

GROUNDWATER MONITORING REPORT

2143 VAN HORN ROAD FAIRBANKS, ALASKA

November 11, 2013

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November 11, 2013

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1. INTRODUCTION

This report presents results of the groundwater monitoring event conducted at 2143 Van Horn Road in Fairbanks, Alaska on September 17, 2013. The monitoring effort was conducted by Rescon Alaska, LLC (Rescon) to collect additional groundwater analytical data for an evaluation of existing contamination concerns at the property. The work was performed on behalf of the owners of the property, Mary and John Lutz (herein referred to as the "client"). This report discusses the field activities that were conducted, the results of the groundwater investigation, and provides recommendations for future activities for the property.

1.1. Site Description

The subject property (herein referred to as the "site") is located within Lot 10, Block 1, Metro Industrial Airpark Subdivision. The site address is 2143 Van Horn Road and is situated on the south side of Van Horn Road (Figures 1). Three separate structures including two warehouse shops and a retail building are present at the site. The site is serviced by community wastewater, electric, and communication utilities. An on-site well provides the water source for the property. Analytical testing of the well in 2007 indicated that concentrations of petroleum and solvent contaminants were not present in the water source.

The elevation of the property is approximately 132 feet above mean sea level with little observable topographic relief across the Site. The water table throughout the Fairbanks lowlands is usually 10 to 20 feet below the surface, depending on ground elevations and groundwater stage, with water table fluctuations on the order of 2 to 5 feet seasonally. Groundwater under the Site is likely to be influenced by changes in water levels of the Tanana and Chena Rivers and is estimated to vary seasonally between 10 to 15 feet below the ground surface with a typical hydraulic gradient of 0.003 foot/foot or less.

1.2. Project History and Previous Investigations

In July 2006, Nortech Engineering (Nortech) conducted a Phase I Environmental Site Assessment (ESA) inspection at the subject property for the client prior to listing the property for sale. The Phase I ESA identified several environmental concerns on the site. The primary environmental concerns related to the finding of six floor drains/sumps in the two shops on the eastern side of the property. A second environmental concern at the site identified was the apparent feed/return lines to a buried heating oil storage tank outside of the south shop. Other environmental concerns included the presence of a number of drums around the site and numerous areas of stained surface soils associated with previously parked vehicles.

The initial site characterization consisted of the collection of soil and groundwater samples from each of the six floor drain structures using a direct push drilling rig. The initial groundwater characterization showed that soil beneath the north shop building had

elevated chromium concentrations. However, analysis of the groundwater at that location did not detect chromium concentrations.

Soil and groundwater sampling in the south shop building detected diesel range organics (DRO) and residual range organics (RRO) above the respective cleanup levels established by the Alaska Department of Environmental Conservation (ADEC). Gasoline range organics (GRO), volatile organic compounds (VOCs including benzene, toluene, ethylbenzene, and xylenes), polycyclic aromatic hydrocarbons (PAHs), and RCRA 8 metals were not detected above ADEC cleanup levels and were not considered contaminants of concern at the site.

The initial site characterization estimated that up to 120 to 140 cubic yards of DRO/RRO contaminated soil remain above the groundwater table beneath the south shop. Additionally, the floor drain structures were identified and reported to EPA as Class V injection wells. The Nortech report provided the EPA with inventory forms and a pre-closure notification prior to closing the structures.

Nortech completed a Phase II corrective action and groundwater characterization work at the site in 2006. This work included removal of the six floor drain structures and field screening with soil sampling at these six locations. Groundwater samples were collected from beneath the floor drain in the south shop, the water supply well, and at nine locations around the south shop. The investigation effort was able to delineate the extent of groundwater impacted with DRO above the ADEC groundwater cleanup level (GCL). Based on the extent of groundwater impact, Nortech recommended the installation of five permanent monitoring wells in and around the south shop to verify the stability of DRO contamination at the site.

In 2012, Rescon assumed management of the environmental monitoring on behalf of the client. In October 2012, Rescon installed five groundwater wells to monitor the contaminants of concern and evaluate the hydraulic gradient at the site (Figure 2). Based on the measured groundwater elevations, Rescon concluded that the groundwater gradient at the site flowed to the southwest.

Analysis of the groundwater samples reported that only one well, MW-1, contained a DRO concentration above the ADEC cleanup level. MW-1 was placed inside the south shop building in an area of known DRO contamination in the vadose zone. The MW-1 well is located up gradient of wells MW-3 and MW-4, which reported DRO concentrations below the ADEC cleanup level. As a result, it was concluded that the diesel contamination beneath the south shop building was not migrating down gradient from the source area.

In comparison with analytical results from the Nortech investigation efforts, the 2012 results indicated that DRO concentrations beneath, and around the south shop building had decreased from the levels measured in 2007.

Rescon recommended a second round of sampling in 2013 to confirm the results reported during the 2012 effort. Based on the fact that the contaminant source was delineated and was not found to be migrating offsite, Rescon concluded that if, in 2013,

DRO concentrations continued to decline or at least remained stable, the client could request from ADEC a status of cleanup complete with institutional controls for the site.

1.3. Project Objectives

Rescon returned to the site in September 2013 to perform a second round of groundwater monitoring. As stated above in Section 1.2, previous environmental investigations at the site had identified DRO impacted soil and groundwater beneath the south shop building. The objective of the 2013 field effort was to assess the current groundwater conditions to evaluate the stability of the contaminant source area and the off-site migration concern. The specific objectives of this project were as follows:

- Calculate an updated groundwater hydraulic gradient to compare with the findings from the 2012 monitoring effort.
- Download groundwater elevation data from transducers installed in three monitoring wells for analysis of the groundwater gradient and flow direction at the site over the course of the year.
- Collect groundwater samples from the five site monitoring wells for analysis of the DRO and RRO concentrations in the groundwater.

1.4. Groundwater Cleanup Criteria

The cleanup criteria for this site were selected based on the GCLs listed in the ADEC regulation 18 AAC 75; *Oil and Other Hazardous Substances Pollution Control* (18 AAC 75.341). Groundwater contaminant cleanup levels are listed in Table C of the regulation. Groundwater cleanup levels for petroleum hydrocarbon contaminants at the site are shown in Tables 1 and 2 alongside the laboratory analytical data.

1.5. Limitations

Work for this project was performed, and this report prepared, in accordance with generally accepted professional practices for the nature and conditions of the work completed in the same and similar localities, at the time that the work was performed. It is intended for the exclusive use of John and Mary Lutz. This report is not meant to represent a legal opinion, and no other warranty, express or implied, is made.

2. FIELD ACTIVITIES SUMMARY

The project field activities were performed on September 17, 2013 at the project site in Fairbanks, Alaska. A summary of these activities are described below. The field notes and groundwater data sheets from the field effort are included in Appendix A. Weather conditions during these field activities were generally around 40 degrees Fahrenheit with cloudy to overcast skies.

2.1. Groundwater Monitoring

Upon arriving at the site, Rescon located and inspected the condition of the monitoring wells at the site. Field personnel opened the well monument covers and assessed the condition of the casings. The wells were observed to be in good condition with no repairs or necessary maintenance required.

2.1.1. Groundwater Depth Measurements

The Rescon field team opened the well casings and collected groundwater depth measurements. The groundwater depths were measured using an electronic water level meter with graduated cable. For consistency purposes, measurements were collected from the north edge of the well casings. The depth measurements were measured to the nearest hundredth of a foot and recorded in the field log book.

2.1.2. Monitoring Groundwater Quality Parameters

Prior to collecting groundwater samples, the field team purged the monitoring wells in accordance with the low-flow sampling techniques outlined in the ADEC *Draft Field Sampling Guidance* (ADEC, 2010). The groundwater was pumped to the surface using a peristaltic pump and dedicated polyethylene tubing. At the surface, the tubing was connected to a flow-through cell for measurement of water quality parameters using a YSI 556 meter (YSI). Groundwater quality parameters were monitored continuously with the YSI during purging. The pumping speed was set to less than 0.5 liters per minute (L/m) to maintain a minimum water level drawdown of less than one tenth of a meter (< 0.1 m or < 0.33 feet [ft.]). In accordance with low-flow sampling requirements, the monitoring wells were purged until four consecutive readings of water quality parameters, collected 3-5 minutes apart, met the following stability criteria:

- $\pm 3\%$ for temperature (minimum of ± 0.2 °C),
- ± 0.1 for pH,
- $\pm 3\%$ for conductivity,
- ± 10 mv for redox potential,
- $\pm 10\%$ for dissolved oxygen (DO), and

All groundwater quality measurements and field observations were documented on the groundwater monitoring data sheets (Appendix A).

2.1.3. Groundwater Sampling

Following stabilization of the water quality parameters the field team collected groundwater samples for analysis of DRO and RRO concentrations. A total of five water samples and one duplicate sample were collected during the monitoring effort. The groundwater samples were collected directly into laboratory-provided 1 liter amber glass containers. The containers were filled, labeled and immediately placed into a cooler with sufficient gel ice to maintain sample temperatures at $4^{\circ} \pm 2^{\circ}\text{C}$ during transport to the analytical laboratory.

2.2. Laboratory Analysis

At the completion of the field effort, the groundwater samples were delivered to SGS Environmental Services Inc., (SGS) in Fairbanks, Alaska, an ADEC approved laboratory under proper chain of custody procedures. Samples were analyzed for DRO by Alaska Method AK102 and RRO by Alaska Method AK103.

2.3. Hydraulic Gradient Evaluation

As part of the groundwater monitoring effort, Rescon calculated an updated hydraulic gradient at the site to evaluate the groundwater flow direction in the area for comparison with 2012 findings. The depth to groundwater measurements in the wells were compared against the recorded elevations of the well casing survey in 2012. As noted, in the 2012 report, the wells were surveyed in reference to an assumed datum of 132 feet above mean sea level (AMSL), which is the elevation of the site taken from the USGS Topographical Map shown in Figure 1. The calculated groundwater elevations are presented on Figure 4 along with an updated groundwater contour map.

The computed groundwater gradient at the time of the monitoring effort was 0.0024 feet/feet (ft/ft) to the southwest. The finding is consistent with the conclusion from the 2012 monitoring effort, which also reported a southwest hydraulic gradient.

In addition to the hydraulic gradient calculation, three Solinst groundwater pressure transducers were installed in 2012 in wells MW-1, MW-2 and MW-3 to evaluate variability in the groundwater elevations at the site throughout the year. The transducers were set to record groundwater level measurements every six hours. A barometric pressure transducer was also placed at the site and synchronized with the monitoring well transducers to provide a barometric pressure correction to the groundwater data.

The logging devices were retrieved from the site prior to commencing the 2013 monitoring effort. The barometric pressure-corrected data from the three monitoring wells is shown in graph form with the field forms in Appendix A. The depth to water measurements are depicted on one graph to facilitate a comparison of the groundwater depth fluctuations at the site.

As shown on the graph, the groundwater fluctuations are consistent across the site. Every rise and fall in the groundwater level was consistent with the changes in the other two transducer wells. The consistent elevation change across the site indicates that groundwater generally flows towards the southwest throughout the year, as observed

during the 2012 and 2013 field efforts. Variations in the amount of rise and fall in the wells would be indicative of a changing groundwater flow direction. In each of the wells, the water levels decrease gradually in the fall months until stabilizing during the winter and spring. The groundwater levels begin to rise in the timeframe from May to June of 2013, marking the period of the spring thaw.

2.4. Investigative Derived Waste

Purge and decontamination water generated from the groundwater monitoring effort was captured in 5-gallon buckets during sampling and transferred to an open-topped steel 55-gallon drum. The purge water drum was sealed and labeled with content information and the generation date and was stored onsite. The drum was disposed of offsite as nonhazardous waste by OIT Inc., (OIT). The remaining investigative derived waste (IDW) included disposable sample gloves, paper towels and miscellaneous paper waste. The IDW was bagged and taped shut and disposed of at the Fairbanks Municipal Landfill.

3. LABORATORY RESULTS

The groundwater sample results are summarized in Table 1 and Table 2 and the complete laboratory reports are provided in Appendix B. A copy of the ADEC Laboratory Data Review Checklist is included in Appendix C.

3.1. Groundwater Sample Results

Five groundwater samples and one duplicate sample were collected from the site. Groundwater concentrations were below the ADEC Method 2 Groundwater cleanup levels (GCL) at four of the five locations, MW-2, MW-3, MW-4, and MW-5. The DRO concentration at MW-1, 2.92 mg/L, exceeded the ADEC GCL of 1.5 mg/L. Likewise, the RRO concentration detected in MW-1, 1.46 mg/L, also exceeded the ADEC cleanup level of 1.1 mg/L.

The 2013 analytical results are compared against past site data in Table 2. The historical results on Table 2 include the groundwater monitoring data from 2012 as well as the groundwater sample results, taken in vicinity of the current well locations, from the Nortech investigation in 2007. In comparison with the historical data, the groundwater concentrations remain generally consistent with results from 2012. The most notable change was the increase in DRO and RRO concentrations at MW-1 from the 2012 levels. However the DRO concentration remains well below the level detected in the groundwater in that area in 2007 (no RRO data is available for that location from 2007).

The increase in contaminant concentrations at MW-1 is likely the result of a higher water table at the site in 2013. Groundwater levels at the time of sampling were 0.2 inches higher during the 2013 monitoring event compared to the 2012 monitoring event. The diesel contamination is located in the vadose zone beneath the South Shop. When the water table rises in the area of the source area, additional DRO and RRO is desorbed from the soil into the groundwater. Therefore, the increase in contaminant concentrations at MW-1 is likely due to the higher groundwater level at the time of sampling in 2013.

3.2. Laboratory Quality Analytical Report

Laboratory Quality Assurance/Quality Control (QA/QC) data associated with the analysis of project samples was reviewed to evaluate the integrity of the analytical data generated during the September 2013 water sampling effort at the site. Environmental samples were hand delivered to SGS in Fairbanks and samples were transferred to SGS in Anchorage, Alaska. Results were reported in one sample delivery group, 1138460. Samples were collected, reported, and shipped in general accordance with the procedures outlined in the project work plan.

All data were reviewed in accordance with appropriate United States Environmental Protection Agency (EPA) procedural guidance documents (EPA 2008) and ADEC regulatory guidance documents (ADEC 2009; 2010; 2012).

The sample coolers were delivered with custody seals in place, unbroken and intact. All sample containers in the sample coolers were received at the laboratory intact, with proper documentation. Samples were received at the laboratory within the specified temperature range of 4°C +/- 2°C. As a result, no samples were qualified due to temperature. All samples were extracted, digested and analyzed within the holding time criteria for the applicable analytical methods and in accordance with work plan specifications.

A trip blank was not required, as there were no volatile organic analyses performed. One field duplicate was submitted for analysis -- primary 13-MW-3 with duplicate 13-MW-10. Relative percent difference (RPDs) between primary and duplicate samples met the ADEC recommended limits of <30% for water samples.

Method blanks were all not detected. Analysis of laboratory control samples (LCS) and LCS duplicates (LCSD) for target analytes met laboratory and project QC goals for target analytes.

Surrogate recovery indicates overall method performance. Surrogate recoveries were within prescribed control limits for all primary samples and LCS/LCSD. Not detected results were reported as not detected (U) at the limit of detection (LOD), which is twice the detection limit (DL). The DLs and limit of quantification (LOQ) met or were below established criteria specified for all analyses in the project work plans. The reporting limits were also below the ADEC established target levels.

Based upon the information provided, the data are acceptable for use. All requested analyses were performed in accordance with work plan specifications. Sample results are considered usable and meet project objectives. No results were rejected. The overall project completeness is 100%. In general, the overall quality of the data was acceptable for the objectives established for this project. All data is suitable for use.

4. CONCLUSIONS AND RECOMMENDATIONS

The analytical results in 2013 are generally consistent with the groundwater conditions observed during the 2012 monitoring effort. In general, the groundwater concentrations have remained stable with levels detected in 2012 and continue to be below the levels detected during the sump excavations in 2007. The only notable change was the increase in DRO and RRO concentrations in the sample collected from the MW-1 well in 2013 compared to 2012. As discussed above in Section 3.1 the increase in detected concentrations is likely due to the higher elevation of the groundwater table at the site in 2013.

The concentrations of DRO and RRO detected in well MW-1 were the only compounds detected above the respective ADEC cleanup criteria. MW-1 is positioned in the center of the south shop building in an area of known DRO contamination in the vadose zone. The detection of DRO and RRO concentrations above cleanup levels indicates that the groundwater in that area continues to be impacted by the source zone contaminants.

While, analytical results indicate that the groundwater beneath the building is still impacted, the concern at the site is to evaluate the potential for off-site migration of the contaminants. The presence of the south shop building along with the concrete slab foundation serves to encapsulate the diesel impacted soil in the vadose zone and prevents the source area from being saturated with runoff or precipitation. This minimizes the potential for the migration of diesel from the upper vadose zone soils, down to the underlying groundwater.

With the groundwater gradient on the property confirmed to be flowing to the southwest, MW-1 is situated in an up-gradient position of wells MW-3 and MW-4. Therefore, wells MW-3 and MW-4 are an indicator of groundwater impact down-gradient of the source area. As shown on Table 1, the concentrations at MW-3 and MW-4 were below the ADEC GCLs, with only MW-4 reporting detectable concentrations of DRO (0.835 mg/L) and RRO (0.822 mg/L). In addition, the up-gradient well, MW-2, and the cross-gradient well, MW-5, contained contaminant concentrations that were either undetected or below the laboratory limit of quantitation to confirm the result. These results confirm that although vadose zone contamination is impacting groundwater near MW-1, DRO is being naturally attenuated prior to reaching wells MW-3 and MW-4.

These findings support the conclusions made following the 2012 effort that DRO contamination is isolated to the area of the subject property in vicinity of the south shop building and off-site migration of contamination is not occurring.

Based on the results of the 2013 monitoring effort and the confirmation that the contaminants in the source area are not migrating off-site, Rescon recommends that the property owner request ADEC grant a status of cleanup complete with institutional controls and no further sampling for the site.

The institutional controls that would be implemented as part of the closure request would consist of the following:

1. The site is zoned for commercial industrial use and will remain in service for industrial use. ADEC permission will be requested if a change in use or zoning is sought in the future.
2. ADEC must be notified if any groundwater wells are installed at the site in the future.
3. Soil contamination beneath the south shop building will be addressed if/when the building foundation is removed or reconstructed.
4. A notification will be incorporated with the deed of the property that documents soil contamination is present below the building.

5. REFERENCES

- Alaska Department of Environmental Conservation (ADEC). 2009. *Technical Memorandum: Environmental Laboratory Data and Quality Assurance Requirements*. March.
- ADEC. 2010. *Laboratory Data Review Checklist. Version 2.7*. January.
- ADEC, 2010. *Draft Filed Sampling Guidance*. May.
- ADEC. 2012. *Technical Memorandum: Guidelines for Data Reporting, Data Reduction and Treatment of Non-detect Values*. June.
- ADEC. 2012a.18 Alaska Administrative Code (AAC) Chapter 75 – *Oil and hazardous Substances Pollution Control*. April.
- Environmental Protection Agency (EPA). 2008. *Contract Laboratory Program National Functional Guidelines for Organic Data Review* (EPA 540/R-94/012).
- Nortech, 2007. *Phase I Environmental Site Assessment*. January 29, 2007.
- Nortech, 2007. *Phase II Corrective Action and Additional Groundwater Delineation Report*. January 29, 2007.
- Rescon Alaska, LLC., 2013. *Groundwater Monitoring Report, 2143 Van Horn Road, Fairbanks, Alaska*, April 30.

TABLES

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TABLE 1
GROUNDWATER SAMPLE ANALYTICAL RESULTS SUMMARY
 2143 Van Horn Road - Groundwater Monitoring Report
 Fairbanks, Alaska
 September 2013

Sample ID:	ADEC Groundwater Cleanup Levels ⁽¹⁾ (mg/L)	Sample Date:					
		13-MW-1	13-MW-2	13-MW-3	13-MW-10 (Duplicate of 13-MW-3)	13-MW-4	13-MW-5
		9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013	9/17/2013
ADEC Fuels (all units in mg/L)							
Diesel Range Organics (AK102)	1.5	3.75	0.412 U	0.404 U	0.392 U	0.835	0.221 J
Residual Range Organics (AK103)	1.1	1.46	0.286 J	0.212 J	0.252 J	0.822	0.316 J

Notes:

Results above ADEC cleanup values are underlined, bolded and red.
 Positive values are bolded.

Not detected values are reported at the Limit of Quantitation (LOQ) and are qualified with U.

⁽¹⁾ 18 AAC 75.345, Table C

Key:

ADEC = Alaska Department of Environmental Conservation

AK = Alaska

mg/L = Milligrams per Liter

U = Result is not detected at the associated reported limit of detection (LOD), which is twice the detection limit (DL).

J = Estimated Value. Analyte detected at less than the Limit of Quantitation (LOQ) and greater than or equal to the Detection Limit (DL).



Table 2: Historical Groundwater Analytical Results
 2013 Groundwater Monitoring
 2143 Van Horn Road
 Fairbanks, Alaska

ANALYTE AND SAMPLING METHOD	ADEC Cleanup Level in mg/L ¹	Monitoring Well / Date														
		MW-1			MW-2			MW-3			MW-4			MW-5		
		2007	2012	2013	2007	2012	2013	2007	2012	2013	2007	2012	2013	2007	2012	2013
Diesel Range Organics (AK 102)	1.5	9.42	2.92	3.75	0.348	0.600 U	0.412 U	3.05	0.600 U	0.404 U	1.380	0.721	0.835	0.426	0.600 U	0.221 J
Residual Range Organics (AK103)	1.1	-	0.901	1.46	0.531	0.500 U	0.286 J	2.22	0.500 U	0.212 J	1.070	0.620	0.822	0.538 U	0.500 U	0.316 J

Notes:

Results may be rounded.

¹ Groundwater cleanup levels per 18 AAC 75.345, Table C.

Bolded, underlined and red results are above groundwater cleanup level.

ADEC - Alaska Department of Environmental Conservation.

mg/L - milligrams per liter

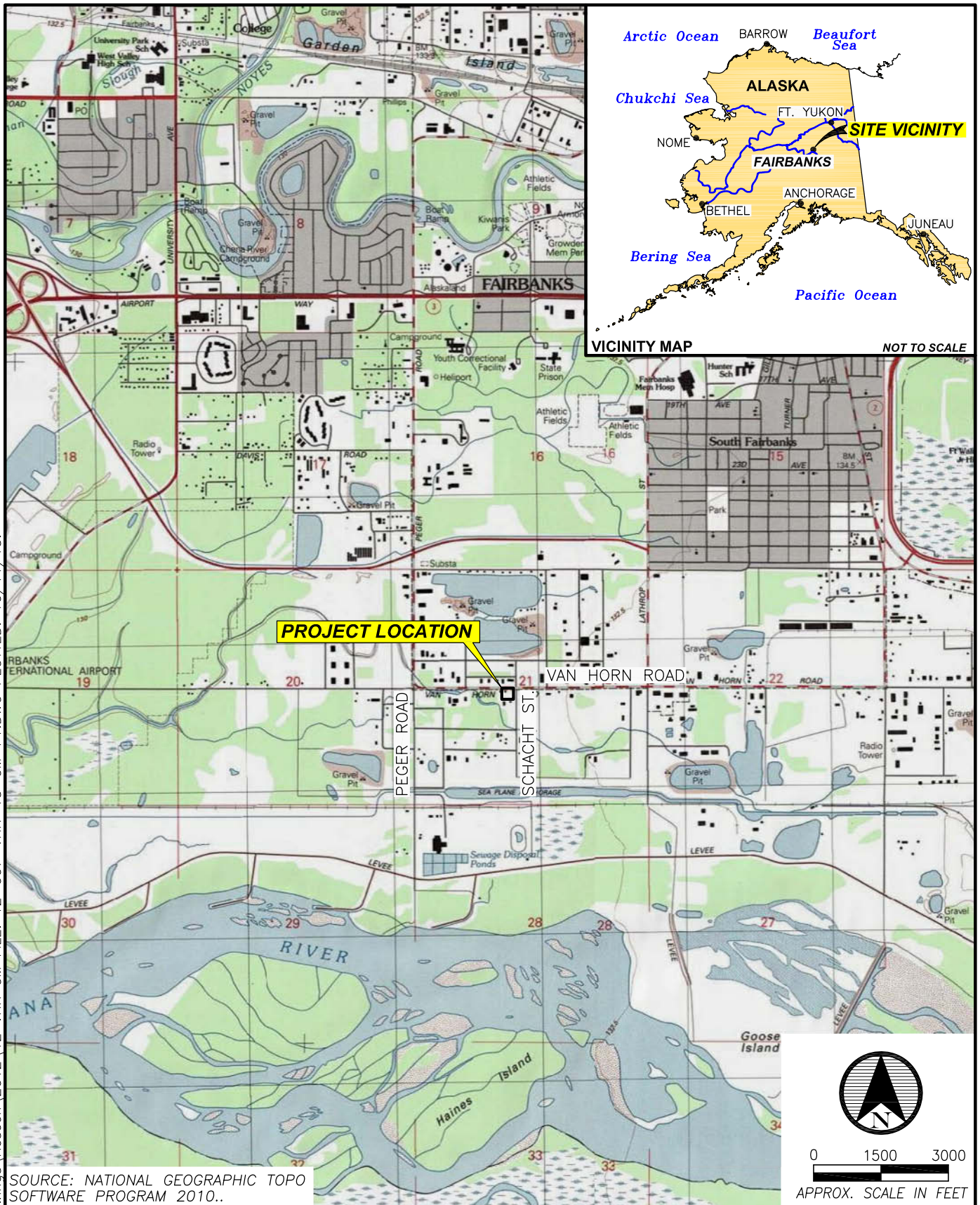
U = Result is not detected at the associated reported limit of detection (LOD), which is twice the detection limit (DL).

J = Estimated Value. Analyte detected at less than the Limit of Quantitation (LOQ) and greater than or equal to the Detection Limit (DL).

FIGURES

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PATH D: Project Drawings\Rescon\2012\12 VHR GM FILE: 12-007-VHR-13-GM-F1.DWG PLOTTED: 10/11/13.



SOURCE: NATIONAL GEOGRAPHIC TOPO SOFTWARE PROGRAM 2010..

DATE: OCT. 2013
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 DRAWN: C.E.H.
 PROJ. No.: 12-007



RESCON
alaska
1120 HUFFMAN ROAD
SUITE 24-431
ANCHORAGE ALASKA 99515
907-317-2473

SITE LOCATION MAP

2143 VAN HORN ROAD
GROUNDWATER MONITORING REPORT
Fairbanks, Alaska

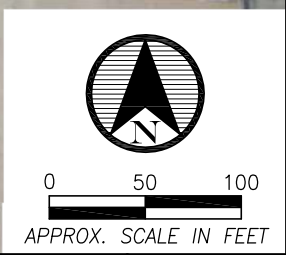
FIGURE

1

PATH D: Project Drawings\Rescon\2012\12 VHR GM FILE: 12-007-VHR-13-GM-F2.DWG PLOTTED: 10/11/13.



SOURCE: IMAGE DOWNLOADED FROM GOOGLE EARTH DATED 4/26/2010.



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RESCON
alaska
 1120 HUFFMAN ROAD
 SUITE 24-431
 ANCHORAGE ALASKA 99515
 907-317-2473

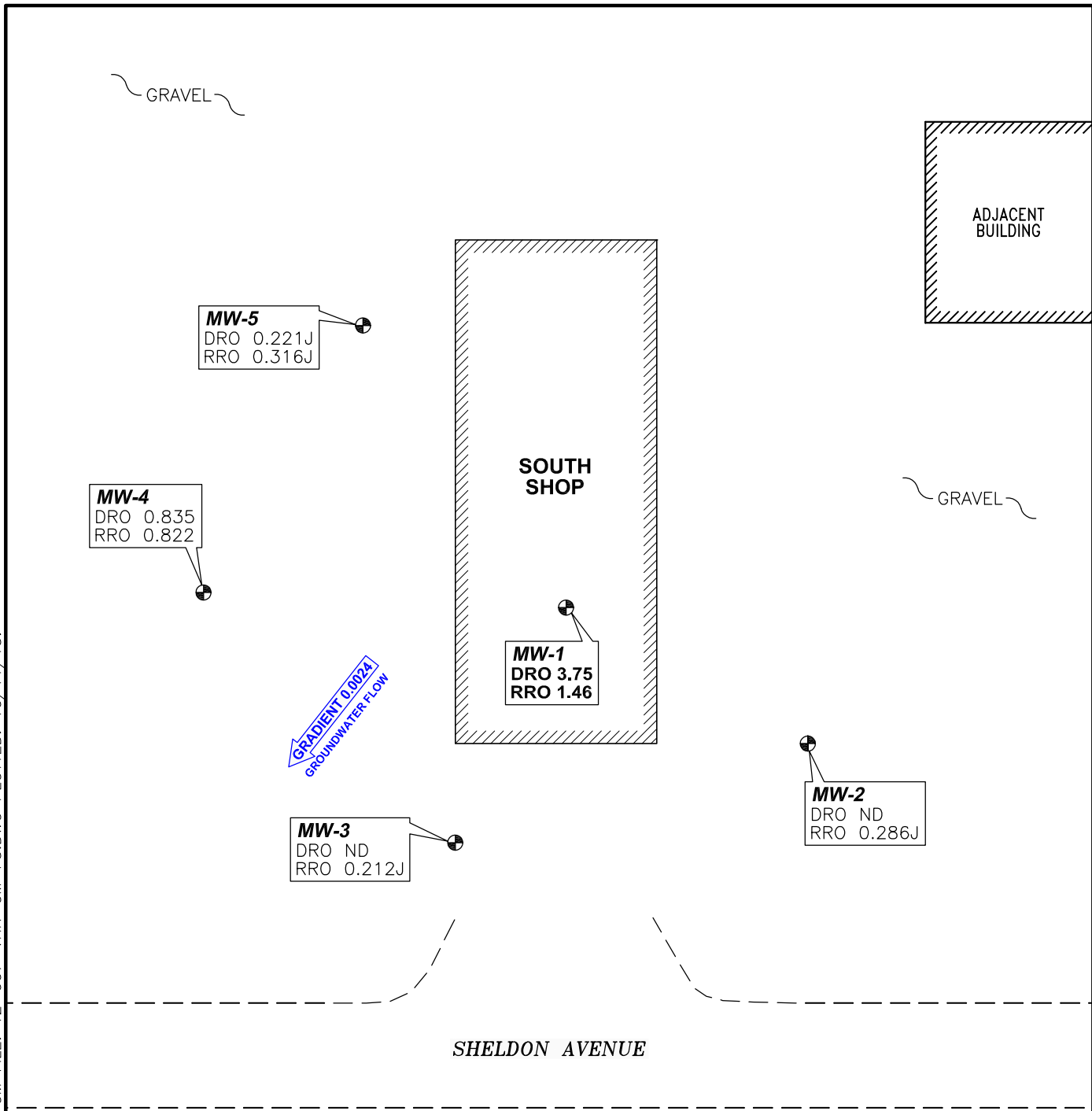
SITE PLAN

2143 VAN HORN ROAD
 GROUNDWATER MONITORING REPORT
 Fairbanks, Alaska

FIGURE

2

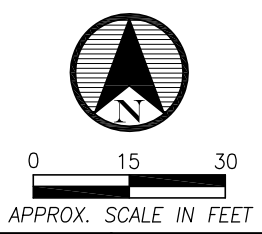
PATH D: Project Drawings\Rescon\2012\12 VHR GM FILE: 12-007-VHR-GM-F3.DWG PLOTTED: 10/11/13.



LEGEND

MW-1 MONITORING WELL LOCATION
 DRO DIESEL-RANGE ORGANICS (mg/L)
 RRO RESIDUAL-RANGE ORGANICS (mg/L)
 J INDICATES ESTIMATED VALUE
 ND NOT DETECTED

NOTE:
BOLD TEXT INDICATES AN EXCEEDANCE OF ADEC GROUNDWATER CLEANUP LEVELS.



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RESCON
alaska

1120 HUFFMAN ROAD
 SUITE 24-431
 ANCHORAGE ALASKA 99515
 907-317-2473

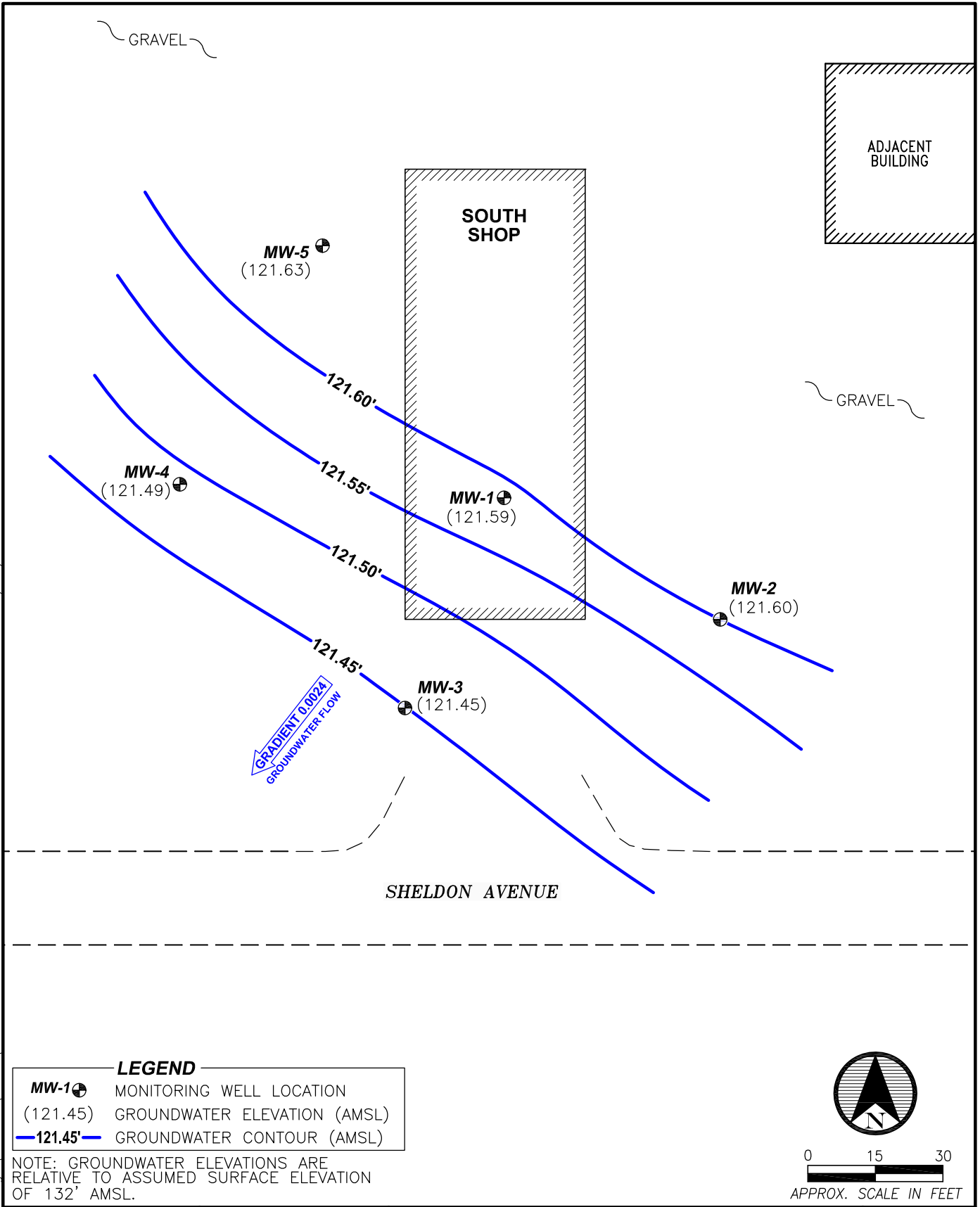
GROUNDWATER SAMPLE RESULTS

2143 VAN HORN ROAD
 GROUNDWATER MONITORING REPORT
 Fairbanks, Alaska

FIGURE

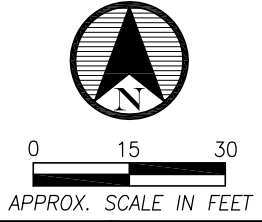
3

PATH D: Project Drawings\Rescon\2012\12 VHR GM FILE: 12-007-VHR-13-GM-F4.DWG PLOTTED: 10/11/13.



LEGEND	
MW-1 ⊕	MONITORING WELL LOCATION
(121.45)	GROUNDWATER ELEVATION (AMSL)
—121.45' —	GROUNDWATER CONTOUR (AMSL)

NOTE: GROUNDWATER ELEVATIONS ARE RELATIVE TO ASSUMED SURFACE ELEVATION OF 132' AMSL.



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GROUNDWATER CONTOUR MAP

2143 VAN HORN ROAD
GROUNDWATER MONITORING REPORT
Fairbanks, Alaska

FIGURE

4

APPENDIX A

Field Notes and Groundwater Sample Data Sheets

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SEPTEMBER 17, 2013

~ 35°F, OVERCAST

1200 - ARRIVE ON SITE.

1215 - OPEN MONITORING WELLS AND
RECORD DEPTH MEASUREMENTS

WELL	DTW	TOTAL DEPTH
MW-1	8.16'	13.75'
MW-2	6.00'	14.39
MW-3	6.61'	15.21'
MW-4	6.90'	14.37'
MW-5	7.37'	15.07'

1300 - COMMENCE SAMPLING OF
SITE MONITORING WELLS.1310 - REMOVE DATA LOGGERS FROM
WELLS MW-1, MW-2 AND MW-31320 - SAMPLE WELL MW-5. SEE
GW DATA SHEETS FOR INFO.- SAMPLE REMAINING FIVE
MONITORING WELLS. SEE GW
DATA SHEETS FOR INFO.1530 - FINISH SAMPLING MONITORING
WELLS.- PURGE / DRAIN WATER PLACED
INTO 55-GALLON DRUM ON SITE.

- CLEAN UP AND DEPART THE SITE.




GROUNDWATER SAMPLE DATA SHEET

Project Number: 12-007 Sample Location (ie. MW1): MW-1
 Project Name: LUFZ - FAIRBANKS Sample ID: 13-MW-1
 Client: M. LUFZ Date Sample Collected: 9/17/13
 Sampler: N. OBERLEE Time sampled: 1450

Well Information

Groundwater: Yes Casing Diameter (in): 2" a) Well Depth (ft): _____
 b) Water Depth (ft): _____
 Other: _____ c) Water Column (ft): _____
 d) Calc. Purge Vol. (gal): _____

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.23

Example 1- purging only well casing volume
 You have 2-inch casing and 6-foot water column.
 One Purge Volume= 0.16 X 6 = 0.96 gallons water

Note: assuming sand pack has 28% porosity
 Example 2- purging well casing and sand pack volume
 You have 2-inch casing, 8-inch sand pack, and 6-foot water column.
 One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (F)	Color	Turbidity	Redox	Dissolved O ₂	Other
1432		5.64	0.871	4.41	CLR	LOW	24.0	2.00	
1435		5.49	0.873	4.33	CLR	LOW	29.0	0.83	
1438		5.48	0.870	4.39	CLR	LOW	28.5	0.65	
1441		5.54	0.867	4.45	CLR	LOW	24.7	0.57	
1444		5.59	0.865	4.48	CLGAR	LOW	23.0	0.52	

Total Volume Purged: _____ Free Product (y/n): NONE
 Odor: _____ Sheen (y/n): NONE

Purge Method (disposable bailer, peristaltic pump, submersible pump, etc.)

PERISTALTIC

Sample Method (disposable bailer, peristaltic pump, submersible pump, etc.)

PERISTALTIC

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

GOOD CONDITION

Remarks (well recovery, unusual conditions/observations):

GOOD RECOVERY

Duplicate Sample ID: _____
 Split Sample ID: _____

Signed: N. OLL Date: 9/17/13
 Signed/reviewer: _____ Date: _____

GROUNDWATER SAMPLE DATA SHEET

Project Number: 12-007 Sample Location (ie. MW1): AW-MW-2
 Project Name: LUTZ - FAERANIKS Sample ID: 13-MW-2
 Client: M. LUTZ Date Sample Collected: 9/17/13
 Sampler: N.O., Z.K. Time sampled: 1430

Well Information

Groundwater: Yes Casing Diameter (in): 2" a) Well Depth (ft): _____
 b) Water Depth (ft): _____
 Other: _____ c) Water Column (ft): _____
 d) Calc. Purge Vol. (gal): _____

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Example 1- purging only well casing volume
 You have 2-inch casing and 6-foot water column.
 One Purge Volume= 0.16 X 6 = 0.96 gallons water

Note: assuming sand pack has 28% porosity
 Example 2- purging well casing and sand pack volume
 You have 2-inch casing, 8-inch sand pack, and 6-foot water column.
 One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (F)	Color	Turbidity	Redox	Dissolved O ₂	Other
1405		5.68	0.397	4.36	BRN	MED	24.5	2.99	
1409		5.28	0.393	4.38	BRN	MED	47.1	0.76	
1412		5.10	0.390	4.21	BRN	MED	58.4	0.61	
1416		5.07	0.392	4.30	BRN	MED	56.7	0.62	
1419		5.21	0.398	4.38	BRN	MED	45.2	0.58	

Total Volume Purged: _____ Free Product (y/n): NONE
 Odor: _____ Sheen (y/n): NONE

Purge Method (disposable bailer, peristaltic pump, submersible pump, etc.)

PERISTALTIC

Sample Method (disposable bailer, peristaltic pump, submersible pump, etc.)

PERISTALTIC

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

GOOD CONDITION

Remarks (well recovery, unusual conditions/observations):

GOOD RECOVERY

Duplicate Sample ID: _____
 Split Sample ID: _____

Signed: Matthew P. Orl Date: 9/17/13
 Signed/reviewer: _____ Date: _____

GROUNDWATER SAMPLE DATA SHEET

Project Number: 12-007 Sample Location (ie. MW1): MW-3
 Project Name: Lutz - FAIRBANKS Sample ID: 13-MW-3
 Client: M. LUTZ Date Sample Collected: 9/17/13
 Sampler: Z.K., N.O. Time sampled: 1405

Well Information

Groundwater: Yes Casing Diameter (in): 2 in a) Well Depth (ft): _____
 b) Water Depth (ft): _____
 Other: _____ c) Water Column (ft): _____
 d) Calc. Purge Vol. (gal): _____

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.26

Example 1- purging only well casing volume
 You have 2-inch casing and 6-foot water column.
 One Purge Volume= 0.16 X 6 = 0.96 gallons water

Note: assuming sand pack has 29% porosity
 Example 2- purging well casing and sand pack volume
 You have 2-inch casing, 8-inch sand pack, and 6-foot water column.
 One Purge Volume= (0.16 X 6) + (0.71 X 8) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (F)	Color	Turbidity	Redox	Dissolved O ₂	Other
1345		6.21	0.494	6.09	GRAY	LOW	-61.9	2.00	
1347		6.09	0.493	6.13	"	LOW	-61.1	0.45	
1350		6.00	0.492	6.16	CLEAR	LOW	-57.7	0.44	
1353		5.98	0.493	6.16	CLEAR	LOW	-57.9	0.37	
1355		6.01	0.491	6.19	CLEAR	LOW	-60.7	0.38	

Total Volume Purged: _____ Free Product (y/n): NONE
 Odor: _____ Sheen (y/n): NONE
 Purge Method (disposable bailer, peristaltic pump, submersible pump, etc.)
PERISTALTIC
 Sample Method (disposable bailer, peristaltic pump, submersible pump, etc.)
PERISTALTIC
 Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)
GOOD CONDITION

Remarks (well recovery, unusual conditions/observations):
GOOD RECOVERY

Duplicate Sample ID: 13-MW-10 @ 1410
 Split Sample ID: _____

Signed: Nathan P. Orl Date: 9/17/13
 Signed/reviewer: _____ Date: _____

GROUNDWATER SAMPLE DATA SHEET

Project Number: 12-007 Sample Location (ie. MW1): MW-4
 Project Name: LOTZ - FAIRBANKS Sample ID: 13-MW-4
 Client: M. LOTZ Date Sample Collected: 9/17/13
 Sampler: Z.K., N.O. Time sampled: 1340

Well Information

Groundwater: Yes Casing Diameter (in): 2" a) Well Depth (ft): _____
 b) Water Depth (ft): _____
 Other: _____ c) Water Column (ft): _____
 d) Calc. Purge Vol. (gal): _____

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Example 1- purging only well casing volume
 You have 2-inch casing and 6-foot water column.
 One Purge Volume= 0.16 X 6 = 0.96 gallons water

Note: assuming sand pack has 20% porosity
 Example 2- purging well casing and sand pack volume
 You have 2-inch casing, 8-inch sand pack, and 6-foot water column.
 One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (F)	Color	Turbidity	Redox	Dissolved O ₂	Other
1325		5.96	0.513	5.49	CLEAR	Low	-10.1	6.00	
1328		5.70	0.508	4.88	CLEAR	Low	4.1	1.30	
1331		5.49	0.504	4.98	CLEAR	Low	14.7	0.48	
1334		5.48	0.504	5.05	CLEAR	Low	15.1	0.33	
1336		5.48	0.504	5.08	CLEAR	Low	14.3	0.37	

Total Volume Purged: _____ Free Product (y/n): NONE
 Odor: NONE Sheen (y/n): NONE
 Purge Method (disposable bailer, peristaltic pump, submersible pump, etc.)

Sample Method (disposable bailer, peristaltic pump, submersible pump, etc.)

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

GOOD CONDITION

Remarks (well recovery, unusual conditions/observations):

GOOD RECOVERY

Duplicate Sample ID: _____
 Split Sample ID: _____

Signed: Nathan P. ORL Date: 9/17/13
 Signed/reviewer: _____ Date: _____

GROUNDWATER SAMPLE DATA SHEET

Project Number: 12-007 Sample Location (ie. MW1): MW-5
 Project Name: LUTZ - FERRANKS Sample ID: 13-MW-5
 Client: M. Lutz Date Sample Collected: 9/17/13
 Sampler: NATE OBERLEE Time sampled: 1320

Well Information

Groundwater: Yes Casing Diameter (in): 2" a) Well Depth (ft): _____
 b) Water Depth (ft): _____
 Other: _____ c) Water Column (ft): _____
 d) Calc. Purge Vol. (gal): _____

Calculating Purge Volume

Well Casing Diameter	Multiply c) by:
2	0.16
4	0.65
6	1.47

Sand Pack Diameter	Multiply c) by:
8	0.71
10	1
12	1.28

Example 1- purging only well casing volume
 You have 2-inch casing and 6-foot water column.
 One Purge Volume= 0.16 X 6 = 0.96 gallons water

Note: assuming sand pack has 29% porosity
 Example 2- purging well casing and sand pack volume
 You have 2-inch casing, 8-inch sand pack, and 6-foot water column.
 One Purge Volume= (0.16 X 6) + (0.71 X 6) = 5.22 gallons water

FIELD MEASUREMENTS

Time	Volume (gallons)	pH	Conductivity (mS)	Temperature (F)	Color	Turbidity	Redox	Dissolved O ₂	Other
1300 1300	0.2	5.38	0.547	4.98	CLEAR	Low	47.7	3.10	
1301 1302		5.38	0.548	5.00	CLEAR	Low	44.8	2.25	
1303 1304		5.44	0.546	5.18	CLEAR	Low	39.1	1.21	
1308		5.48	0.546	5.31	CLEAR	Low	35.7	0.78	
1311		5.50	0.544	5.35	CLEAR	Low	33.6	0.61	

Total Volume Purged: _____ Free Product (y/n): No
 Odor: NONE Sheen (y/n): No

Purge Method (disposable bailer, peristaltic pump, submersible pump, etc.)

PERISTALTIC PUMP

Sample Method (disposable bailer, peristaltic pump, submersible pump, etc.)

PERISTALTIC PUMP

Well Integrity (condition of casing, flush mount sealing properly, cement seal intact, etc.)

GOOD CONDITION

Remarks (well recovery, unusual conditions/observations):

GOOD RECOVERY

Duplicate Sample ID: _____

Split Sample ID: _____

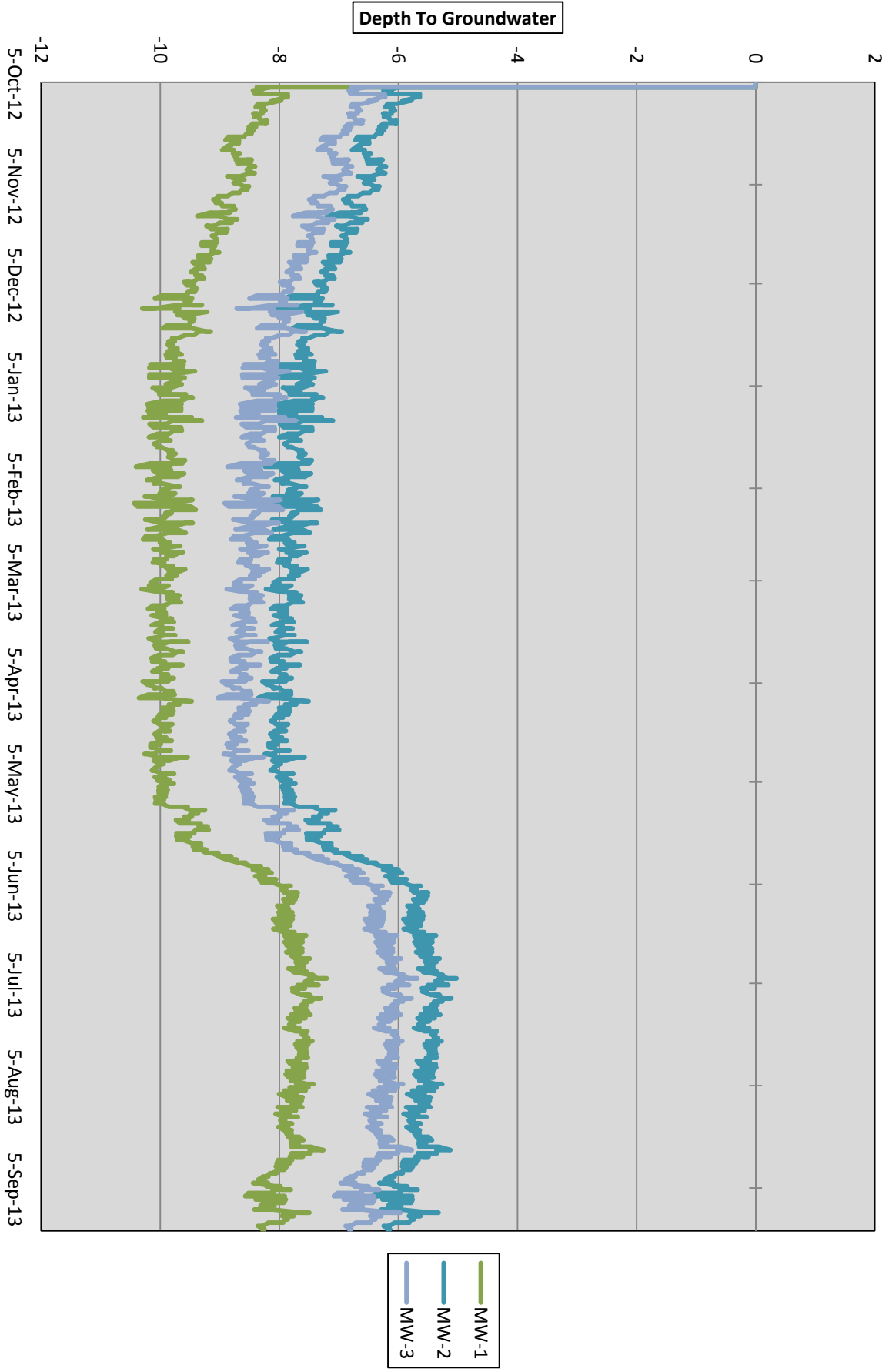
Signed: [Signature]

Date: 9/17/13

Signed/reviewer: _____

Date: _____

Levellogger Data Lutz Fairbanks Site



APPENDIX B

SGS Laboratory Report

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Laboratory Report of Analysis

To: ResCon Alaska
1175 Oceanview Dr.
Anchorage, AK 99515
(907)317-2473

Report Number: **1138460**

Client Project: **Lutz**

Dear Nate Oberlee,

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 five 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 Forest 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.

Forest Taylor
Project Manager
Forest.Taylor@sgs.com

Date

Print Date: 10/01/2013 8:39:05AM

Case Narrative

SGS Client: **ResCon Alaska**
SGS Project: **1138460**
Project Name/Site: **Lutz**
Project Contact: **Nate Oberlee**

Refer to sample receipt form for information on sample condition.

13-MW-4 (1138460002) PS

AK102/103 - The pattern is consistent with a weathered middle distillate.

13-MW-1 (1138460005) PS

AK102 - The pattern is consistent with a weathered middle distillate.
AK103 - Unknown hydrocarbon with several peaks is present.

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

Print Date: 10/01/2013 8:39:06AM

Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. If you have any questions regarding this report, or if we can be of any other assistance, please contact your SGS Project Manager at 907-562-2343. All work is provided under SGS general terms and conditions (<http://www.sgs.com/terms_and_conditions.htm>), unless other written agreements have been accepted by both parties.

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) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020A, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035B, 6020, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040B, 9045C, 9056A, 9060A, AK101 and AK102/103). 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	Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 2xDL)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
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.

Sample Summary

<u>Client Sample ID</u>	<u>Lab Sample ID</u>	<u>Collected</u>	<u>Received</u>	<u>Matrix</u>
13-MW-5	1138460001	09/17/2013	09/18/2013	Water (Surface, Eff., Ground)
13-MW-4	1138460002	09/17/2013	09/18/2013	Water (Surface, Eff., Ground)
13-MW-3	1138460003	09/17/2013	09/18/2013	Water (Surface, Eff., Ground)
13-MW-2	1138460004	09/17/2013	09/18/2013	Water (Surface, Eff., Ground)
13-MW-1	1138460005	09/17/2013	09/18/2013	Water (Surface, Eff., Ground)
13-MW-10	1138460006	09/17/2013	09/18/2013	Water (Surface, Eff., Ground)

<u>Method</u>	<u>Method Description</u>
AK102	Diesel/Residual Range Organics Water
AK103	Diesel/Residual Range Organics Water

Detectable Results Summary

Client Sample ID: **13-MW-5**
 Lab Sample ID: 1138460001
Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.221J	mg/L
Residual Range Organics	0.316J	mg/L

Client Sample ID: **13-MW-4**
 Lab Sample ID: 1138460002
Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	0.835	mg/L
Residual Range Organics	0.822	mg/L

Client Sample ID: **13-MW-3**
 Lab Sample ID: 1138460003
Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	0.212J	mg/L

Client Sample ID: **13-MW-2**
 Lab Sample ID: 1138460004
Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	0.286J	mg/L

Client Sample ID: **13-MW-1**
 Lab Sample ID: 1138460005
Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Diesel Range Organics	3.75	mg/L
Residual Range Organics	1.46	mg/L

Client Sample ID: **13-MW-10**
 Lab Sample ID: 1138460006
Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Residual Range Organics	0.252J	mg/L



Results of 13-MW-5

Client Sample ID: **13-MW-5**
Client Project ID: **Lutz**
Lab Sample ID: 1138460001
Lab Project ID: 1138460

Collection Date: 09/17/13 13:20
Received Date: 09/18/13 09:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.221 J	0.667	0.200	mg/L	1		09/25/13 06:11
Surrogates							
5a Androstane	92.8	50-150		%	1		09/25/13 06:11

Batch Information

Analytical Batch: XFC11087
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/13 06:11
Container ID: 1138460001-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.316 J	0.556	0.167	mg/L	1		09/25/13 06:11
Surrogates							
n-Triacontane-d62	99.9	50-150		%	1		09/25/13 06:11

Batch Information

Analytical Batch: XFC11087
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/13 06:11
Container ID: 1138460001-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:08AM



Results of 13-MW-4

Client Sample ID: 13-MW-4
Client Project ID: Lutz
Lab Sample ID: 1138460002
Lab Project ID: 1138460

Collection Date: 09/17/13 13:40
Received Date: 09/18/13 09:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Semivolatile Organic Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	0.835	0.667	0.200	mg/L	1		09/25/13 06:32

Surrogates

5a Androstane	95.5	50-150		%	1		09/25/13 06:32
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Batch Information

Analytical Batch: XFC11087
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/13 06:32
Container ID: 1138460002-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	0.822	0.556	0.167	mg/L	1		09/25/13 06:32

Surrogates

n-Triacontane-d62	100	50-150		%	1		09/25/13 06:32
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Batch Information

Analytical Batch: XFC11087
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/13 06:32
Container ID: 1138460002-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:08AM



Results of 13-MW-3

Client Sample ID: 13-MW-3
Client Project ID: Lutz
Lab Sample ID: 1138460003
Lab Project ID: 1138460

Collection Date: 09/17/13 14:05
Received Date: 09/18/13 09:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.404 U	0.674	0.202	mg/L	1		09/25/13 06:53

Surrogates

5a Androstane	90	50-150		%	1		09/25/13 06:53
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Batch Information

Analytical Batch: XFC11087
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/13 06:53
Container ID: 1138460003-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 890 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.212 J	0.562	0.169	mg/L	1		09/25/13 06:53

Surrogates

n-Triacontane-d62	93	50-150		%	1		09/25/13 06:53
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Batch Information

Analytical Batch: XFC11087
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/13 06:53
Container ID: 1138460003-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 890 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:08AM



Results of 13-MW-2

Client Sample ID: 13-MW-2
Client Project ID: Lutz
Lab Sample ID: 1138460004
Lab Project ID: 1138460

Collection Date: 09/17/13 14:30
Received Date: 09/18/13 09:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.412 U	0.686	0.206	mg/L	1		09/25/13 07:14

Surrogates

5a Androstane	92.8	50-150		%	1		09/25/13 07:14
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Batch Information

Analytical Batch: XFC11087
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/13 07:14
Container ID: 1138460004-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 875 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.286 J	0.571	0.171	mg/L	1		09/25/13 07:14

Surrogates

n-Triacontane-d62	99.8	50-150		%	1		09/25/13 07:14
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Batch Information

Analytical Batch: XFC11087
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/13 07:14
Container ID: 1138460004-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 875 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:08AM



Results of 13-MW-1

Client Sample ID: 13-MW-1
Client Project ID: Lutz
Lab Sample ID: 1138460005
Lab Project ID: 1138460

Collection Date: 09/17/13 14:50
Received Date: 09/18/13 09:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Semivolatile Organic Fuels

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Diesel Range Organics	3.75	0.667	0.200	mg/L	1		09/25/13 07:35
Surrogates							
5a Androstane	91.1	50-150		%	1		09/25/13 07:35

Batch Information

Analytical Batch: XFC11087
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/13 07:35
Container ID: 1138460005-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Residual Range Organics	1.46	0.556	0.167	mg/L	1		09/25/13 07:35
Surrogates							
n-Triacontane-d62	96.2	50-150		%	1		09/25/13 07:35

Batch Information

Analytical Batch: XFC11087
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/13 07:35
Container ID: 1138460005-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 900 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:08AM



Results of 13-MW-10

Client Sample ID: 13-MW-10
Client Project ID: Lutz
Lab Sample ID: 1138460006
Lab Project ID: 1138460

Collection Date: 09/17/13 14:10
Received Date: 09/18/13 09:15
Matrix: Water (Surface, Eff., Ground)
Solids (%):

Results by Semivolatile Organic Fuels

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Diesel Range Organics	0.392 U	0.652	0.196	mg/L	1		09/25/13 07:56

Surrogates

5a Androstane	93.4	50-150		%	1		09/25/13 07:56
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Batch Information

Analytical Batch: XFC11087
Analytical Method: AK102
Analyst: EAB
Analytical Date/Time: 09/25/13 07:56
Container ID: 1138460006-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 920 mL
Prep Extract Vol: 1 mL

<u>Parameter</u>	<u>Result Qual</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Allowable Limits</u>	<u>Date Analyzed</u>
Residual Range Organics	0.252 J	0.543	0.163	mg/L	1		09/25/13 07:56

Surrogates

n-Triacontane-d62	97.9	50-150		%	1		09/25/13 07:56
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Batch Information

Analytical Batch: XFC11087
Analytical Method: AK103
Analyst: EAB
Analytical Date/Time: 09/25/13 07:56
Container ID: 1138460006-A

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 09/22/13 09:35
Prep Initial Wt./Vol.: 920 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:08AM



Method Blank

Blank ID: MB for HBN 1485561 [XXX/29979]
Blank Lab ID: 1179983

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138460001, 1138460002, 1138460003, 1138460004, 1138460005, 1138460006

Results by AK102

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Diesel Range Organics	0.360U	0.600	0.180	mg/L
Surrogates				
5a Androstane	94.7	60-120		%

Batch Information

Analytical Batch: XFC11084
Analytical Method: AK102
Instrument: HP 7890A FID SV E R
Analyst: EAB
Analytical Date/Time: 9/23/2013 4:56:00PM

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 9/22/2013 9:35:00AM
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:10AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1138460 [XXX29979]
 Blank Spike Lab ID: 1179984
 Date Analyzed: 09/23/2013 17:17

Spike Duplicate ID: LCSD for HBN 1138460 [XXX29979]
 Spike Duplicate Lab ID: 1179985
 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138460001, 1138460002, 1138460003, 1138460004, 1138460005, 1138460006

Results by AK102

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Diesel Range Organics	5	5.44	109	5	5.04	101	(75-125)	7.50	(< 20)
Surrogates									
5a Androstane	0.1	99.7	100	0.1	92.5	93	(60-120)	7.50	

Batch Information

Analytical Batch: **XFC11084**
 Analytical Method: **AK102**
 Instrument: **HP 7890A FID SV ER**
 Analyst: **EAB**

Prep Batch: **XXX29979**
 Prep Method: **SW3520C**
 Prep Date/Time: **09/22/2013 09:35**
 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL
 Dupe Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:11AM



Method Blank

Blank ID: MB for HBN 1485561 [XXX/29979]
Blank Lab ID: 1179983

Matrix: Water (Surface, Eff., Ground)

QC for Samples:
1138460001, 1138460002, 1138460003, 1138460004, 1138460005, 1138460006

Results by AK103

<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>
Residual Range Organics	0.300U	0.500	0.150	mg/L
Surrogates				
n-Triacontane-d62	99.9	60-120		%

Batch Information

Analytical Batch: XFC11084
Analytical Method: AK103
Instrument: HP 7890A FID SV E R
Analyst: EAB
Analytical Date/Time: 9/23/2013 4:56:00PM

Prep Batch: XXX29979
Prep Method: SW3520C
Prep Date/Time: 9/22/2013 9:35:00AM
Prep Initial Wt./Vol.: 1000 mL
Prep Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:11AM



Blank Spike Summary

Blank Spike ID: LCS for HBN 1138460 [XXX29979]
Blank Spike Lab ID: 1179984
Date Analyzed: 09/23/2013 17:17

Spike Duplicate ID: LCSD for HBN 1138460 [XXX29979]
Spike Duplicate Lab ID: 1179985
Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1138460001, 1138460002, 1138460003, 1138460004, 1138460005, 1138460006

Results by AK103

Parameter	Blank Spike (mg/L)			Spike Duplicate (mg/L)			CL	RPD (%)	RPD CL
	Spike	Result	Rec (%)	Spike	Result	Rec (%)			
Residual Range Organics	5	5.40	108	5	4.96	99	(60-120)	8.50	(< 20)
Surrogates									
n-Triacontane-d62	0.1	101	101	0.1	94.6	95	(60-120)	6.40	

Batch Information

Analytical Batch: **XFC11084**
Analytical Method: **AK103**
Instrument: **HP 7890A FID SV ER**
Analyst: **EAB**

Prep Batch: **XXX29979**
Prep Method: **SW3520C**
Prep Date/Time: **09/22/2013 09:35**
Spike Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL
Dupe Init Wt./Vol.: 5 mg/L Extract Vol: 1 mL

Print Date: 10/01/2013 8:39:12AM



SGS CHAIN

1138460



Locations Nationwide
Alaska
Maryland
New Jersey
North Carolina
West Virginia
www.us.sgs.com

Form with sections 1-5. Section 1: CLIENT: RESCON ALASKA, CONTACT: NATE OBERLEE, PHONE NO: 907-317-2473. Section 2: RESERVED for lab use, SAMPLE IDENTIFICATION, DATE, TIME, MATRIX CODE. Section 3: CONTAINERS table with columns #, C, O, N, T, A, I, N, E, R, S, Type, Preservative, REMARKS/LOC ID. Section 4: Section 4 DOD Project? Yes No, Data Deliverable Requirements. Section 5: Relinquished By (1-4), Date, Time, Received By, Received For Laboratory By.



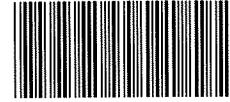
SAMPLE RECEIPT FORM

Review Criteria:	Condition:	Comments/Action Taken:
Were custody seals intact? Note # & location, if applicable. COC accompanied samples?	Yes No <u>N/A</u> <u>Yes</u> No N/A	
Temperature blank compliant* (i.e., 0-6°C after correction factor)? <i>* Note: Exemption permitted for chilled samples collected less than 8 hours ago.</i> Cooler ID: <u>1</u> @ <u>1-0</u> w/ Therm.ID: <u>11</u> Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ Cooler ID: _____ @ _____ w/ Therm.ID: _____ <i>Note: If non-compliant, use form FS-0029 to document affected samples/analyses.</i> If samples are received <u>without</u> a temperature blank, the "cooler temperature" will be documented in lieu of the temperature blank & "COOLER TEMP" will be noted to the right. In cases where neither a temp blank <u>nor</u> cooler temp can be obtained, note "ambient" or "chilled." If temperature(s) <0°C, were all sample containers ice free?	Yes No <u>N/A</u> <u>Yes</u> No N/A	
Delivery method (specify all that apply): USPS Alert Courier C&D Delivery <u>Client</u> AK Air Lynden Carlile ERA PenAir FedEx UPS NAC Other: → For WO# with airbills, was the WO# & airbill info recorded in the Front Counter eLog?	Note ABN/ tracking # See Attached or N/A Yes No <u>N/A</u>	
→ For samples received with payment, note amount (\$) and cash / check / CC (circle one) or note: → For samples received in FBKS , ANCH staff will verify all criteria are reviewed.		SRF Initiated by: <u>JP</u> <u>N/A</u> N/A
Were samples received within hold time? <i>Note: Refer to form F-083 "Sample Guide" for hold time information.</i> Do samples match COC* (i.e., sample IDs, dates/times collected)? <i>* Note: Exemption permitted if times differ <1hr; in which case, use times on COC.</i> Were analyses requested unambiguous?	<u>Yes</u> No N/A <u>Yes</u> No N/A <u>Yes</u> No N/A	
Were samples in good condition (no leaks/cracks/breakage)? Packing material used (specify all that apply): <u>Bubble Wrap</u> Separate plastic bags Vermiculite Other:	<u>Yes</u> No N/A <u>Yes</u> No N/A	
Were all VOA vials free of headspace (i.e., bubbles ≤6 mm)? Were all soil VOAs field extracted with MeOH+BFB?	Yes No <u>N/A</u> Yes No <u>N/A</u>	
Were proper containers (type/mass/volume/preservative*) used? <i>* Note: Exemption permitted for waters to be analyzed for metals.</i> Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with samples?	<u>Yes</u> No N/A Yes No <u>N/A</u>	
For special handling (e.g., "MI" or foreign soils, lab filter, limited volume, Ref Lab), were bottles/paperwork flagged (e.g., sticker)?	Yes No <u>N/A</u>	
For preserved waters (other than VOA vials, LL-Mercury or microbiological analyses), was pH verified and compliant ? If pH was adjusted, were bottles flagged (i.e., stickers)?	<u>Yes</u> No N/A Yes No <u>N/A</u>	
For RUSH/SHORT Hold Time , were COC/Bottles flagged accordingly? Was Rush/Short HT email sent, if applicable?	Yes No <u>N/A</u>	
For SITE-SPECIFIC QC , e.g. BMS/BMSD/BDUP, were containers / paperwork flagged accordingly?	Yes No <u>N/A</u>	
For any question answered "No," has the PM been notified and the problem resolved (or paperwork put in their bin)?	Yes No <u>N/A</u>	SRF Completed by: <u>MD</u> <u>09/18/13</u> PM = <u>FT</u> N/A
Was PEER REVIEW of <i>sample numbering/labeling completed</i> ?	Yes No <u>N/A</u>	Peer Reviewed by: <u>N/A</u>
Additional notes (if applicable):		

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



1138460



SAMPLE RECEIPT FORM FOR TRANSFERS

Note: This form is to be completed by Anchorage Sample Receiving staff for all shipments received at SGS-Anchorage from SGS-Fairbanks.

Were samples received numbered with all criteria on Sample Receipt Form F0004 documented by Fairbanks Sample Receiving staff? If "No," <i>Anchorage Sample Receiving staff must complete the receiving process & document pH verification, sample condition, etc. on the SRF initiated by Fairbanks staff</i> (attached).	Yes <input type="radio"/> No <input checked="" type="radio"/> N/A	Use space below for additional notes...
Completed by: <u>MD</u> 09/18/13		

APPENDIX C

ADEC Laboratory Data Review Checklist

Laboratory Data Review Checklist

Completed by:	M. Anne Golias		
Title:	Data Review Specialist	Date:	Oct 22, 2013
CS Report Name:	Lutz Groundwater Monitoring Report	Report Date:	October 2013
Consultant Firm:	Rescon Alaska		
Laboratory Name:	SGS Anchorage, Alaska	Laboratory Report Number:	1138460
ADEC File Number:		ADEC RecKey Number:	

1. Laboratory

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

Yes No NA (Please explain.) Comments:

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

Yes No NA (Please explain) Comments:

Samples transferred from SGS Fairbanks to SGS Anchorage, Alaska.

2. Chain of Custody (COC)

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

Yes No NA (Please explain) Comments:

b. Correct analyses requested?

Yes No NA (Please explain) Comments:

3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ($4^{\circ} \pm 2^{\circ} \text{C}$)?

Yes No NA (Please explain) Comments:

Sample cooler was 1.2-degC upon arrival in Fairbanks. No data required qualification.

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

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

Samples arrived in good condition.

d. If there were any discrepancies, were they documented? - For example, incorrect sample containers/preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?

Yes No NA (Please explain) Comments:

There were no discrepancies.

e. Data quality or usability affected? (Please explain)

Comments:

Data quality and usability was not affected with respect to the sample receipt documentation.

4. Case Narrative

a. Present and understandable?

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

There were no discrepancies, errors or QC failures.

c. Were all corrective actions documented?

Yes No NA (Please explain) Comments:

There were no corrective actions.

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

Comments:

Data quality and usability is not affected with respect to the case narrative report.

5. Samples Results

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

Yes No NA (Please explain)

Comments:

b. All applicable holding times met?

Yes No NA (Please explain)

Comments:

c. All soils reported on a dry weight basis?

Yes No NA (Please explain)

Comments:

There were no soil samples.

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

Yes No NA (Please explain)

Comments:

e. Data quality or usability affected? (Please explain)

Comments:

Data quality and usability is not affected with respect to the reported sample results.

6. QC Samples

a. Method Blank

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

Yes No NA (Please explain)

Comments:

ii. All method blank results less than PQL?

Yes No NA (Please explain)

Comments:

iii. If above PQL, what samples are affected?

Comments:

NA. All method blank results were less than PQL.

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

Yes No NA (Please explain) Comments:

NA. All method blank results were less than PQL.

v. Data quality or usability affected? (Please explain) Comments:

All method blank results were less than PQL. Data quality or usability was not impacted.

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

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

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

There were no metal or inorganic analyses.

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

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

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

Comments:

NA. All %R and RPDs are within acceptable limits.

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

Yes No NA (Please explain) Comments:

NA. All %R and RPDs are within acceptable limits.

vii. Data quality or usability affected? (Please explain) Comments:

Data quality and usability is not affected with respect to the reported LCS/LCSD results.

c. Surrogates - Organics Only

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

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

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

Yes No NA (Please explain) Comments:

NA. There are no failed surrogate recoveries.

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

Comments:

Data quality and usability is not affected with respect to the reported surrogate results.

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

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

Yes No NA (Please explain.) Comments:

Not required. No volatile organic analyses.

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 NA (Please explain.) Comments:

Not required. No volatile organic analyses.

iii. All results less than PQL?

Yes No NA (Please explain.)

Comments:

Not required. No volatile organic analyses.

iv. If above PQL, what samples are affected?

Comments:

NA. Not required. No volatile organic analyses.

v. Data quality or usability affected? (Please explain.)

Comments:

NA. Not required. No volatile organic analyses. Data quality and usability is not affected.

e. Field Duplicate

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

Yes No NA (Please explain)

Comments:

Primary 13-MW-3 with duplicate 13-MW-10

ii. Submitted blind to lab?

Yes No NA (Please explain.)

Comments:

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

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

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

Yes No NA (Please explain)

Comments:

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

Yes No NA (Please explain)

Comments:

Data quality and usability is not affected with respect to the reported field duplicate results.

f. Decontamination or Equipment Blank (if applicable)

Yes No NA (Please explain)

Comments:

NA. Not required. All sampling equipment was disposable.

i. All results less than PQL?

Yes No NA (Please explain)

Comments:

NA. Not required. All sampling equipment was disposable.

ii. If above PQL, what samples are affected?

Comments:

NA. Not required. All sampling equipment was disposable.

iii. Data quality or usability affected? (Please explain.)

Comments:

NA. Not required. All sampling equipment was disposable. Data quality and usability is not affected.

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

a. Defined and appropriate?

Yes No NA (Please explain)

Comments:

Refer to laboratory qualifiers glossary for additional data flags/qualifiers.

Reset Form

