OK			
1202600005-C	HCL to pH < 2	OK			
1202600005-D	HCL to pH < 2	OK			
1202600005-E	HCL to pH < 2	OK			
1202600005-F	HCL to pH < 2	OK			
1202600005-G	HCL to pH < 2	OK			
1202600005-H	HCL to pH < 2	OK			
1202600005-I	HCL to pH < 2	OK			
1202600005-J	HCL to pH < 2	OK			
1202600006-A	HCL to pH < 2	OK			
1202600006-B	HCL to pH < 2	OK			
1202600006-C	HCL to pH < 2	OK			
1202600006-D	HCL to pH < 2	OK			
1202600006-E	HCL to pH < 2	OK			
1202600006-F	HCL to pH < 2	OK			

Container Id	Preservative	Container Condition	Container Id	Preservative	Container Condition

Container Condition Glossary

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

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