



August 7, 2018

Michael Hooper
Alaska Department of Environmental Conservation
610 University Ave
Fairbanks, AK 99709-3643

Re: Work Plan for Sampling Groundwater at the Carrs-Foodland Site in Fairbanks, AK.

Dear Mr. Hooper,

This Work Plan was prepared by SLR International Corporation (SLR) on behalf of the Bachner Company, Inc. in response to a request by the Alaska Department of Environmental Conservation (ADEC) to conduct groundwater monitoring at the Former Carrs-Foodland Site in Fairbanks (Hazard ID 1397), (ADEC 2017b). The Site is reportedly impacted by historical release(s) from a former 500 gallon underground heating oil tank (former Bakery UST) removed in 1991 (Shannon and Wilson 2002). The tank was located next to the Foodland Building, and is the current location of monitoring well MW-3. ADEC has requested that groundwater is sampled at the source area (MW-3) and at least one downgradient well on an annual basis until a stable and decreasing trend can be established for DRO concentrations or until the result are less than the DRO groundwater cleanup level in 18 AAC 75.345 Table C. As part of this Work Plan, SLR compiled historical data from MW-3 (Table 1) which will be used for comparison subsequent data. The following activities will be performed to accomplish the Work Plan objectives:

- 1) Collect a groundwater sample at well MW-3 on north side of the Foodland Building and have the sample analyzed for Diesel range organics (DRO), volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAHs);
- 2) Collect a duplicate sample from MW-3 for laboratory quality control and quality assurance (QA/QC);
- 3) Collect a groundwater sample at a downgradient well in the area northwest of the Foodland Site and have the sample analyzed for DRO and VOCs;
- 4) Containerize purge water and transport to NRC in Fairbanks for disposal; and
- 5) Prepare a sampling report consistent with ADEC requirements, including a data quality assurance review (QAR) of laboratory data and ADEC checklist. SLR will use the data to demonstrate that criteria for ceasing sampling have been met, if appropriate.

The sampling will be completed following ADEC field sampling guidance (ADEC 2017a). An SLR scientist who is a qualified environmental professional as defined by 18 AAC 75.333 will collect the samples for lab analysis. The downgradient well will be offsite from the Carrs-Foodland property. The proposed well is one referred to as MW-34A (formerly TB124A and also referred to as MW-34 Shallow because it is the shallowest well in a well cluster). It is SLR's understanding, ADEC will arrange access to the well with the property owner. Groundwater purged from the two wells be containerized and disposed as Resource Conservation and Recovery Act (RCRA) hazardous waste due to the presence of a chlorinated solvent plume relating to a former laundromat located upgradient from the Carrs-Foodland Site (Athna 2014),

Former Foodland Site-Work Plan for Groundwater Monitoring Page 2

unless results indicate RCRA F-2 listed solvents are not detectable. SLR assumes that the integrity of the wells has not been damaged and they are suitable for sampling.

Groundwater samples will be collected using low stress low-flow sampling methodology, in accordance with the most current ADEC Field Sampling Guidance. The low-stress low-flow sampling method consists of purging wells at a low rate with a goal to maintain drawdown of the water level within the well casing at less than 0.3 ft. This methodology includes gauging wells prior to purging and monitoring the depth to water throughout purging. Well purging will be conducted by using a down-hole pump with an adjustable flow rate. The flow rate will be monitored and adjusted so drawdown is minimized.

Water quality parameters will be measured at regular intervals during purging and will be recorded on the field water sampling data sheet. The parameter collection interval will be determined as no less than the time needed for one volume of the flow-through cell to be fully replaced (i.e., for a 500 milliliters (ml) flow-through cell, pumping at 100 ml per minute, the parameter collection interval must not be less than 5 minutes). Purging will be considered complete once water quality parameters have stabilized and drawdown is stable. The parameter readings will be considered stable when three successive discrete measurements are within the following criteria:

- Temperature (°C), plus minus (\pm) 3 percent (minimum of ± 0.2 °C);
- pH, ± 0.1 standard units;
- Specific conductance, ± 3 percent;
- Oxidation-reduction potential, ± 10 millivolts;
- Dissolved oxygen, ± 10 percent; and
- Turbidity, ± 10 percent, or below 10 nephelometric turbidity units.

Sample collection may occur once parameters have stabilized in three successive discrete measurements. The pumping rate during sampling must not exceed the rate used during purging.

If the water level is stabilized after being drawn down more than 0.3 ft., low-stress low-flow sampling can still be performed; however minimizing drawdown (and therefore flow rate) is preferred in order to minimize stress to the aquifer.

If well water yield is insufficient to maintain a stable water level at practical pumping rates, the well will be sampled after 3 casing volumes have been removed or the well is purged dry. In these cases, a sample may be collected from the well after it has recharged to approximately 80 percent of its pre-purge volume. If purged dry, in order to ensure no stagnant casing water was left in the well, a pump that draws water from its bottom end or peristaltic pump will be used to evacuate well. After sufficient recharge, water can be pumped directly into sample containers without any purging. If water volume permits after sampling for laboratory analysis, one aliquot of water will be collected for water quality parameters, which will be recorded on the field water sampling data sheet.

Upon collection groundwater samples will be labeled and placed into a chilled cooler as soon as possible after collection under chain of custody (COC) procedures. Samples will be transported to the SGS North America (SGS) laboratory in Fairbanks. Sample and cooler temperatures will be maintained at approximately 4 °C, ± 2 °C, throughout transport to the laboratory. Samples will be handled and

Former Foodland Site-Work Plan for Groundwater Monitoring
Page 3

transported in a manner that maintains sample integrity and does not exceed specified holding times. Each sample and any accompanying trip blank(s) will be documented on a COC form.

Groundwater samples will be analyzed for the following:

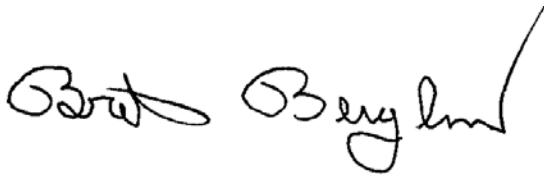
- DRO by Alaska Method AK102 (MW-3 and downgradient well);
- VOCs by EPA Method 8260c (MW-3 and downgradient well); and
- PAHs by EPA Method 8270-SIM (MW-3 only).

Field quality assurance and quality control will be maintained by adhering to the procedures described in this Plan. The SLR field scientist will print his/her full name on any field sampling form used during site work. Each sample will be documented on a COC form and submitted to SGS. One duplicate sample will be collected from well MW-3 and analyzed for DRO and VOCs.

SLR will complete an ADEC Laboratory Data Review Checklist in accordance with the most current ADEC guidance. In addition, SLR will complete a quality assurance review, which will be submitted as part of the final report. The sampling is planned to occur in August or September 2018. If you have questions, please contact me directly at 907-563-2128.

Sincerely,

SLR International Corporation



Bret Berglund, C.P.G.
Principal Scientist/Project Manager

Cc: John Bachner, Bachner Company, Inc.

Enc Table 1: Previous Groundwater Sample Results for MW-3
Figure 1: Site Map

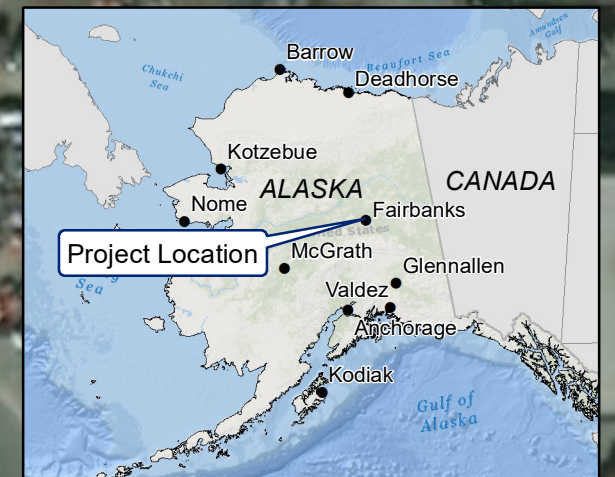
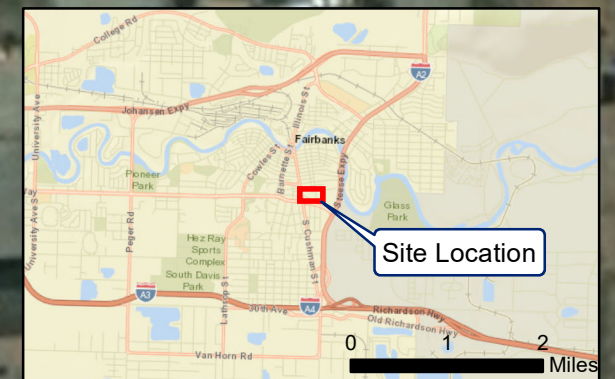
References:



Ahtna Engineering. 2014. SFY 2104 Gaffney East: Groundwater Monitoring and Limited Addition Characterization Report. October.

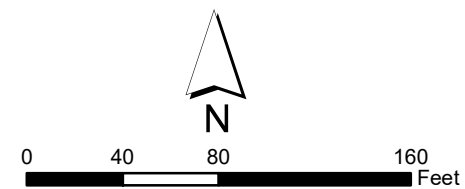
Alaska Department of Environmental Conservation (ADEC). 2017. Field Sampling Guidance. August.

ADEC. 2017. Groundwater Monitoring-Former Carrs Foodland (file 102.38.027) August 24.

Shannon and Wilson (S&W). 2002. Level 1 Environmental Site Assessment, Carrs/Safeway Foodland, Fairbanks Alaska. November 18.



- Legend**
-  Approximate Monitoring Well Location
 -  Approximate Former Bakery UST



**FORMER CARRS-FOODLAND
GROUNDWATER SAMPLING WORK PLAN
FAIRBANKS, ALASKA**

Drawing SITE MAP		
Date	August 03, 2018	Scale 1 inch = 80 feet
File Name	F1 Site Map_Foodland_18.mxd	Project No. 105.00774.18001
		Fig. No. 1

Table 1: Former Carrs Foodland Site: Previous Sample Results for Monitoring Well MW-3									
Analyte	DRO (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	PCE (mg/L)	TCE (mg/L)	Reference	
Groundwater Cleanup Level	1.5	0.0046	1.1	0.015	0.19	0.041	0.0028	18 AAC 75, Table C	
Well ID	Sample Date	Result							
MW-3	Jan-94	NA	0.0350	0.001	0.052	0.180	NA	NA	1
MW-3	Apr-94	NA	0.0380	0.002	0.051	0.230	NA	NA	1
MW-3	Jul-94	NA	0.0080	<0.001	0.042	0.140	NA	NA	1
MW-3	Oct-94	NA	0.0280	0.002	0.044	0.250	NA	NA	1
MW-3	Jan-95	NA	0.0320	0.001	0.062	0.260	NA	NA	1
MW-3	Oct-95	NA	0.0100	0.001	0.040	0.124	NA	NA	1
MW-3	11/20/2002	11.8	0.0037	<0.002	0.032	0.121	NA	NA	1
MW-3	9/4/2009	13.6	0.00162	ND	0.027	0.108	ND	ND	2
MW-3	9/1/2012	96.3	0.00312	0.00192	0.0158	0.0832	ND	ND	3
MW-3	10/16/2013	66.4	0.00261	0.00082	0.0201	0.0827	ND	ND	4

Abbreviations

 Exceeds screening criteria

DRO Diesel range organics

mg/kg milligrams per kilogram or parts per million

NA Sample not analyzed for this compound.

ND Analyte not detected

PCE tetrachloroethylene

TCE trichloroethylene

References

- 1- Shannon & Wilson, Inc., 2002. Level 1 Environmental Site Assessment, Cars/Safeway Foodland, Fairbanks, Alaska. November 18.
- 2- SGS North America, Inc. (SGS), 2009. Laboratory Report of Analysis. September 17.
- 3- SLR International Corp, 2012. Bachner/Foodland Site Transmittal of Validated Data. October 4.
- 4- SGS , 2013. Laboratory Report of Analysis. Report Number 1138619. October 29.