

Faro Mine Complex, Fall 2014 Groundwater Sampling

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Yukon Government

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1.0 INTRODUCTION

Hemmera and Ecological Logistics & Research Ltd. (ELR) were retained by the Government of Yukon (GY), Assessment and Abandoned Mines (AAM) to conduct the 2014 groundwater sampling program at the Faro Mine Complex (FMC). The program consists of two sampling events: spring (May/June) and fall (September). This report summarizes the activities completed and analytical results from the fall sampling event.

1.1 SITE LOCATION

The FMC is located approximately thirteen (13) kilometres (km) northeast of the Town of Faro, Yukon (20 km by road). The FMC consists of two distinct areas, the Faro Mine Area and the Vangorda/Grum Area (**Figure 1-1**), which are connected by a fourteen (14) km roadway (the Haul Road; **Figure 1-1**). Groundwater sampling stations exist throughout the FMC and surrounding area, a series of which were sampled during the fall 2014 program. Specific sampling locations and general sample site distribution are described in Sections 1.2 and 1.3.

1.2 SCOPE OF WORK

The scope of work (SOW) included the coordination and execution of the fall groundwater sampling program and the preparation of this summary report. This report provides a summary of the sampling program activities, methodologies (including any deviations from standard methodologies), field *in-situ* and laboratory analytical results, concentrations of contaminants exceeding the applicable guidelines, and recommendations relating to sample procedures and monitoring well conditions. This report does not provide an interpretation of the analytical results or provide recommendations relating to the program. The fall groundwater sampling event at the FMC was conducted over a ten (10) day period between September 9 and October 15, 2014. A total of 119 groundwater wells were specified by AAM for the fall sampling event (**Table 1-1**), including 18 wells recently installed in 2014. The majority of sampling was completed between September 9 and 17, 2014 (118 wells). One (1) additional well was sampled on October 15, 2014. Sampling was conducted by a team of four (4) field staff from Hemmera/ELR.

At each well (sampling station) the groundwater level and depth to bottom of the well were measured, the well was purged appropriately, and field parameters were measured (pH, water temperature, and conductivity). Groundwater samples were collected following field measurements and purging, and were analysed for general groundwater quality chemistry (major anions/cations and physical parameters), total metals, and dissolved metals. A detailed description of the sampling methodology is provided in Section 2, below.

1.3 SAMPLE SITES

Fall groundwater sampling was conducted at 119 wells across 16 different areas of the FMC (**Table 1-1**; **Figures 1-1 to 1-4**). The majority of fall sample sites were located in the Faro Mine Area (96 wells), with the remaining wells located in the Vangorda/Grum Area (23 wells). A large portion of the wells sampled in the Faro Mine Area were located in the S-Wells Area (31 wells; **Figure 1-3**), with additional wells in the surrounding areas. Wells in the Vangorda/Grum Area were primarily located in the vicinity of the Grum Sulphide Cell (**Figure 1-4**). In addition to the one hundred (100) wells identified in the SOW document, nineteen (19) wells in the vicinity of North Fork Rose Creek (NFRC) had been installed during 2014 and were added to the fall sampling program at the request of AAM, including four (4) shallow wells downstream of the Haul Road, six (6) shallow wells upstream of the Haul Road, and nine (9) deep wells located along the Haul Road near the NFRC. **Table 1-1** summarizes sample sites included in the fall sampling program, while **Figures 1-2 through 1-4** show locations and general distribution of the sites. Photographs of each sample site are included as Appendix A.

Table 1-1 Summary of Groundwater Sample Sites Identified for 2014 Fall Program

Area	Well Name	UTM (Zone 8N)		Well Status	Sample Successfully Collected	QA/QC Sample Collected
		Easting	Northing			
Cross Valley Dam (CVD)	P01-11	580092	6914486	Good	✓	Duplicate
	P03-09-6	579948	6914411	Good	✓	-
	P03-09-9	579948	6914411	Good	✓	-
	P05-01-03	580056	6914505	Good	✓	-
	P05-01-05	580056	6914505	Good	✓	-
	P09-C2	580012	6914402	Good	✓	-
	P09-C3	579970	6914316	Good	✓	-
Down Gradient of CVD	P01-01A	579701	6914854	Good	✓	-
	P01-01B	579701	6914854	Good	✓	Duplicate
Emergency Tailings (ETA) Area	P09-ETA-1	582700	6913813	Good	✓	-
	P09-ETA-2	582700	6913812	Good	✓	-
	P96-8A	583220	6914072	Good	✓	-
	P96-8B	583220	6914072	Good	✓	-
	SRK04-3A	582870	6913995	Good	✓	-
	SRK05-ETA-BR1	582863	6914019	Good	✓	-
	SRK05-ETA-BR2	582879	6913997	Good	✓	Duplicate
Haul Road Near NFRC	MW14-02D	584758	6913127	Good	✓	-
	MW14-02S	584758	6913127	Good	✓	-
	MW14-03	584613	6913290	Good	✓	Duplicate
	MW14-04D	584648	6913321	Good	✓	-
	MW14-04S	584658	6913321	Good	✓	-
	MW14-05	584694	6913345	Good	✓	Duplicate

Area	Well Name	UTM (Zone 8N)		Well Status	Sample Successfully Collected	QA/QC Sample Collected
		Easting	Northing			
Haul Road Near NFRC	PW14-01	584752	6913151	Good	✓	-
	PW14-06	584476	6913310	Good	✓	-
	PW14-07	584690	6913192	Good	✓	-
Intermediate Dam	P01-03	580516	6914255	Good	✓	-
	P01-04A	580372	6914074	Good	✓	-
	P01-04B	580372	6914074	Good	✓	-
	X24-96D	580544	6914298	Good	✓	-
	X25-96A	580544	6914298	Good	✓	-
	X25-96B	580407	6914119	Good	✓	-
Intermediate Dump	P96-6	584902	6913313	Good	✓	-
Main Dump	SRK08-P9	583682	6913620	Good	✓	-
Mill Area	SRK08-10A	582718	6914052	Good	✓	-
	SRK08-11A	582583	6914571	Good	-	-
	SRK08-11B	582587	6914571	Good	✓	-
NFRC Rock Drain Pond	MW14-12D	584858	6913264	Good	✓	-
	MW14-12S	584858	6913264	Good	✓	-
	MW14-13	584921	6913285	Good	✓	Duplicate
	MW14-14	584821	6913250	Good	✓	-
	MW14-15	584831	6913263	Good	✓	-
	MW14-16	584887	6913289	Good	✓	-
Northeast Dumps	BH13B	585746	6914494	Good	✓	-
	BH14A	585584	6914005	Good	✓	-
	BH14B	585584	6914005	Good	✓	-
Second Impoundment	P03-01-2	583179	6912761	Good	✓	-
	P03-01-8	583179	6912761	Good	✓	-
	P03-03-2	583068	6912698	Good	✓	-
	P03-03-4	582484	6913117	Good	✓	-
	P03-03-9	582948	6912879	Good	✓	-
	P03-05-4	582605	6912934	Good	✓	-
	P03-06-1	582452	6913496	Good	✓	-
	P03-06-2	582452	6913496	Good	✓	-
	P03-06-6	582452	6913496	Good	✓	-
	P03-06-7	582452	6913496	Dry	-	-
S-Wells Area	P09-SIS1	584478	6913128	Good	✓	-
	P09-SIS2	584487	6913125	Good	✓	Field Blank
	P09-SIS3	584493	6913117	Good	✓	-
	P09-SIS4	584512	6913107	Good	✓	-
	P09-SIS5	584515	6913110	Good	✓	-
	P96-7	584127	6913287	Good	✓	Duplicate
	S1A	584433	6913114	Good	✓	-
	S1B	584433	6913114	Good	✓	-
	S2A	584471	6913123	Good	✓	-

Area	Well Name	UTM (Zone 8N)		Well Status	Sample Successfully Collected	QA/QC Sample Collected
		Easting	Northing			
S-Wells Area	S2B	584471	6913123	Good	✓	-
	SRK05-SP-1A	584621	6913075	Good	✓	-
	SRK05-SP-1B	584621	6913075	Good	✓	Duplicate
	SRK05-SP-3A	584543	6913094	Good	✓	-
	SRK05-SP-3B	584543	6913094	Good	✓	-
	SRK05-SP-4A	584506	6913110	Good	✓	-
	SRK05-SP-4B	584506	6913110	Good	✓	-
	SRK05-SP-5	584467	6913133	Good	✓	-
	SRK05-SP-6	584492	6912975	Dry	-	-
	SRK08-SBR1	584472	6913128	Broken	-	-
	SRK08-SBR2	584484	6913123	Good	✓	-
	SRK08-SBR3	584394	6913146	Good	✓	-
	SRK08-SBR4	584447	6913140	Good	✓	-
	SRK08-SP-7A	584437	6913095	Good	✓	-
	SRK08-SP-7B	584437	6913095	Good	✓	Duplicate
	SRK08-SP-8A	584295	6912952	Good	✓	-
	SRK08-SP-8B	584295	6912952	Good	✓	-
NFRC Near S-Wells Area	MW14-08	584701	6913035	Good	✓	-
	MW14-09	584691	6913044	Good	✓	-
	MW14-10	584679	6913040	Good	✓	-
	MW14-11	584677	6913028	Good	✓	-
	SRK05-SP-2	584681	6913035	Good	✓	-
Upstream of Tailings	TH86-2	583536	6912494	Good	✓	-
	TH86-5	583587	6912570	Good	✓	-
Vangorda/Grum	BH05-9B-R	592640	6903347	Good	✓	-
	P09-GS1A	592494	6904832	Good	✓	-
	P09-GS1B	592485	6904833	Good	✓	-
	P09-LCD1	593358	6903316	Good	✓	-
	P09-LCD4	593330	6903278	Good	✓	-
	P09-LCD6	593313	6903251	Good	✓	-
	P09-VC1	593518	6903418	Good	✓	-
	P09-VC2	593517	6903431	Good	✓	-
	P2001-02A	593132	6902866	Good	✓	-
	P2001-02B	593132	6902866	Good	✓	-
	P2001-3	593099	6902881	Good	✓	-
	P96-9A	592648	6903345	Good	✓	-
	SRK05-07	592375	6903189	Good	✓	-
	SRK05-08	592582	6903238	Good	✓	-
	SRK05-5C	592763	6903382	Good	✓	-
	SRK05-9	592949	6903158	Good	✓	-
	SRK08-P14	591759	6903699	Good	✓	Duplicate
	SRK08-P15	591960	6903534	Good	✓	-

Area	Well Name	UTM (Zone 8N)		Well Status	Sample Successfully Collected	QA/QC Sample Collected
		Easting	Northing			
Vangorda/Grum	SRK08-P16	592198	6903145	Insufficient Volume	-	-
	V34	593428	6902476	Good	✓	Duplicate
	V35	593175	6902554	Good	✓	-
	V36	593133	6902916	Good	✓	-
	V37	593309	6903079	Good	✓	Field Blank
Zone 2 Outwash/Pit	BH10A	585122	6913711	Good	✓	-
	BH10B	585122	6913711	Good	✓	-
	BH5	585088	6913550	Good	✓	-
	BH6	585092	6913645	Good	✓	Duplicate
	BH8	585144	6913777	Good	✓	-
	P05-04	585115	6913650	Good	✓	-
	SRK08-P12A	585228	6913687	Good	✓	-
	SRK08-P12B	585228	6913687	Good	✓	-



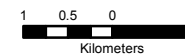
Fall 2014 FMC Groundwater Sampling Program



Client:



Scale: 1:85,000



November 18, 2014

Hemerra Project: 1343.005-02
ELR Project: 14-169.1

FIGURE 1-1
Site Location - Faro Mine Complex



Fall 2014 FMC Groundwater
Sampling Program

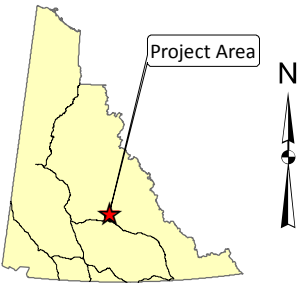


Client:

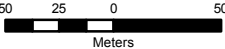


Legend

- Groundwater Monitoring Well Locations



Scale: 1:3,500



November 18, 2014

Hemerra Project: 1343.005-02
ELR Project: 14-169.1

FIGURE 1.3
Groundwater Sampling Locations
S-Wells Area

Drawn by: AN

Checked by: CJ



NOTES:
1. Units: Meters
2. NTS Mapsheet: 115103
3. Projection: UTM Zone 8 NAD83
4. Site features (e.g., roads, trails, streams, waterbodies, watercourses and infrastructure areas) digitized by ELR using 2008 Quickbird imagery (courtesy of Yukon Geomatics) and spatial data provided by Yukon government.
5. ELR Groundwater Sampling Locations collected by ELR September, 2014.

Fall 2014 FMC Groundwater Sampling Program

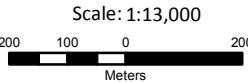
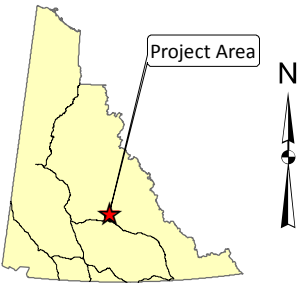


Client:



Legend

Groundwater Monitoring Well Locations



November 18, 2014

Hemerra Project: 1343.005-02
ELR Project: 14-169.1

FIGURE 1-4
Groundwater Sampling Locations
Vangorda Grum Area

Drawn by: AN
Checked by: CJ

2.0 METHODOLOGY

2.1 PROTOCOLS

Groundwater purging and sampling conducted by Hemmera/ELR was in accordance with Yukon Environment's *Protocol for the Contaminated Sites Regulation #7 – Groundwater Monitoring Well Installation, Sampling and Decommissioning* (Yukon Environment, March 2011). Methods used were also consistent with the *ASTM D4448-01 Standard Guide for Sampling Groundwater Monitoring Wells* (ASTM, 2013), the *D6452-99 Guide for Purging Methods for Wells used for Groundwater Quality Investigations* (ASTM, 2012) and in accordance with *Standard Methods for the Examination of Water and Wastewater* (Rice et al., 2012).

2.2 WELL MEASUREMENTS AND PURGING

Upon arriving at each location, the well structure and casing were inspected for damage, closure, and general conditions. Several measurements were recorded from each well, including Depth-to-Water (DTW; m), Depth-to-Bottom (DTB; m), well diameter (cm), and well stick-up height (m).

DTB and DTW were measured using either a Solinst - Model 102 Water Level Meter (for 2.54 cm diameter wells) or a Heron Water Tape (for wells with diameter greater than 2.54 cm). DTB and DTW were measured from (in order of preference): 1) a black mark drawn on the top of the well; 2) the bottom of the most significant notch found on the top of the PVC if a mark was not present; or 3) a line was drawn on the highest point of the well and measurement taken from that line if no distinguishable point of measure was present. Based on information reviewed by Hemmera/ELR, it is unknown where the point of measurement was for previous sampling programs. Stick-up height was measured from the lowest point on the bottom of the well casing to the highest point (or distinguishing mark) on the well. Water level meters were decontaminated between each sample site using a combination of Alconox low-foaming phosphate-free detergent solution and de-ionized water.

Next, groundwater wells were purged and sampled using one of four (4) techniques: 1) Hydrolift electric pump using dedicated high density polyethylene (HDPE) Waterra tubing and footvalve, 2) manual purging using dedicated HDPE Waterra tubing and footvalve, 3) GeoPump peristaltic pump using dedicated HDPE and silicone tubing, or 4) Grundfos Redi-Flo2 submersible pump using dedicated HDPE tubing. The purging technique chosen for each well was that which would produce the most representative groundwater sample.

Groundwater wells were determined to be sufficiently purged when either three successive field parameter measurements were recorded to be within an allowable tolerance level (as summarized in **Table 2-1**, below), or when a volume of groundwater equivalent to three standing well volumes of

groundwater had been purged. Groundwater turbidity measured in Nephelometric Turbidity Units (NTU) was also measured prior to sampling and was used as an indication of sample quality. Where possible samples were not collected until turbidity was less than 50 NTU.

Purge volume measurements were collected using a graduated container and stop watch. All well measurements, purging details, and additional field notes were recorded on field forms, this information is presented in **Table 3-1**.

Table 2-1 Groundwater Sampling – Field Parameter Purging Criteria

Field Parameter	Allowable Variance in 3 Consecutive Readings
Temperature (°C)	3%
pH (pH Units)	+/- 0.1
Conductivity (µS/cm)	3%

2.3 FIELD PARAMETERS

Hemmera/ELR measured general field parameters using either a Hanna 991301 field meter or a YSI Professional Plus multi-parameter meter. All field parameters were collected using a flow through cell in order to minimize field parameter variability. Field parameters recorded at each sample site included; groundwater temperature (°C), conductivity (µS/cm), and pH (pH Units). Where possible, field parameters were recorded throughout the purging process at five-minute intervals. For wells with slow recharge field parameters were recorded at volume related intervals (e.g., every 500 mL). Groundwater turbidity was measured at the time of sample collection using either a LaMotte 2020we or a Hach 2100Q Portable turbidity meter.

2.4 GROUNDWATER QUALITY SAMPLE COLLECTION

Groundwater quality samples were collected and preserved in accordance with laboratory directions, and using techniques consistent with Standard Methods for the Examination of Water and Wastewater (Rice et al., 2012). ALS Global was the analytical subcontractor chosen for this project, and an example summary of the sample set collected at each sample location, including parameters analysed and preservation techniques, is provided in **Table 2-2**.

Table 2-2 Groundwater Sampling – Preservation and Intended Analysis

Bottle Type	Parameters Analyzed	Sample Treatment	Preservation Added
120 mL (Plastic)	Total Metals	Preserved	HNO ₃
120 mL (Plastic)	Dissolved Metals	Field Filtered and Preserved	HNO ₃
1 L (Plastic)	Acidity, alkalinity, chloride, conductivity, pH, sulphate, total suspended solids (TSS)	-	None

2.5 DATA ANALYSIS

Groundwater analytical results were compared to the Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines for the Protection of Freshwater Aquatic Life (FAL; CCME, 2014). All relevant CCME FAL guidelines are presented in **Table 3-2**.

2.6 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

2.6.1 Field QA/QC

Several controls were used by Hemmera/ELR staff while in the field to help ensure that sample integrity was maintained and that data was recorded completely and accurately. All equipment used during the sampling process was dedicated to individual wells, including HDPE tubing and Waterra footvalves, laboratory provided pre-cleaned sample bottles, disposable filters, and disposable syringes. The only exception to this was a Grundfos Redi-Flo2 submersible pump that was required for several deep wells in the fall program. Field staff wore dedicated disposable nitrile gloves for all measurements, purging, and sampling. Water level meters and the submersible pump were cleaned using Alconox low-foaming phosphate-free detergent and de-ionized water and between wells, and field instruments (Hanna/YSI field meters and turbidity meters) were checked and/or calibrated before each site visit to ensure the parameters recorded were as accurate as possible.

Project-specific field data sheets were created for the sampling event to help ensure that all required measurements were taken, and that information was recorded correctly. Field data sheets have been included as Appendix B of this report.

2.6.2 Laboratory and Sampling QA/QC

Laboratory and sampling QA/QC measures taken as part of the fall sampling program include the collection of travel blanks, duplicates, and field blanks, as outlined in the SOW and as per standard industry practice. Duplicate samples were collected at a ratio of 10% of the regular samples (12 duplicates were collected in relation to 119 sample sites). Additionally, two field blanks were collected, and two travel blanks accompanied the analytical supplies and samples during shipping to and from the laboratory.

The variation between sample and duplicate values was calculated as relative percent difference (RPD). RPD provides a measure of the relative difference between two values in comparison to their mean value, and is calculated as the difference between a sample and its field duplicate over the average of two values. RPD values greater than 20% indicate a potential error that has affected the precision of sampling or analysis. RPD was calculated according to the following formula:

$$\%RPD = \left(\frac{\left(\frac{x_1 - x_2}{x_1 + x_2} \right)}{2} \right) \times 100$$

RPD is not calculated if either the sample or the field duplicate concentration is less than five times the detection limit. QA/QC analytical results including RPD values are presented in **Table 3-3**.

Laboratory replicates and additional quality control measures (i.e., measures against lab standards) were conducted by ALS. Laboratory QA/QC analytical results are included as **Appendix A** and discussed in Section 3.3.

3.0 RESULTS

Summary tables of the laboratory analytical results are presented in **Table 3-2** of this report, including comparisons of results to CCME FAL guidelines. A summary of the QA/QC sampling results is also attached, including analytical data for duplicates, field blank, and travel blank (**Table 3-3**). Laboratory analytical reports are provided as **Appendix A**.

3.1 GROUNDWATER SAMPLING SUMMARY

The majority of fall 2014 groundwater sampling was completed between September 9 and September 15, 2014 (110 wells), with the remaining wells sampled between September 16 and 17, 2014 (9 wells). A return trip to locate and sample well SRK08-P-16 was completed on October 15, 2014. Weather conditions varied throughout sampling with ambient air temperature ranging from -2 to 19°C. Weather conditions were pre-dominantly clear and sunny with periods of overcast conditions. All 119 groundwater wells specified for the fall sampling event were located and assessed by Hemmera/ELR. Groundwater samples were successfully collected at 115 of the 119 sampling locations as outlined in **Table 1-1**. Two (2) wells were dry (P03-06-7 and SRK05-SP-6), one (1) well was damaged (SRK08-SBR1), and one (1) had an insufficient groundwater volume to sample (SRK08-P-16). A summary of groundwater wells sampled during the fall 2014 sampling event, including field parameters and well measurements, is provided in **Table 3-1**. All samples were received by the laboratory within the required holding times and temperature limits.

A summary of the sampling results and guideline exceedances is provided in the following sections, organized by area.

Table 3-1 Groundwater Field Parameters and Well Measurements for 2014 Fall Sampling Program

Area	Well Name	Sample Date	Stick up height (m)	Depth To Water (m)	Depth To Bottom (m)	Standing Water volume (L)	Volume Purged (L)	Purge Start time	Purge End Time	Elapsed Purge Time	Purge Rate (l/min)	Criteria (3WV / PS)	Draw Down (m)	pH	Temperature (°C)	Conductivity (µs/cm) ¹	Field Turbidity (NTU) ²	Method Used	Well diameter (inches)
Cross Valley Dam (CVD)	P01-11	2014-09-10	1.20	1.202	11.060	20.0	6.00	10:15	10:35	0:20	0.30	PS	0.010	6.63	4.6	2242.0	6.69	peristaltic	2
	P03-09-6	2014-09-10	0.62	3.321	19.582	2.0	1.75	12:09	12:30	0:21	0.08	PS	NR	6.77	4.6	1155.0	9.95	peristaltic	1/2
	P03-09-9	2014-09-10	0.67	4.058	8.383	0.5	1.50	11:32	11:50	0:18	0.08	3WV	NR	6.70	4.2	184.4	45.00	peristaltic	1/2
	P05-01-03	2014-09-10	0.56	1.555	17.765	2.0	1.00	14:25	14:37	0:12	0.08	PS	NR	6.36	6.7	2338.0	14.20	peristaltic	1/2
	P05-01-05	2014-09-10	0.62	2.036	6.548	0.6	1.00	13:52	14:04	0:12	0.08	PS	NR	6.42	6.8	2113.0	0.83	peristaltic	1/2
	P09-C2	2014-09-10	0.87	0.625	64.580	128.0	50.00	9:25	9:50	0:25	2.00	PS	6.769	6.45	4.1	1619.0	23.40	hydrolift	2
	P09-C3	2014-09-10	0.79	1.486	49.990	97.0	105.00	8:25	9:00	0:35	0.45	PS	0.157	6.69	3.9	845.0	0.62	hydrolift	2
Down Gradient of CVD	P01-01A	2014-09-09	0.64	3.652	20.345	33.5	35.00	10:35	11:05	0:30	1.17	PS	0.013	6.73	2.1	1062.0	0.46	hydrolift	2
	P01-01B	2014-09-09	0.59	3.740	35.535	63.5	60.00	11:15	11:55	0:40	1.50	PS	0.020	7.40	2.4	848.0	0.63	hydrolift	2
Emergency Tailings (ETA) Area	P09-ETA-1	2014-09-13	0.98	8.672	33.700	50.0	38.00	15:15	16:05	0:50	0.76	PS	7.423	7.89	7.5	275.6	11.40	hydrolift	2
	P09-ETA-2	2014-09-13	0.70	12.969	18.500	11.0	24.50	14:25	15:00	0:35	0.70	PS	0.041	6.30	5.2	4299.0	2.95	hydrolift	2
	P96-8A	2014-09-11	0.78	2.431	4.833	4.8	5.50	16:26	16:46	0:20	0.28	PS	0.019	3.52	9.0	>4000	2.09	peristaltic	2
	P96-8B	2014-09-11	0.69	2.349	9.428	14.2	8.00	16:52	17:21	0:29	0.28	PS	0.011	5.03	7.7	>4000	2.83	peristaltic	2
	SRK04-3A	2014-09-13	0.65	6.133	12.380	12.5	14.00	13:10	13:45	0:35	0.40	PS	0.035	5.42	5.1	6285.0	3.63	peristaltic	2
	SRK05-ETA-BR1	2014-09-13	0.77	7.051	13.268	7.0	6.75	11:38	12:06	0:28	0.24	PS	-0.001	5.17	5.8	6160.0	1.16	peristaltic	1.5
	SRK05-ETA-BR2	2014-09-13	0.47	4.939	19.342	7.0	7.00	12:15	12:50	0:35	0.20	PS	0.693	6.83	5.1	1689.0	4.17	peristaltic	1
Haul Road/Road Near NFRC	MW14-02D	2014-09-15	0.95	58.656	78.900	41.0	116.00	10:29	11:06	0:37	3.14	PS	NR	5.69	4.6	492.0	6.10	subm. pump	2
	MW14-02S	2014-09-15	0.95	58.135	78.900	147.0	185.00	8:57	9:48	0:51	3.63	PS	NR	7.05	6.8	157.0	8.18	subm. pump	3.75
	MW14-03	2014-09-14	0.89	53.833	60.900	128.0	177.00	8:34	10:17	0:43	4.12	PS	NR	7.07	11.0	814.0	16.40	subm. pump	6
	MW14-04D	2014-09-15	0.95	69.048	75.200	12.5	69.50	16:39	17:29	0:50	1.39	PS	NR	6.67	13.2	2855.0	13.20	subm. pump	2
	MW14-04S	2014-09-17	0.95	61.180	62.630	7.0	10.00	15:30	16:23	0:53	0.19	Criteria not met ³	1.450	6.74	7.3	>4000	11.18	subm. pump	3.75
	MW14-05	2014-09-15	0.86	53.350	66.900	246.0	187.50	14:55	15:41	0:46	0.76	PS	NR	6.42	11.3	3651.0	8.21	subm. pump	6
	PW14-01	2014-09-14	1.02	59.673	78.300	338.0	226.00	16:49	17:57	1:08	3.32	PS	NR	5.69	3.9	524.0	2.50	subm. pump	6
	PW14-06	2014-09-14	1.00	46.995	62.900	127.4	154.50	11:30	12:20	0:50	0.00	PS	NR	4.23	22.2	>4000	2.52	subm. pump	4
	PW14-07	2014-09-14	0.93	66.297	76.800	192.0	195.00	14:28	15:08	0:40	0.81	PS	NR	5.52	3.8	796.0	2.54	subm. pump	6
Intermediate Dam	P01-03	2014-09-09	0.44	2.936	9.645	13.5	13.50	13:45	14:20	0:35	0.39	PS	1.504	6.04	4.2	2372.0	8.75	peristaltic	2
	P01-04A	2014-09-09	0.32	1.535	53.150	103.5	105.00	17:35	18:10	0:35	0.45	PS	0.060	6.52	3.6	682.0	1.11	hydrolift	2
	P01-04B	2014-09-09	0.30	2.003	34.085	64.0	70.00	16:20	16:40	0:20	3.50	PS	0.008	6.75	3.3	1563.0	0.67	hydrolift	2
	X24-96D	2014-09-09	0.96	3.765	28.284	48.5	50.00	12:35	13:15	0:40	1.25	PS	16.105	6.12	3.4	1999.0	10.00	hydrolift	2
	X25-96A	2014-09-09	0.63	3.184	9.462	12.5	13.00	14:50	15:20	0:30	0.43	PS	-0.009	6.80	3.9	1765.0	1.13	peristaltic	2
	X25-96B	2014-09-09	0.61	3.056	19.705	33.5	11.00	15:30	15:50	0:20	0.55	PS	-0.014	7.42	3,7	1022.0	1.17	peristaltic	2
Intermediate Dump	P96-6	2014-09-12	0.25	11.898	18.340	12.9	30.00	17:48	18:15	0:27	1.11	PS	0.102	6.45	1.2	2067.0	3.10	hydrolift	2
Main Dump	SRK08-P9	2014-09-11	0.10	4.419	6.170	3.5	5.00	15:04	15:34	0:30	0.17	PS	0.411	7.16	3.7	2323.0	24.00	peristaltic	2

Area	Well Name	Sample Date	Stick up height (m)	Depth To Water (m)	Depth To Bottom (m)	Standing Water volume (L)	Volume Purged (L)	Purge Start time	Purge End Time	Elapsed Purge Time	Purge Rate (l/min)	Criteria (3WV / PS)	Draw Down (m)	pH	Temperature (°C)	Conductivity (µs/cm) ¹	Field Turbidity (NTU) ²	Method Used	Well diameter (inches)
Mill Area	SRK08-10A	2014-09-10	0.73	10.344	13.762	6.9	21.00	15:15	15:50	0:35	0.60	3WV	1.054	6.39	3.0	2265.0	35.10	waterra	2
	SRK08-11A	2014-09-10	0.69	0.765	12.467	23.5	6.00	16:50	17:10	0:20	0.30	PS	0.067	6.97	3.4	749.0	1.52	peristaltic	2
	SRK08-11B	2014-09-10	0.94	1.110	6.735	11.3	6.00	16:20	16:40	0:20	0.30	PS	0.026	6.54	4.4	1140.0	1.35	peristaltic	2
NFRC Rock Drain Pond	MW14-12D	2014-09-13	0.93	1.902	6.350	8.9	10.00	11:16	11:52	0:36	0.28	PS	-0.002	5.82	2.9	780.0	1.53	peristaltic	2
	MW14-12S	2014-09-13	1.00	2.004	3.920	3.8	7.50	10:27	11:12	0:45	0.17	PS	0.836	6.12	5.6	621.0	22.50	peristaltic	2
	MW14-13	2014-09-13	0.99	3.365	5.005	3.3	6.50	9:48	10:09	0:21	0.31	PS	0.005	5.67	2.3	1612.0	1.51	peristaltic	2
	MW14-14	2014-09-16	0.89	1.531	3.500	1.0	1.00	12:22	12:29	0:07	0.14	3WV	1.969	6.62	6.7	2091.0	19.10	waterra	1.5
	MW14-15	2014-09-14	1.15	2.032	3.295	0.4	3.00	12:00	13:56	1:56	0.03	3WV	0.775	6.71	9.4	699.0	71.00	peristaltic	1
	MW14-16	2014-09-13	0.98	4.985	6.900	3.8	5.00	9:11	9:32	0:21	0.24	PS	-0.005	5.92	7.3	1510.0	2.14	peristaltic	2
Northeast Dumps	BH13B	2014-09-12	0.75	2.690	4.400	3.4	6.50	14:33	15:04	0:31	0.21	PS	0.015	6.58	1.6	1150.0	2.06	peristaltic	2
	BH14A	2014-09-12	0.06	3.420	6.441	6.0	6.50	15:28	16:00	0:32	0.20	PS	0.445	6.57	4.5	3950.0	8.19	peristaltic	2
	BH14B	2014-09-12	0.64	4.090	10.060	11.9	7.50	16:11	16:52	0:41	0.18	PS	2.920	6.74	3.5	3744.0	12.50	peristaltic	2
Second Impoundment	P03-01-2	2014-09-16	NR	5.800	39.325	4.2	6.00	11:10	12:01	0:51	0.12	PS	NR*	6.94	5.0	416.0	2.65	peristaltic	0.5
	P03-01-8	2014-09-16	NR	5.723	10.060	0.5	3.00	10:22	10:54	0:32	0.09	3WV	NR*	5.92	6.0	>4000	6.94	peristaltic	0.5
	P03-03-2	2014-09-15	0.67	7.089	34.292	3.4	9.00	13:51	14:17	0:25	0.36	PS	NR*	4.80	5.6	218.4	1.48	peristaltic	0.5
	P03-03-4	2014-09-15	0.83	8.650	24.545	2.0	6.50	11:18	11:39	0:21	0.31	PS	NR*	6.20	5.2	1155.0	4.72	micro waterra	0.5
	P03-03-9	2014-09-15	0.83	6.870	18.179	0.4	1.50	12:49	13:04	0:05	0.30	3WV	NR*	5.68	8.8	336.4	613 AU	peristaltic	0.5
	P03-05-4	2014-09-15	0.73	7.130	23.425	2.1	6.00	13:25	13:43	0:18	0.33	3WV	NR*	5.50	5.2	202.7	2.32	peristaltic	0.5
	P03-06-1	2014-09-15	0.85	14.920	26.581	1.5	6.00	10:08	10:30	0:22	0.27	3WV	NR*	4.68	8.2	3186.0	9.17	micro waterra	0.5
	P03-06-2	2014-09-15	0.88	12.260	23.699	1.4	6.00	9:35	9:47	0:12	0.50	PS	NR*	4.90	5.4	3099.0	939 AU	micro waterra	0.5
	P03-06-6	2014-09-15	0.94	12.349	13.627	0.2	1.50	8:45	9:13	0:28	0.05	3WV	NR*	NR**	NR**	NR**	out of range ³	micro waterra	0.5
	P03-06-7	2014-09-15	0.95	dry	11.816	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5
S-Wells Area	P09-SIS1	2014-09-09	0.99	4.600	6.555	3.9	4.00	12:24	13:01	0:37	0.11	PS	0.740	6.51	6.4	>4000	20.00	peristaltic	2
	P09-SIS2	2014-09-09	1.16	3.920	6.325	4.8	5.00	14:06	14:37	0:31	0.16	PS	0.040	5.60	6.6	1214.0	2.15	peristaltic	2
	P09-SIS3	2014-09-09	1.04	3.910	4.605	1.4	3.50	14:55	15:16	0:21	0.17	PS	0.050	7.05	5.9	1323.0	0.95	peristaltic	2
	P09-SIS4	2014-09-09	0.95	4.040	4.440	0.8	1.50	15:34	15:47	0:13	0.12	PS	0.300	7.05	6.5	>4000	12.00	peristaltic	2
	P09-SIS5	2014-09-09	1.09	3.596	4.550	1.9	2.00	16:04	16:22	0:18	0.11	PS	0.624	7.05	6.9	>4000	17.40	peristaltic	2
	P96-7	2014-09-10	0.85	5.138	9.895	9.5	9.00	8:03	8:42	0:39	0.04	PS	0.112	7.12	1.4	3102.0	1.75	peristaltic	2
	S1A	2014-09-10	1.34	4.793	12.890	16.4	22.00	14:00	14:30	0:30	0.73	PS	NR	5.80	1.8	3005.0	61.40	waterra	2
	S1B	2014-09-11	1.17	4.530	5.175	1.5	2.50	12:50	18:00	5:10	- ⁵	3WV	Dry	6.47	4.1	809.0	1.93	peristaltic	2
	S2A	2014-09-10	1.22	5.232	12.670	15.0	12.00	11:36	12:27	0:31	0.39	PS	0.018	5.96	2.6	2125.0	18.50	peristaltic	2
	S2B	2014-09-10	0.54	4.457	7.065	5.2	7.00	10:52	11:28	0:36	0.19	PS	1.043	5.85	2.5	>4000	20.30	peristaltic	2
	SRK05-SP-1A	2014-09-10	0.75	7.235	20.170	25.9	35.00	15:37	16:21	0:44	0.80	PS	0.025	5.64	1.1	2320.0	4.18	hydrolift	2
	SRK05-SP-1B	2014-09-11	0.52	7.115	13.110	12.0	7.00	11:41	12:18	0:37	0.19	PS	0.005	6.05	1.9	1067.0	4.03	peristaltic	2
	SRK05-SP-3A	2014-09-10	0.86	4.896	23.810	37.8	58.00	15:13	15:34	0:21	2.76	PS	0.364	6.03	1.3	1560.0	3.88	hydrolift	2
	SRK05-SP-3B	2014-09-10	0.90	4.064	13.305	18.5	10.00	14:36	15:06	0:30	0.33	PS	0.036	5.68	1.8	1145.0	6.58	peristaltic	2
	SRK05-SP-4A	2014-09-09	0.59	4.522	22.400	7.878	35.00	17:53	18:20	0:27	1.30	PS	- ⁶	5.98	2.0	1392.0	4.00	hydrolift	2
	SRK05-SP-4B	2014-09-09	0.84	4.025	4.765	1.5	3.00	17:15	17:39	0:24	0.13	PS	- ⁶	5.97	4.9	>4000	5.54	peristaltic	2

Area	Well Name	Sample Date	Stick up height (m)	Depth To Water (m)	Depth To Bottom (m)	Standing Water volume (L)	Volume Purged (L)	Purge Start time	Purge End Time	Elapsed Purge Time	Purge Rate (l/min)	Criteria (3WV / PS)	Draw Down (m)	pH	Temperature (°C)	Conductivity (µs/cm) ¹	Field Turbidity (NTU) ²	Method Used	Well diameter (inches)
S-Wells Area	SRK05-SP-5	2014-09-09	0.99	6.136	14.730	17.2	55.00	13:01	13:35	0:34	1.62	3WV	1.874	5.88	2.8	151	8.54	hydrolift	2
	SRK05-SP-6	2014-09-11	-	Dry	11.780	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SRK08-SBR1	2014-09-11	-	Broken	Broken	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	SRK08-SBR2	2014-09-11	0.54	6.577	0.540	24.0	52.00	14:15	14:34	0:19	2.74	PS	NR	7.06	2.3	3475.0	43.00	waterra	2
	SRK08-SBR3	2014-09-11	0.96	11.631	13.173	3.1	9.00	13:02	13:17	0:15	0.60	3WV	0.009	6.90	2.1	3362.0	16.60	waterra	2
	SRK08-SBR4	2014-09-10	0.80	7.621	21.500	27.6	39.00	12:52	13:21	0:29	1.34	PS	NR	5.88	1.6	>4000	2.40	hydrolift	2
	SRK08-SP-7A	2014-09-09	1.00	2.635	17.750	30.2	45.00	11:30	11:52	0:22	2.05	PS	0.475	5.95	1.9	830.0	2.80	hydrolift	2
	SRK08-SP-7B	2014-09-09	1.06	2.718	8.690	11.9	10.50	10:30	11:10	0:40	0.26	PS	0.004	5.76	2.8	273.0	1.99	peristaltic	2
	SRK08-SP-8A	2014-09-10	1.20	1.800	8.520	13.4	10.50	9:26	9:52	0:26	0.40	PS	0.020	5.98	0.9	2781.0	1.07	peristaltic	2
	SRK08-SP-8B	2014-09-10	1.04	1.900	7.030	10.3	9.50	9:58	10:23	0:25	0.38	PS	0.010	6.04	1.0	2709.0	0.98	peristaltic	2
NFRC Near S-Wells Area	MW14-08	2014-09-10	0.96	1.687	3.270	3.2	5.50	16:38	17:00	0:38	0.14	PS	0.253	6.70	6.6	505.0	5.00	peristaltic	2
	MW14-09	2014-09-11	0.83	2.678	6.710	8.1	9.50	9:02	9:35	0:33	0.29	PS	1.547	6.31	1.5	757.0	11.40	peristaltic	2
	MW14-10	2014-09-11	0.94	3.124	5.540	4.8	7.50	9:47	10:12	0:19	0.39	PS	0.456	7.22	3.7	1035.0	23.00	peristaltic	2
	MW14-11	2014-09-10	0.79	1.845	4.455	5.4	5.00	17:16	17:40	0:24	0.21	PS	0.735	6.96	2.8	670.0	9.34	peristaltic	2
	SRK05-SP-2	2014-09-11	0.82	2.276	11.820	19.1	10.00	8:25	8:52	0:27	0.37	PS	0.014	5.78	1.5	511.0	2.34	peristaltic	2
Upstream of Tailings	TH86-2	2014-09-16	0.43	1.755	11.410	19.3	14.00	14:05	14:50	0:45	0.31	PS	0.015	7.01	5.4	245.0	9.40	peristaltic	2
	TH86-5	2014-09-16	1.22	8.747	27.500	37.5	130.00	12:59	13:47	0:48	2.71	3WV	0.073	6.54	3.6	855.0	8.79	hydrolift	2
Vangorda/ Grum	BH05-9B-R	2014-09-12	0.93	1.011	19.852	37.7	2.30	14:03	14:23	0:20	0.12	PS	0.488	7.75	6.8	160.0	8.16	peristaltic	2
	P09-GS1A	2014-09-14	1.24	2.339	7.373	10.0	18.00	8:38	9:08	0:30	0.60	PS	0.026	6.76	8.1	850.0	1.35	peristaltic	2
	P09-GS1B	2014-09-14	0.92	2.170	29.710	55.0	18.00	9:30	10:20	0:50	0.36	PS	2.310	6.76	6.1	129.5	3.24	peristaltic	2
	P09-LCD1	2014-09-13	0.95	3.741	7.350	7.2	7.70	9:00	9:25	0:25	0.31	PS	0.079	7.17	3.1	563.0	1.93	peristaltic	2
	P09-LCD4	2014-09-14	0.95	7.417	12.210	9.6	9.35	9:50	10:00	0:10	0.94	3WV	4.800	7.23	3.7	531.0	45.40	peristaltic	2
	P09-LCD6	2014-09-13	0.79	5.769	7.930	4.5	4.75	10:13	10:31	0:18	0.26	PS	0.076	7.18	3.4	617.0	5.96	peristaltic	2
	P09-VC1	2014-09-12	0.99	3.786	68.635	130.0	27.50	10:05	10:35	0:30	0.92	PS	1.799	8.04	3.9	213.0	5.22	hydrolift	2
	P09-VC2	2014-09-12	0.94	1.555	19.870	37.0	25.00	8:45	9:25	0:40	0.63	PS	0.350	7.39	3.9	241.9	1.82	hydrolift	2
	P2001-02A	2014-09-13	0.53	3.997	6.595	5.3	1.70	12:37	13:07	0:30	0.06	3WV	2.600	6.79	6.8	211.5	13.90	peristaltic	2
	P2001-02B	2014-09-11	0.37	3.830	27.670	47.8	19.50	13:40	14:20	0:40	0.49	PS	4.670	6.95	5.5	1918.0	10.58	hydrolift	2
	P2001-3	2014-09-11	0.70	37.004	62.42	~50	120.00	11:15	12:05	0:50	2.40	PS	NR	7.44	2.8	563.0	47.10	hydrolift	2
	P96-9A	2014-09-12	0.92	5.808	9.393	7.2	3.00	13:28	13:48	0:20	0.15	PS	0.057	6.62	6.2	238.1	1.71	peristaltic	2
	SRK05-07	2014-09-12	0.69	5.730	6.445	1.4	1.45	11:25	11:44	0:19	0.08	PS	0.042	6.82	5.0	2113.0	2.69	peristaltic	2
	SRK05-08	2014-09-12	0.74	5.876	8.489	5.2	2.90	12:19	12:39	0:20	0.15	PS	0.175	6.86	5.4	1720.0	1.49	peristaltic	2
	SRK05-5C	2014-09-12	0.96	1.648	3.716	4.1	4.00	14:58	15:28	0:30	0.13	PS	0.140	7.55	6.2	410.5	7.15	peristaltic	1.5
	SRK05-9	2014-09-13	0.50	2.736	3.954	1.4	6.00	17:10	17:42	0:32	0.19	3WV	1.218	7.35	6.0	1456.0	19.90	micro-waterra	1.5
	SRK08-P14	2014-09-14	0.73	6.710	9.875	6.4	6.25	14:36	15:00	0:24	0.26	PS	0.046	6.85	3.3	187.4	4.62	peristaltic	2
	SRK08-P15	2014-09-14	0.37	3.178	8.275	10.2	10.00	13:08	13:52	0:44	0.23	PS	0.045	6.97	2.8	122.7	6.40	peristaltic	2
	SRK08-P16	2014-10-15	0.73	7.297	7.316	0.38 (Dry)	-	-	-	-	-	-	-	-	-	-	-	peristaltic	2
	V34	2014-09-11	0.55	5.713	12.307	13.3	2.75	8:42	9:09	0:27	0.10	PS	0.837	6.83	3.3	108.1	12.80	peristaltic	2
	V35	2014-09-11	0.45	6.362	16.010	19.0	1.75	10:00	10:25	0:25	0.07	PS	0.974	6.93	3.6	1645.0	2.10	peristaltic	2
	V36	2014-09-11	0.995	8.706	11.855	6.3	8	15:20	15:33	0:13	0.62	PS	0.28	6.94	4.1	3192.0	6.27	waterra	2
	V37	2014-09-13	0.49	8.500	14.497	12.0	35.00	16:07	16:33	0:26	1.35	3WV	5.997	7.36	3.2	735.0	22.00	waterra	2

Area	Well Name	Sample Date	Stick up height (m)	Depth To Water (m)	Depth To Bottom (m)	Standing Water volume (L)	Volume Purged (L)	Purge Start time	Purge End Time	Elapsed Purge Time	Purge Rate (l/min)	Criteria (3WV / PS)	Draw Down (m)	pH	Temperature (°C)	Conductivity (µs/cm) ¹	Field Turbidity (NTU) ²	Method Used	Well diameter (inches)
Zone 2 Outwash/Pit	BH10A	2014-09-12	1.65	6.080	6.920	1.7	6.00	10:08	10:49	0:41	0.15	3WV	0.030	6.24	3.2	451.0	3.65	peristaltic	2
	BH10B	2014-09-12	0.87	5.311	9.190	7.8	9.00	9:16	9:59	0:43	0.21	PS	0.029	6.15	2.1	404.0	28.90	peristaltic	2
	BH5	2014-09-12	0.69	2.199	7.350	10.3	9.00	12:42	13:20	0:38	0.24	PS	0.001	5.48	3.3	669.0	7.85	peristaltic	2
	BH6	2014-09-12	0.74	3.357	6.646	6.6	5.50	7:58	8:21	0:23	0.24	PS	0.003	5.85	2.2	522.0	5.49	peristaltic	2
	BH8	2014-09-13	0.79	17.119	20.780	7.4	8.00	14:03	18:31	4:28	- ⁵	PS	3.661	7.05	5.1	3088.0	31.60	hydrolift	2
	P05-04	2014-09-12	0.67	3.094	7.025	7.9	6.50	8:35	8:55	0:20	0.33	PS	0.006	5.94	1.9	555.0	0.81	peristaltic	2
	SRK08-P12A	2014-09-12	0.72	2.105	12.735	21.3	7.50	11:46	12:18	0:32	0.23	PS	0.035	5.60	2.3	1255.0	18.10	peristaltic	2
	SRK08-P12B	2014-09-12	0.73	2.091	8.490	12.3	7.50	11:08	11:40	0:32	0.23	PS	0.001	5.61	1.8	851.0	3.98	peristaltic	2

Notes:
NR = Not recorded in the field, NR* = Not Recorded due to limiting diameter of well casing, NR** = Not Recorded due to turbid conditions.
‘-’ = Not Applicable.
¹ Sample sites where conductivity is measured using a Hanna 991300 has a range of 0.0 to 3999.0 µS/cm.
² Turbidity values are reported in NTU unless otherwise indicated.
³ Purging criteria for well MW14-04S was not met due to insufficient volumes.
⁴ Out-of-range indicates turbidity is >4000 NTU
⁵Due to low volume and slow recharge, wells S1B and BH8 were drawn down over a longer time period, and purge rate could not be calculated.
⁶ Drawdown/recharge could not be measured at wells SRK05-SP-4A and SRK05-SP-4B due to a broken well casing (damage restricted access to the top of well casing during the purging process).

3.2 ANALYTICAL RESULTS

Analytical results, including a brief summary of CCME FAL guideline exceedances and factors which may have influenced data precision, are provided below. In some instances the laboratory detection limits (DL) exceeded applicable CCME FAL standards (values shaded in light grey in **Table 3-2**). This occurs when samples with high levels of some elements or compounds require dilution in order for the lab to properly analyse the sample. Accordingly, the laboratory detection limit must then be increased. In the case of mercury, low-level analytical methods are required to achieve detection limits relevant to the guidelines. Because mercury was not specified in the SOW, specific sampling for mercury was not included as part of the laboratory program during this sample event, and therefore the low-level analytical methods were not used. For the purpose of this report, samples where the reported DL is higher than the applicable guideline have not been reported as CCME FAL exceedances.

3.2.1 Cross Valley Dam

Groundwater wells located in the Cross Valley Dam (CVD) area were sampled on September 10, 2014. Samples were obtained from seven (7) wells within this area identified for the sampling event.

Concentrations of dissolved aluminum, arsenic, cadmium, iron and silver in groundwater exceeded the CCME FAL guidelines in all samples collected from the CVD area. Concentrations of total aluminum, arsenic, cadmium, chromium, copper, iron, lead, silver, and zinc in groundwater also exceeded the CCME FAL guidelines in at least one (1) of the seven (7) wells.

Hemmera/ELR noted that P03-09-9, P03-09-6, P05-01-05, P05-01-03, and P09-C2 did not have PVC caps or J-plugs on the wells, which can allow for potential contamination. At two of the sample stations (P05-01 and P03-09), the well diameter was too narrow to allow for continuous monitoring of drawdown/recharge during the purging process. Drawdown measurements are therefore not provided for either of these sample site locations (P05-01 and P03-09). Hemmera/ELR also noted that the stickup of well P09-C2 was damaged and loose, leaning at an angle of ~20 degrees from vertical, and eroding at the concrete base.

Groundwater turbidity of all CVD samples was less than 50 NTU.

3.2.2 Down Gradient of Cross Valley Dam

Groundwater wells located down gradient of the CVD area were sampled on September 9, 2014. Samples were obtained from both wells (2) within this area identified for the sampling event.

Concentrations of dissolved cadmium and iron in groundwater exceeded the CCME FAL guidelines in samples collected from one (1) well each down gradient of the CVD area. Concentrations of total cadmium and iron in groundwater also exceeded the CCME FAL guidelines in one (1) well.

Hemmera/ELR staff noted that wells located down gradient of the CVD area did not have PVC caps or J-plugs covering the wells, which can allow for potential contamination. Groundwater turbidity in all samples within this area was less than 50 NTU.

3.2.3 ETA Area

Groundwater wells located in the ETA Area were sampled between September 11 and 13, 2014. Samples were obtained from seven (7) wells in this area identified for the sampling event.

Groundwater pH in the ETA area was less than CCME FAL guidelines in five (5) of the seven (7) samples (ranging from 3.61 to 6.05 based on laboratory pH values). Concentrations of either dissolved aluminum, arsenic, cadmium, copper, iron, lead, nickel, uranium, and zinc in groundwater exceeded the CCME FAL guidelines in at least one sample. Concentrations of total aluminum, arsenic, cadmium, copper, iron, lead, mercury, nickel, silver, uranium, and zinc in groundwater also exceeded the CCME FAL guidelines.

Hemmera/ELR staff noted that well SRK05-ETA-BR1 had no PVC cap or J-plug covering the well, which can allow for potential contamination. It was also noted that well SRK05-ETA-BR2 had no metal casing and that the concrete base was eroding and in risk of collapse. Groundwater turbidity in all samples collected within the ETA area was less than 50 NTU.

3.2.4 Haul Road/Near NFRC

Groundwater wells located on the haul road near the NFRC were sampled between September 14 and 17, 2014. Samples were obtained from nine (9) wells in this area identified for the sampling event.

Groundwater pH in the Haul Road area was not in compliance with CCME FAL guidelines in three (3) of the nine (9) samples (ranging from 4.47 to 6.45 based on laboratory pH values). Concentrations of dissolved aluminum, arsenic, cadmium, iron, lead, nickel, thallium, uranium, and zinc in groundwater exceeded the CCME FAL guidelines in the three samples. Concentrations of total aluminum, arsenic, cadmium, chromium copper, iron, lead, nickel, thallium, uranium, and zinc in groundwater also exceeded the CCME FAL guidelines.

Wells located in the Haul Road area were sampled using a Redi-Flo2 submersible pump and have a DTB ranging from 46 to 69 meters. Due to energy release by the pump, in-situ groundwater temperatures may have been altered during both the purging and sampling process. Purging criteria for well MW14-04S were not met due to insufficient volumes. Groundwater turbidity in all samples collected within the ETA area was less than 50 NTU.

3.2.5 Intermediate Dam

Groundwater wells located within the intermediate dam area were sampled on September 9, 2014. Samples were obtained from six (6) wells within this area identified for the sampling event.

Concentrations of dissolved aluminum, cadmium, iron, nickel, silver, and zinc in groundwater exceeded the CCME FAL guidelines in samples collected within the intermediate dam area. Concentrations of total aluminum, cadmium, copper, iron, nickel, silver, and zinc in groundwater also exceeded the CCME FAL guidelines.

Hemmera/ELR staff noted that well P01-04B had no PVC cap or J-plug covering the well, which can allow for potential contamination. No additional concerns were identified in the field that may affect data quality. Groundwater turbidity in all samples collected within the intermediate dam area was less than 50 NTU.

3.2.6 Intermediate Dump

The one (1) groundwater well located within the intermediate dump area included in the fall sampling event (well P96-6) was sampled on September 12, 2014.

Concentrations of dissolved selenium, uranium, and zinc in groundwater exceeded the CCME FAL guidelines in samples from this well. Concentrations of total aluminum, selenium, uranium, and zinc in groundwater also exceeded the CCME FAL standards.

No additional concerns were identified in the field that may affect data quality. The groundwater turbidity of samples collected from station P96-6 was less than 50 NTU.

3.2.7 Main Dump

One (1) groundwater well located within the main dump area was included in the fall sampling event (SRK08-P9), which was sampled on September 11, 2014.

Concentrations of dissolved iron in groundwater exceeded the CCME FAL guidelines in samples from this well. Concentrations of total aluminum, copper, and iron in groundwater also exceeded the CCME FAL standards.

No additional concerns were identified in the field that may affect data quality. Groundwater turbidity in all samples collected within the intermediate dam area was less than 50 NTU.

3.2.8 Mill Area

Groundwater wells located in the mill area were sampled on September 10, 2014. Samples were obtained from three (3) wells in this area identified for the sampling event.

Concentrations of dissolved aluminum, cadmium, uranium, and zinc in groundwater exceeded the CCME FAL guidelines in samples collected within the mill area. Concentrations of total aluminum, cadmium, chromium, copper, iron, lead, uranium, and zinc in groundwater also exceeded the CCME FAL guidelines.

No additional concerns were identified in the field that may affect data quality. Groundwater turbidity in all samples collected within the intermediate dam area was less than 50 NTU.

3.2.9 NFRC Rock Drain Pond

Groundwater wells located in the NFRC Rock Drain Pond Area were sampled between September 13 and 16, 2014. Samples were obtained from six (6) wells in this area identified for the sampling event.

Groundwater pH in the NFRC Rock Drain Pond Area was not in compliance with CCME FAL guidelines in one (1) of the six (6) samples (6.48, based on laboratory pH values). Concentrations of dissolved aluminum, cadmium, selenium, and zinc in groundwater exceeded the CCME FAL guidelines in samples collected within the NFRC Rock Drain Pond Area. Concentrations of total aluminum, cadmium, chromium, copper, iron, selenium, and zinc in groundwater also exceeded the CCME FAL guidelines.

Samples collected from well MW14-15 were very turbid (71 NTU) due to low purge volumes and rate of recharge. No additional concerns were identified in the field that may affect data quality.

3.2.10 Northeast Dumps

Groundwater wells located in the northeast dumps area were sampled on September 12, 2014. Samples were obtained from three (3) wells in this area identified for the sampling event.

Concentrations of dissolved cadmium, copper, lead, nickel, selenium, uranium, and zinc in groundwater exceeded the CCME FAL guidelines in samples collected within the northeast dumps area. Concentrations of total aluminum, cadmium, copper, iron, lead, mercury, nickel, selenium, silver, uranium, and zinc in groundwater also exceeded the CCME FAL guidelines.

No additional concerns were identified in the field that may affect data quality. Groundwater turbidity of all samples within the northeast dumps area was less than 50 NTU.

3.2.11 Second Impoundment

Groundwater wells located in the Second Impoundment Area were sampled between September 15 and 16, 2014. Samples were obtained from nine (9) of the ten (10) wells in this area identified for the sampling event. Well P03-06-07 was dry during the time of sampling.

Groundwater pH in the Second Impoundment Area was not in compliance with CCME FAL guidelines in seven (7) of the ten (9) samples (ranging from 3.16 to 5.14, based on laboratory pH values). Concentrations of dissolved aluminum, arsenic, cadmium, copper, iron, lead, nickel, uranium, and zinc in groundwater exceeded the CCME FAL guidelines in samples collected from the Second Impoundment Area. Concentrations of total aluminum, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, silver, thallium, uranium, and zinc in groundwater also exceeded the CCME FAL guidelines.

Hemmera/ELR staff could not record drawdown at stations P03-03-2, P03-03-4, P03-03-9, P03-06-1, P03-06-2, and P03-06-6 due well diameter. Field parameters could not be measured at P03-06-6 due to low purge volumes.

Samples collected from wells P03-03-9, P03-06-2, and P03-06-6 were extremely turbid (613 AU, 939 AU, and “out-of-range”; >4000 NTU), likely due to the placement of the wells in the tailings. Groundwater turbidity of all other collected samples within the Second Impoundment Area was less than 50 NTU.

3.2.12 S-Wells Area

Groundwater wells located in the S-Wells area were sampled between September 9 and 11, 2014. Samples were obtained from twenty four (24) of the twenty six (26) wells in this area identified for the sampling event. Well SRK05-SP-6 was found dry and well SRK08-SBR1 was found broken during the time of sampling.

Groundwater pH in the S-Wells area was not in compliance with CCME FAL guidelines in three (3) of the twenty four (24) samples (ranging from 6.02 to 6.48, based on laboratory pH values). Concentrations of dissolved aluminum, arsenic, cadmium, chromium, copper, iron, lead, nickel, uranium, and zinc in groundwater exceeded the CCME FAL guidelines in samples collected from the S-Wells area. Concentrations of total aluminum, arsenic, cadmium, copper, iron, lead, mercury, nickel, silver, uranium, and zinc in groundwater also exceeded the CCME FAL guidelines.

Hemmera/ELR noted that wells SRK05-SP-4B, SRK08-SBR1, and SRK08-SBR2 were either damaged or broken. Drawdown/recharge could not be measured at well SRK05-SP-4B due to a broken well casing (damage restricted access to the top of well casing during the purging process), SRK08-SBR1 had broken PVC at the surface and was plugged with bentonite, and the PVC at site SRK08-SBR2 was reported damaged. The casing of well SRK05-SP-5 was repaired by Hemmera/ELR in the field, and this well was redeveloped before the purging and sampling process.

Hemmera/ELR noted that SRK08-SBR4, SRK08-SP-7A, and SRK08-SP-7B had no PVC caps or J-plugs covering the wells, which can allow for potential contamination. Samples collected from station S1A were turbid (61.4 NTU) due to low purge volumes and rate of recharge. No additional concerns were identified in the field that may affect data quality.

3.2.13 NFRC near S-Wells Area

Groundwater wells located at the NFRC near the S-Wells area were sampled between September 10 and 11, 2014. Samples were obtained from five (5) of the wells in this area identified for the sampling event.

Concentrations of dissolved aluminum, arsenic, iron, selenium, uranium, and zinc in groundwater exceeded the CCME FAL guidelines in samples collected from the S-Wells area near NFRC. Concentrations of total aluminum, arsenic, chromium, copper, iron, lead, selenium, silver, uranium, and zinc in groundwater also exceeded the CCME FAL guidelines.

No additional concerns were identified in the field that may affect data quality. Groundwater turbidity of all samples within the northeast dumps area was less than 50 NTU.

3.2.14 Upstream of Tailings

Groundwater wells located Upstream of the Tailing were sampled on September 16, 2014. Samples were obtained from both of the two (2) wells in this area identified for the sampling event.

Concentrations of dissolved arsenic and iron in groundwater exceeded the CCME FAL guidelines in samples collected from Upstream of the Tailings. Concentrations of total aluminum, arsenic, chromium, copper, iron, molybdenum, and silver in groundwater also exceeded the CCME FAL guidelines.

No additional concerns were identified in the field that may affect data quality. Groundwater turbidity of all samples within the northeast dumps area was less than 50 NTU.

3.2.15 Groundwater Vangorda/Grum

Groundwater wells located in the Vangorda/Grum area were sampled between September 11 and September 15, and on October 15, 2014. Samples were obtained from thirty (30) of the thirty one (31) wells in this area identified for the sampling event. Well SRK08-P14 was found to have insufficient volume (38 mL of groundwater) at the time of sampling.

Groundwater pH in the Vangorda/Grum area was not in compliance with CCME FAL guidelines in two (2) of the thirty (30) samples (5.13 and 6.31, based on laboratory pH values). Concentrations of dissolved aluminum, arsenic, cadmium, copper, iron, lead, nickel, selenium, thallium, uranium, and zinc in groundwater exceeded the CCME FAL guidelines in samples collected from the Vangorda/Grum area. Concentrations of total aluminum, arsenic, cadmium, chromium, copper, iron, lead, mercury, nickel, selenium, silver, thallium, uranium, and zinc in groundwater also exceeded the CCME FAL guidelines.

Hemmera/ELR staff noted that wells BH05-9B-R, P09-VC1, SRK05-08, SRK08-P15, V34, V35, V36 and V37 had no PVC caps or J-plugs covering the wells, which can allow for potential contamination. The PVC of P09-GS1A was also noted to be above the metal protective casing which did not allow for a proper seal.

No additional concerns were identified in the field that may affect data quality. Groundwater turbidity of all samples within the northeast dumps area was less than 50 NTU.

3.3 QUALITY ASSURANCE AND QUALITY CONTROL RESULTS

Twelve (12) duplicate groundwater samples were collected during the fall sampling event. Two (2) travel blanks were provided by the laboratory and accompanied the samples through the sampling program. Two (2) field blanks were prepared during the sampling program on September 9 and September 11, 2014. The detailed results of the QA/QC sampling program are provided in Table 3-3, including RPD values for all duplicate and sample pairs collected.

3.3.1 Field and Travel Blanks

Field blank and travel blank analytical results were reported less than detection limits for all analysed parameters, indicating that there was no evidence of contamination during the sampling, transportation, or laboratory analysis process.

3.3.2 Field Duplicates

3.3.2.1 P01-01B / DUP1

The RPD value for dissolved arsenic (21.6%), and total and dissolved lithium (21.6% and 21.1%, respectively) between P01-01B and DUP1 slightly exceeded the desired limit. The RPD values for other parameters within this duplicate/sample pair were less than 20%, therefore, RPD exceedances were not considered representative of a systemic bias.

3.3.2.2 SRK08-SP-7B / DUP2

The RPD values for all corresponding pairs of results between Site SRK08-SP-7B and DUP2 were less than the 20% QA/QC threshold, indicating that sampling error or laboratory error did not occur.

3.3.2.3 P01-11 / DUP3

The RDP value for dissolved potassium (25.2%) between P01-11 and DUP3 slightly exceeded the desired limit. The RPDs for other parameters within this duplicate/sample pair were less than 20%. Slight groundwater sample variation is considered to be the likely cause of the single variable result for potassium, and therefor is not considered representative of a systematic bias.

3.3.2.4 P96-7 / DUP4

The RDP value for dissolved potassium (26.1%) between P96-7 and DUP4 slightly exceeded the desired limit. The RPDs for other parameters within this duplicate/sample pair were less than 20%. Slight groundwater sample variation is considered to be the likely cause of the single variable result for potassium and therefor is not considered representative of a systematic bias.

3.3.2.5 V34 / DUP5

The RPD value for dissolved zinc (34.1%) between V34 and DUP5 exceeded the desired limit, suggesting a potential error affecting data precision. Although greater than five times the detection limit, both dissolved zinc values were relatively low (0.0051 and 0.0072 mg/L), suggesting that a subtle groundwater sample variation could be the cause of the single variable result for zinc.

3.3.2.6 SRK05-SP-1B / DUP6

The RPD value for total suspended solids between SRK05-SP-1B and DUP6 and slightly exceeded the desired limit (23.2%). As the sediment retrieved from groundwater wells during sampling can be variable, this level of variation between a sample pair is not considered to indicate a sampling or laboratory error. Additionally, as the variation between all dissolved and total metals were within an acceptable range, this variation is not considered to have affected sample integrity.

3.3.2.7 SRK05-ETA-BR2 / DUP7

The RPD value for total suspended solids (31.4%), dissolved cadmium (79.7%), dissolved phosphorus (20.7%), and total cadmium (76.7%) between SRK05-ETA-BR2 and DUP7 all exceeded the desired limit. Differences in TSS concentrations between the sample and duplicate pair (56 mg/l and 40.8 mg/l) show variation between total particulates within these samples, and suggest that there was some variation in the groundwater between samples, although field data suggests that purging was completed according to program specifications. The observed variation in TSS may provide some explanation for variation between dissolved and total metals results. Increase dissolved metals concentration would not necessarily be an expected result of increased turbidity.

3.3.2.8 BH6 / DUP8

The RPD values for all corresponding pairs of results between Site BH6 and DUP8 were less than the 20% QA/QC threshold, indicating that sampling error or laboratory error did not occur

3.3.2.9 SRK08-P14 / DUP9

The RPD value for total copper between SRK08-P14 and DUP9 exceeded the desired limit (30.5%). Slight groundwater sample variation is considered to be the likely cause of the single variable result for total copper.

3.3.2.10 MW14-13 / DUP10

The RPD values for all corresponding pairs of results between Site MW14-13 and DUP10 were less than the 20% QA/QC threshold, indicating that sampling error or laboratory error did not occur.

3.3.2.11 MW14-05 / DUP11

The RPD values for all corresponding pairs of results between Site MW14-05 and DUP11 were less than the 20% QA/QC threshold, indicating that sampling error or laboratory error did not occur.

3.3.2.12 MW13-03 / DUP12

The RPD value for laboratory conductivity between MW14-03 and DUP12 show an exceeded the desired limit (85.0%). The cause of such a variation in a laboratory general parameter is not known, but may represent an error in laboratory practices or equipment, as all other parameters tested fell within the 20% RPD limit.

4.0 RECOMMENDATIONS

Hemmera/ELR prepared the following recommendations based on the observations and results of the fall 2014 groundwater sampling program.

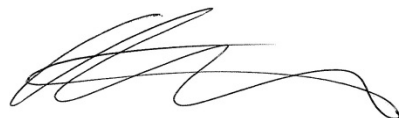
1. Groundwater wells should be properly sealed with PVC caps or J-plugs. Wells without caps have risk of becoming contaminated from external sources which may affect data precision or quality. Wells without caps include; P03-09-9, P03-09-6, P05-01-05, P05-01-03, P09-C2, P01-01A, P01-01B, SRK05-ETA-BR1, P01-04B, SRK08-SBR4, SRK08-SP-7A, SRK08-SP-7B, BH05-9B-R, P09-VC1, SRK05-08, SRK08-P15, V34, V35, V36 and V37.
2. Damaged or degraded wells should be repaired. This includes wells where the stick-up height is above the height of the well casing. Wells of this type which are unable to close properly are at risk of external source contamination. Damaged or degraded wells include the following; SRK05-ETA-BR2, P09-C2, SRK05-SP-4B, SRK08-SBR1, SRK08-SBR2, SRK05-SP-4B, and P09-GS1A.
3. Low-flow sampling techniques were used to collect samples at wells that had likely been sampled previously by another method (as noted in section 2.2, pre-existing tubing found within wells indicated a prior sampling method by Waterra inertial footvalve). To avoid creation of turbulent conditions, inclusion of particles not normally mobile in groundwater, and a positive bias to unfiltered results, it is recommended that low-flow sampling be used for wells where a significant drawdown would occur by the use of other methods.
4. To avoid inclusion of acid or alkaline-generating solids that are not representative of an equilibrium condition with groundwater, it is recommended that samples for analysis of acidity, alkalinity, and hardness be field-filtered.
5. To avoid degassing of carbon dioxide, precipitation of calcium carbonate in sample bottles, and exclusion of the representative precipitate component from analysis, it is recommended that samples for analysis of alkalinity be collected in a separate bottle with zero headspace and that the laboratory be instructed to analyze the contents of the entire bottle.
6. In order to examine chromium exceedances of CCME-FAL guidelines it is recommended to analyse for trivalent and hexavalent forms of chromium. CCME does not provide groundwater quality guidelines for total chromium but does offer a guideline for Cr(VI), 0.001 mg/l, and an interim guideline for Cr(III), 0.0089 mg/l.

5.0 CLOSURE

We have appreciated the opportunity of working with you on this project and trust that this report is satisfactory to your requirements. Please feel free to contact the undersigned regarding any questions or further information that you may require.

Report prepared by:

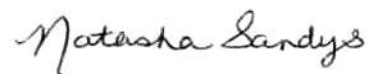
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7.0 STATEMENT OF LIMITATIONS

This report was prepared by Hemmera Envirochem Inc. ("Hemmera"), based on fieldwork conducted by Hemmera, for the sole benefit and exclusive use of Government of Yukon. The material in it reflects Hemmera's best judgment in light of the information available to it at the time of preparing this Report. Any use that a third party makes of this Report, or any reliance on or decision made based on it, is the responsibility of such third parties. Hemmera accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this Report.

Hemmera has performed the work as described above and made the findings and conclusions set out in this Report in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession practicing under similar conditions at the time the work was performed.

This Report represents a reasonable review of the information available to Hemmera within the established Scope, work schedule and budgetary constraints. It is possible that the levels of contamination or hazardous materials may vary across the Site, and hence currently unrecognised contamination or potentially hazardous materials may exist at the Site. No warranty, expressed or implied, is given concerning the presence or level of contamination on the Site, except as specifically noted in this Report. The conclusions and recommendations contained in this Report are based upon applicable legislation existing at the time the Report was drafted. Any changes in the legislation may alter the conclusions and/or recommendations contained in the Report. Regulatory implications discussed in this Report were based on the applicable legislation existing at the time this Report was written.

In preparing this Report, Hemmera has relied in good faith on information provided by others as noted in this Report, and has assumed that the information provided by those individuals is both factual and accurate. Hemmera accepts no responsibility for any deficiency, misstatement or inaccuracy in this Report resulting from the information provided by those individuals.

The liability of Hemmera to Government of Yukon shall be limited to injury or loss caused by the negligent acts of Hemmera. The total aggregate liability of Hemmera related to this agreement shall not exceed the lesser of the actual damages incurred, or the total fee of Hemmera for services rendered on this project.

TABLES

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	Cross Valley Dam							Downgradient of CVD		ETA Area						
		Location ID:	P01-11	P03-09-6	P03-09-9	P05-01-03	P05-01-05	P09-C2	P09-C3	P01-01A	P01-01B	P09-ETA-1	P09-ETA-2	P96-8A	P96-8B	SRK04-3A	SRK05-ETA-BR1	SRK05-ETA-BR2
		Date Sampled:	10/09/2014	10/09/2014	10/09/2014	10/09/2014	10/09/2014	10/09/2014	10/09/2014	09/09/2014	09/09/2014	13/09/2014	13/09/2014	11/09/2014	11/09/2014	13/09/2014	13/09/2014	13/09/2014
Parameter	Units	CCME FAL ^{3,4}																
Lab's Sample ID		-	L1516957-42	L1516957-41	L1516957-40	L1516957-38	L1516957-39	L1516957-44	L1516957-45	L1516957-18	L1516957-19	L1518297-52	L1518297-53	L1518297-11	L1518297-10	L1518297-54	L1518297-57	L1518297-55
Physical Tests																		
Conductivity	uS/cm	-	3350	1830	1990	3360	3050	2550	1360	1790	1420	412	6360	9270	9430	9500	9210	2520
Hardness, Total (CaCO3)	mg/L	-	2110	1190	1310	2330	2190	986	734	1190	902	201	4510	6590	7100	6550	5540	1680
pH	pH Units	6.5-9 ⁵	6.71	7.76	7.68	7.3	7.03	7	7.42	7.71	7.82	8.25	6.05	3.61	5.44	5.65	5.55	7.28
Total Suspended Solids	mg/L	See guideline ⁶	77.3	32.4	271	57.6	12.8	53.4	6	<1.000	2.4	59.3	105	7.8	12.8	32.4	64.7	56
Anions and Nutrients																		
Acidity (as CaCO3)	mg/L	-	137000	24100	30500	70100	115000	211000	52800	24400	13600	1300	1510000	2890000	2330000	4080000	4250000	46200
Alkalinity, Total	mg/L	-	445	356	350	425	394	1740	706	349	318	196	121	<2.000	36.9	37.2	29.5	124
Anion Sum	mEq/L	-	54.7	25.9	28.6	55.4	49.2	35.5	19.4	25.4	19.3	4.56	126	198	201	220	226	41.7
Cation - Anion Balance	%	-	-4.8	-0.3	-0.8	-3	-0.5	-2.6	-5.1	-0.7	-0.4	2.2	-0.1	-1.9	0	-1	-2.6	-5.5
Cation Sum	mEq/L	-	49.7	25.7	28.2	52.2	48.7	33.7	17.5	25.1	19.1	4.76	125	191	201	216	214	37.3
Chloride	mg/L	-	<10.000	<5.000	<5.000	<10.000	<10.000	26	5.3	<5.000	<5.000	<0.500	17	<25.000	31	43	36	10
Sulfate (SO4)	mg/L	-	2200	903	1040	2250	1980	<10.000	245	886	620	30.9	5900	9530	9560	10500	10800	1870
Dissolved Metals																		
Aluminum	mg/L	0.005-0.1 ⁷	<0.005	0.0035	<0.002	0.0312	<0.005	0.0132	0.0014	<0.002	0.0012	0.0012	0.093	20.3	2.88	4.4	2.13	<0.002
Antimony	mg/L	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Arsenic	mg/L	0.005	0.0459	<0.0002	<0.0002	<0.0005	0.00562	<0.0002	0.001	0.00023	0.00246	<0.0001	0.178	<0.02	<0.02	0.199	0.013	0.00022
Barium	mg/L	-	0.0282	0.035	0.0278	0.0259	0.019	0.708	0.1	0.0496	0.0556	0.00999	0.0092	0.01	0.014	0.0124	0.012	0.0353
Beryllium	mg/L	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	0.00262	0.00017	<0.0002	<0.0001	<0.0001	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Bismuth	mg/L	-	<0.0025	<0.001	<0.001	<0.0025	<0.0025	<0.001	<0.0005	<0.001	<0.0005	<0.0005	<0.025	<0.1	<0.1	<0.05	<0.05	<0.001
Boron	mg/L	1.5	<0.05	<0.02	<0.02	<0.05	<0.05	0.092	0.017	<0.02	0.012	0.012	<0.5	<2	<2	<1	<1	<0.02
Cadmium	mg/L	0.00004-0.00037 ⁸	<0.000050	0.000047	0.000467	<0.000050	0.000401	<0.00002	<0.00001	0.000905	<0.00001	<0.00001	<0.0005	0.358	0.263	0.0715	0.0816	0.000249
Calcium	mg/L	-	623	353	393	684	633	216	180	350	270	63.1	494	410	433	394	405	499
Chromium	mg/L	0.001	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Cobalt	mg/L	-	0.0138	0.00184	0.00507	<0.0005	0.0216	<0.0002	<0.0001	0.0023	0.00017	<0.0001	0.671	2.18	1.99	2.21	2.44	0.0424
Copper	mg/L	0.002-0.004 ⁹	<0.001	<0.0004	<0.0004	<0.001	<0.001	<0.0004	<0.0002	0.00041	<0.0002	<0.0002	<0.01	0.255	<0.04	<0.02	<0.02	<0.0004
Iron	mg/L	0.3	70.2	0.128	0.096	32.8	31.1	3.25	2.71	<0.01	0.702	0.152	413	300	400	1010	1250	33.5
Lead	mg/L	0.001-0.007 ¹⁰	<0.00025	<0.0001	<0.0001	<0.00025	<0.00025	<0.0001	<0.00005	<0.0001	<0.00005	0.000079	<0.0025	0.19	0.095	0.0112	0.0797	0.00014
Lithium	mg/L	-	0.0223	0.0195	0.0146	0.0319	0.0294	0.856	0.0941	0.0149	0.0126	<0.0005	0.118	0.31	0.27	0.142	0.1	0.0144
Magnesium	mg/L	-	135	75.8	78.7	152	147	108	69.3	77.8	55.4	10.5	796	1350	1460	1350	1100	105
Manganese	mg/L	-	45.3	12.9	17.4	48.1	43.8	0.12	0.37	8.3	0.139	0.00694	70.8	146	143	141	153	4.61
Mercury	mg/L	0.000026	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	0.073	0.00085	0.0011	0.00096	0.00062	0.00079	<0.0001	0.000161	0.0008	0.000803	0.000077	<0.0025	<0.01	<0.01	<0.005	<0.005	0.00011
Nickel	mg/L	0.025-0.150 ¹¹	0.0293	0.0199	0.0292	<0.0025	0.0199	<0.001	<0.0005	0.0112	0.00061	<0.0005	0.651	2.54	2.21	1.72	1.99	0.035
Phosphorus	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100	<0.250	<0.250	<0.250	<0.250	0.173
Potassium	mg/L	-	6.9	4.94	5.26	7.67	8.04	11.6	3.79	6.73	4.61	0.28	8.84	17.9	20.2	16.6	13.4	3.86
Selenium	mg/L	0.001	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Silicon	mg/L	-	11.1	8.12	8.53	11.4	11	10.2	8.58	7.37	5.88	8.96	12.9	34.5	17.5	19.2	17.6	8.63
Silver	mg/L	0.0001	<0.00005	<0.00002	<0.00002	<0.00005	<0.00005	0.000295	0.000048	<0.00002	<0.00001	<0.00001	<0.0005	<0.002	<0.002	<0.001	<0.001	<0.00002
Sodium	mg/L	-	42.5	30.2	30.3	41.7	35.6	311	58.9	16.9	21.5	16.8	47.5	64	61	56.3	57.7	28.9
Strontium	mg/L	-	1.59	0.852	0.898	1.64	1.76	4.55	2.25	1.04	0.868	0.497	3.76	3.54	3.74	3.68	4.32	7.09
Sulfur	mg/L	-	618	289	322	639	613	3.25	78.7	286	199	10.7	1830	3070	3150	3180	3040	565
Thallium	mg/L	0.0008	<0.00005	<0.00002	<0.00002	<0.00005	<0.00005	<0.00002	<0.00001	<0.00002	<0.00001	<0.00001	<0.0005	<0.002	<0.002	<0.001	<0.001	<0.00002
Tin	mg/L	-	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Titanium	mg/L	-	<0.05	<0.02	<0.02	<0.05	<0.05	<0.02	<0.01	<0.02	<0.01	<0.01	<0.5	<2	<2	<1	<1	<0.02
Uranium	mg/L	0.015	0.0115	0.00912	0.0101	0.00101	0.00553	0.000428	0.000864	0.00862	0.00913	0.000069	0.0049	0.0217	<0.002	0.009	0.0067	0.000589
Vanadium	mg/L	-	<0.005	<0.002	<0.002	<0.005	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.05	<0.2	<0.2	<0.1	<0.1	<0.002
Zinc	mg/L	0.03	0.0065	<0.002	0.0033	<0.005	0.0052	<0.002	<0.001	0.0034	0.0011	0.0034	271	1050	936	726	911	14.4
Zirconium	mg/L	-	<0.004	<0.0016	<0.0016	<0.004	<0.004	0.185	0.0329	<0.0016	0.00099	<0.0008	<0.04	<0.16	<0.16	<0.08	<0.08	<0.0016

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	Cross Valley Dam							Downgradient of CVD		ETA Area						
		Location ID:	P01-11	P03-09-6	P03-09-9	P05-01-03	P05-01-05	P09-C2	P09-C3	P01-01A	P01-01B	P09-ETA-1	P09-ETA-2	P96-8A	P96-8B	SRK04-3A	SRK05-ETA-BR1	SRK05-ETA-BR2
		Date Sampled:	10/09/2014	10/09/2014	10/09/2014	10/09/2014	10/09/2014	10/09/2014	10/09/2014	09/09/2014	09/09/2014	13/09/2014	13/09/2014	11/09/2014	11/09/2014	13/09/2014	13/09/2014	13/09/2014
Parameter	Units	CCME FAL ^{3,4}																
Total Metals																		
Aluminum	mg/L	0.005-0.1 ⁷	0.659	0.628	4.69	0.693	0.022	0.86	0.0512	0.0082	<0.003	1.19	<0.15	22.9	3.11	4.57	1.9	0.332
Antimony	mg/L	-	<0.0005	0.00024	0.00069	<0.0005	<0.0005	<0.0002	<0.0001	<0.0002	<0.0001	0.00023	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Arsenic	mg/L	0.005	0.0456	0.00087	0.00197	0.00063	0.00658	0.00104	0.00108	0.00034	0.0025	0.00077	0.195	<0.02	<0.02	0.216	0.012	0.00031
Barium	mg/L	-	0.0392	0.0461	0.118	0.0345	0.0209	0.669	0.102	0.05	0.0548	0.0162	0.019	0.013	0.016	0.0133	0.0099	0.039
Beryllium	mg/L	-	<0.0005	<0.0002	0.00021	<0.0005	<0.0005	0.00247	0.00017	<0.0002	<0.0001	<0.0001	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Bismuth	mg/L	-	<0.0025	<0.001	<0.001	<0.0025	<0.0025	<0.001	<0.0005	<0.001	<0.0005	<0.0005	<0.025	<0.1	<0.1	<0.05	<0.05	<0.001
Boron	mg/L	1.5	<0.05	<0.02	<0.02	<0.05	<0.05	0.089	0.025	<0.02	0.016	0.015	<0.5	<2	<2	<1	<1	<0.02
Cadmium	mg/L	0.00004-0.00037 ⁸	<0.000050	0.011	0.0289	<0.000050	0.00077	<0.00002	<0.00001	0.000982	0.000033	0.000013	<0.0005	0.398	0.297	0.0716	0.0731	0.000561
Calcium	mg/L	-	637	315	364	697	624	204	170	338	265	59.4	527	423	436	403	426	503
Chromium	mg/L	0.001	0.0021	0.00216	0.011	0.00242	<0.0005	0.00177	0.00029	<0.0002	0.00012	0.00039	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Cobalt	mg/L	-	0.0138	0.00231	0.00922	0.00083	0.0233	0.00034	0.00012	0.00227	0.00019	0.00011	0.707	2.45	2.21	2.27	2.19	0.0445
Copper	mg/L	0.002-0.004 ⁹	<0.0025	0.0081	0.0313	0.0036	0.0027	<0.001	<0.0005	<0.001	<0.0005	0.00229	<0.025	0.28	<0.1	<0.05	<0.05	<0.001
Iron	mg/L	0.3	75.5	1.38	6.72	34.9	30.5	3.98	2.59	0.016	0.715	0.862	438	307	401	1030	1310	34.2
Lead	mg/L	0.001-0.007 ¹⁰	0.00388	0.00165	0.0101	0.00216	0.00036	0.00079	0.000127	<0.0001	<0.00005	0.0485	0.0079	0.209	0.106	0.0133	0.0832	0.00399
Lithium	mg/L	-	0.0218	0.019	0.0211	0.0323	0.031	0.788	0.0969	0.0148	0.0128	<0.0005	0.127	0.33	0.3	0.141	0.099	0.0151
Magnesium	mg/L	-	140	69.4	77.8	151	138	105	66.6	77	55.1	10.1	841	1370	1470	1380	1140	108
Manganese	mg/L	-	43.9	12.1	16.8	46.8	46.8	0.122	0.379	8.28	0.142	0.00848	74.6	160	156	144	140	4.77
Mercury	mg/L	0.000026	<0.00001	<0.00001	0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000046	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	0.073	0.00095	0.0013	0.00139	0.00095	0.00083	0.00018	0.000206	0.00076	0.00089	0.000165	<0.0025	<0.01	<0.01	<0.005	<0.005	0.00014
Nickel	mg/L	0.025-0.150 ¹¹	0.03	0.0216	0.0421	<0.0025	0.0213	0.0013	0.00066	0.011	0.00059	<0.0005	0.682	2.79	2.44	1.79	1.78	0.0374
Phosphorus	mg/L	-	<0.050	<0.050	0.303	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.100	<0.250	<0.250	<0.250	<0.250	0.224
Potassium	mg/L	-	7.63	4.6	5.84	8.17	7.97	11.4	3.66	6.65	4.57	0.32	9.52	18.5	20.1	16.9	14.2	3.76
Selenium	mg/L	0.001	<0.0005	<0.0002	0.00035	<0.0005	<0.0005	<0.0002	<0.0001	<0.0002	<0.0001	<0.0001	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Sodium	mg/L		39.3	28.4	29.6	39.7	38.2	301	62.2	16.4	21.7	17.2	49.9	71	68	59.7	51.1	29.6
Silicon	mg/L	-	12.7	8.47	16.6	13	11	11.2	8.28	7.4	5.96	12.1	13.7	35.6	17.6	19.8	18.3	9.45
Silver	mg/L	0.0001	<0.00005	0.000042	0.000136	<0.00005	<0.00005	0.000393	0.000088	<0.00002	<0.00001	0.000126	<0.0005	<0.002	<0.002	<0.001	<0.001	0.00002
Strontium	mg/L	-	1.56	0.809	0.843	1.64	1.83	4.33	2.32	1.04	0.926	0.497	4.03	3.92	4.21	3.7	4.3	7.2
Sulfur	mg/L	-	630	267	313	642	596	3.38	75.1	284	200	10.6	1940	3120	3190	3270	3150	584
Thallium	mg/L	0.0008	<0.00005	0.000064	0.000088	<0.00005	<0.00005	<0.00002	<0.00001	<0.00002	<0.00001	0.000034	<0.0005	<0.002	<0.002	<0.001	<0.001	<0.00002
Tin	mg/L	-	<0.0005	<0.0002	0.00035	<0.0005	<0.0005	<0.0002	0.00011	<0.0002	<0.0001	0.00073	<0.005	<0.02	<0.02	<0.01	<0.01	<0.0002
Titanium	mg/L	-	<0.05	<0.02	0.2	<0.05	<0.05	<0.02	<0.01	<0.02	<0.01	0.012	<0.5	<2	<2	<1	<1	<0.02
Uranium	mg/L	0.015	0.0107	0.00875	0.00994	0.00108	0.00581	0.000604	0.000952	0.00855	0.0103	0.000549	0.00522	0.0236	0.0024	0.0088	0.0067	0.000676
Vanadium	mg/L	-	<0.005	<0.002	0.0136	<0.005	<0.005	<0.002	<0.001	<0.002	<0.001	<0.001	<0.05	<0.2	<0.2	<0.1	<0.1	<0.002
Zinc	mg/L	0.03	<0.015	0.0197	0.0718	<0.015	<0.015	<0.006	0.0033	<0.006	<0.003	0.0156	286	1160	1030	726	813	14.8
Zirconium	mg/L	-	<0.004	<0.0016	<0.0016	<0.004	<0.004	0.0826	0.0355	<0.0016	0.0011	0.0013	<0.04	<0.16	<0.16	<0.08	<0.08	<0.0016

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	Haul Road/Near NFRC									Intermediate Dam						Intermediate Dump	Main Dump	Mill Area		
			Location ID:	MW14-02D	MW14-02S	MW14-03	MW14-04D	MW14-04S	MW14-05	PW14-01	PW14-06	PW14-07	P01-03	P01-04A	P01-04B	X24-96D	X25-96A	X25-96B	P96-6	SRK08-P9	SRK08-10A	SRK08-11A
		Date Sampled:	15/09/2014	15/09/2014	14/09/2014	15/09/2014	17/09/2014	15/09/2014	14/09/2014	14/09/2014	14/09/2014	09/09/2014	09/09/2014	09/09/2014	09/09/2014	09/09/2014	09/09/2014	12/09/2014	11/09/2014	10/09/2014	10/09/2014	10/09/2014
Parameter	Units	CCME FAL ^{3,4}																				
Lab's Sample ID		-	L1518297-9	L1518297-8	L1518297-64	L1519343-6	L1519343-10	L1519343-7	L1518297-61	L1518297-63	L1518297-62	L1516957-16	L1516957-12	L1516957-13	L1516957-17	L1516957-15	L1516957-14	L1518297-34	L1518297-12	L1516957-37	L1516957-35	L1516957-36
Physical Tests																						
Conductivity	uS/cm	-	495	164	791	2810	4270	3660	504	19700	781	3640	1120	2500	3210	1690	1650	2160	2290	3710	1240	1810
Hardness, Total (CaCO3)	mg/L	-	232	84.4	462	2050	3110	2830	261	17900	406	2350	555	1710	2280	1070	987	1470	1590	2300	768	1230
pH	pH Units	6.5-9 ⁵	6.45	7.85	7.78	7.37	7.43	7.18	6.69	4.47	6.41	6.53	7.49	7.54	6.79	7.65	7.98	7.23	7.74	7.15	7.77	7.47
Total Suspended Solids	mg/L	See guideline ⁶	4.6	31	48.8	29.2	22.8	27.6	17.6	14.6	4.4	99.2	1.2	19	212	8.2	7	1.8	55.2	295	3	3
Anions and Nutrients																						
Acidity (as CaCO3)	mg/L	-	153000	3600	16600	59300	92900	63800	56300	4890000	139000	402000	48300	37500	116000	24300	8600	50300	16200	116000	11100	23800
Alkalinity, Total	mg/L	-	195	70.5	403	752	998	551	217	<2.000	222	230	756	379	384	299	293	289	232	944	179	160
Anion Sum	mEq/L	-	5.46	1.64	9.61	45	76.8	61.4	5.76	528	9.1	62.3	15.9	38.7	53.2	22.6	22.4	32.1	33.1	62.3	16.2	25.6
Cation - Anion Balance	%	-	4.2	4.4	3.1	-3.4	-9.8	-3	5.1	0.2	4.4	1.1	-6.2	-1.7	-1.8	1.8	-0.6	-3.7	-0.5	-8	-1.3	-0.5
Cation Sum	mEq/L	-	5.94	1.79	10.2	42	63.1	57.8	6.37	530	9.94	63.7	14	37.4	51.3	23.4	22.1	29.8	32.8	53.1	15.8	25.3
Chloride	mg/L	-	<0.500	<0.500	5.33	<10.000	14	18	<0.500	30	0.65	<10.000	7.8	<10.000	<10.000	<5.000	<5.000	<10.000	<10.000	164	<5.000	<5.000
Sulfate (SO4)	mg/L	-	74.7	11.2	67.1	1440	2710	2390	68.1	25300	223	2770	27.3	1490	2190	798	794	1260	1370	1860	606	1080
Dissolved Metals																						
Aluminum	mg/L	0.005-0.1 ⁷	0.0473	0.0061	0.0027	0.0037	0.0045	0.0129	0.0283	86.3	0.0871	<0.01	0.002	<0.002	0.012	0.002	<0.002	<0.002	<0.002	0.0068	0.0014	<0.002
Antimony	mg/L	-	<0.0001	<0.0001	0.00023	<0.0002	<0.0002	<0.0002	<0.0001	<0.05	<0.0001	<0.001	<0.0001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0001	<0.0002
Arsenic	mg/L	0.005	0.00217	0.00043	0.0088	0.00077	0.00029	0.00133	0.00059	<0.05	0.00273	<0.001	<0.0001	0.00197	<0.001	0.00029	0.0012	<0.0002	0.00042	<0.0005	0.00012	<0.0002
Barium	mg/L	-	0.0326	0.0437	0.142	0.0312	0.0315	0.0587	0.07	0.03	0.0607	0.0133	0.435	0.0183	0.0238	0.0649	0.0273	0.0205	0.0277	0.0207	0.127	0.0654
Beryllium	mg/L	-	0.00095	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	0.00023	<0.05	0.00073	<0.001	0.00027	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0001	<0.0002
Bismuth	mg/L	-	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.25	<0.0005	<0.005	<0.0005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.0005	<0.001
Boron	mg/L	1.5	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<5	<0.01	<0.1	0.021	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.05	<0.01	<0.02
Cadmium	mg/L	0.00004-0.00037 ⁸	0.000065	0.000028	<0.00001	0.00006	0.000193	<0.00002	0.00006	2.22	0.000105	0.00216	0.000014	<0.00002	0.00711	0.000133	<0.00002	0.000297	0.000021	0.000377	0.000049	0.00223
Calcium	mg/L	-	59.8	25.4	128	354	554	277	75.4	462	98.4	613	141	536	638	318	319	336	427	759	222	310
Chromium	mg/L	0.001	0.00069	0.00091	0.00029	0.00174	<0.0002	0.00097	0.00016	<0.05	0.00036	<0.001	<0.0001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0001	<0.0002
Cobalt	mg/L	-	0.00428	<0.0001	0.00111	0.00159	0.0012	0.00308	0.00636	6.73	0.00545	0.233	0.00013	0.00222	0.3	0.0119	<0.0002	<0.0002	0.00328	0.00083	<0.0001	0.00056
Copper	mg/L	0.002-0.004 ⁹	<0.0002	0.00085	<0.0002	0.00046	0.00199	<0.0004	0.00077	<0.1	0.00026	<0.002	<0.0002	<0.0004	<0.002	<0.0004	<0.0004	<0.0004	<0.0004	0.0022	0.00131	0.00164
Iron	mg/L	0.3	14.7	0.071	8.61	2.57	<0.01	9.04	14	992	23.3	223	0.449	15.7	8.93	5.47	2.64	<0.01	0.985	<0.01	<0.01	<0.01
Lead	mg/L	0.001-0.007 ¹⁰	0.000101	0.000105	<0.00005	<0.0001	<0.0001	<0.0001	0.000128	1.91	0.000757	<0.0005	<0.00005	<0.0001	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.00025	0.00012	<0.0001
Lithium	mg/L	-	0.0402	0.00296	0.0374	0.0597	0.0751	0.0632	0.0155	0.84	0.0459	0.028	0.168	0.0222	0.0273	0.0053	0.01	0.0324	0.0145	0.009	0.0151	0.0196
Magnesium	mg/L	-	20	5.08	34.8	284	421	520	17.7	4070	38.8	199	49.2	91.6	166	68.3	45.9	154	128	97	51.9	110
Manganese	mg/L	-	0.895	0.0287	0.865	0.577	0.747	1.15	2.66	519	1.2	90	0.255	9.62	87	16.6	0.278	0.00239	0.576	0.0132	0.000436	1.11
Mercury	mg/L																					

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	Haul Road/Near NFRC									Intermediate Dam						Intermediate Dump	Main Dump	Mill Area		
		Location ID:	MW14-02D	MW14-02S	MW14-03	MW14-04D	MW14-04S	MW14-05	PW14-01	PW14-06	PW14-07	P01-03	P01-04A	P01-04B	X24-96D	X25-96A	X25-96B	P96-6	SRK08-P9	SRK08-10A	SRK08-11A	SRK08-11B
		Date Sampled:	15/09/2014	15/09/2014	14/09/2014	15/09/2014	17/09/2014	15/09/2014	14/09/2014	14/09/2014	14/09/2014	09/09/2014	09/09/2014	09/09/2014	09/09/2014	09/09/2014	09/09/2014	12/09/2014	11/09/2014	10/09/2014	10/09/2014	10/09/2014
Parameter	Units	CCME FAL ^{3,4}																				
Total Metals																						
Aluminum	mg/L	0.005-0.1 ⁷	0.18	0.478	0.754	0.974	0.027	0.468	0.0399	80.4	0.196	0.127	0.0039	0.0079	0.119	0.0064	0.0269	0.0314	1.71	8.95	0.118	0.0566
Antimony	mg/L	-	<0.0001	0.00011	0.00028	<0.0002	<0.0002	<0.0002	<0.0001	<0.05	<0.0001	<0.001	<0.0001	<0.0002	0.0016	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.00011	<0.0002
Arsenic	mg/L	0.005	0.00208	0.00066	0.00991	0.00109	0.00035	0.00279	0.00088	<0.05	0.00261	<0.001	0.00014	0.00198	0.0012	0.00033	0.00123	0.0006	0.00214	0.0027	0.00019	<0.0002
Barium	mg/L	-	0.0339	0.0524	0.159	0.0416	0.0313	0.0657	0.0737	0.034	0.0657	0.0143	0.441	0.0179	0.032	0.0679	0.0298	0.0226	0.0433	0.0737	0.13	0.0681
Beryllium	mg/L	-	0.00102	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	0.00027	<0.05	0.00078	<0.001	0.00031	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0001	<0.0002
Bismuth	mg/L	-	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.25	<0.0005	<0.005	<0.0005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.0005	<0.001
Boron	mg/L	1.5	<0.01	<0.01	0.012	<0.02	<0.02	<0.02	<0.01	<5	<0.01	<0.1	0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.05	<0.01	<0.02
Cadmium	mg/L	0.00004-0.00037 ⁸	0.000081	0.000043	0.000029	0.000136	0.000211	0.00007	0.000068	2.08	0.000151	0.0021	0.000014	<0.00002	0.00771	0.000136	0.00002	0.000336	0.000044	0.00094	0.000046	0.00238
Calcium	mg/L	-	60.5	25.9	127	340	590	266	76	475	99.1	616	139	522	678	305	318	343	424	762	216	302
Chromium	mg/L	0.001	0.00121	0.00335	0.00511	0.00623	<0.0002	0.0035	0.00042	<0.05	0.00093	<0.001	0.00012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0116	0.0123	0.00039	<0.0002
Cobalt	mg/L	-	0.00442	0.00032	0.00186	0.00244	0.00124	0.00352	0.00655	6.26	0.00544	0.229	0.00013	0.00227	0.352	0.0123	<0.0002	<0.0002	0.00637	0.0037	0.0001	0.00113
Copper	mg/L	0.002-0.004 ⁹	0.00107	0.00181	0.00405	0.0027	0.0022	0.0014	0.00106	<0.25	0.00063	<0.005	<0.0005	<0.001	0.0057	<0.001	<0.001	<0.001	0.0079	0.0077	0.00161	0.0019
Iron	mg/L	0.3	15.1	0.96	10.1	5.19	0.053	9.74	14.3	1030	23.5	217	0.451	15.3	10.9	5.29	2.69	0.136	4.55	7.25	0.147	0.126
Lead	mg/L	0.001-0.007 ¹⁰	0.000356	0.000848	0.00163	0.00102	0.00035	0.00614	0.000257	1.82	0.00302	0.00062	<0.00005	<0.0001	0.00374	0.00016	0.00035	0.00025	0.00244	0.0145	0.00208	0.00045
Lithium	mg/L	-	0.0414	0.00386	0.0389	0.0589	0.0812	0.0655	0.0183	0.72	0.0467	0.0287	0.186	0.0244	0.0287	0.0056	0.011	0.0331	0.0167	0.0233	0.0155	0.0192
Magnesium	mg/L	-	20.1	5.31	35.7	258	478	513	17.9	4220	38.8	195	49.5	94.6	172	68.8	46.4	153	132	106	50.2	104
Manganese	mg/L	-	0.904	0.0366	0.91	0.603	0.747	1.16	2.76	482	1.18	87.5	0.262	9.91	92.7	16.8	0.296	0.00279	0.768	0.146	0.00543	1.23
Mercury	mg/L	0.000026	<0.00001	0.000011	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.00002	<0.00001	<0.00001
Molybdenum	mg/L	0.073	0.00018	0.000839	0.00367	0.00156	0.00127	0.00071	0.000149	<0.025	0.000245	0.00059	<0.00005	0.00048	0.00086	0.00115	0.00038	0.0001	0.00345	0.00085	0.000189	0.00019
Nickel	mg/L	0.025-0.150 ¹¹	0.0129	0.00288	0.00648	0.0128	0.0113	0.0156	0.00998	10.2	0.0157	0.0878	<0.0005	0.0038	0.543	0.0072	<0.001	0.0132	0.0178	0.025	0.00279	0.0393
Phosphorus	mg/L	-	<0.050	<0.050	0.104	<0.050	<0.050	0.057	<0.050	<0.500	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.11	0.085	<0.050	<0.050
Potassium	mg/L	-	2.76	0.76	7.33	10.6	14.2	9.32	2.2	12.4	3.43	7.68	3.5	5.97	7.92	5.15	4.31	4.57	2.2	15.8	3.72	4.72
Selenium	mg/L	0.001	<0.0001	0.00024	<0.0001	0.00022	0.00057	<0.0002	<0.0001	<0.05	<0.0001	<0.001	<0.0001	<0.0002	<0.001	<0.0002	<0.0002	0.00393	<0.0002	<0.0005	0.00018	<0.0002
Sodium	mg/L		8.99	2.05	7.4	11.4	13.2	10.2	5.26	34	9.44	30.5	66.2	42	41.7	20.9	52.6	6.03	19.2	176	7.95	14.9
Silicon	mg/L	-	11.2	5.91	10.1	10.7	11	8.77	9.78	15.5	13.1	11.6	8.75	8.21	9.33	8.68	4.96	8.69	10.3	22.4	6.81	8.15
Silver	mg/L	0.0001	<0.00001	0.000012	0.000016	<0.00002	0.000028	0.000043	<0.00001	<0.005	<0.00001	<0.0001	0.000166	<0.00002	<0.0001	<0.00002	<0.00002	<0.00002	0.000024	0.000067	<0.00001	<0.00002
Strontium	mg/L	-	0.35	0.11	0.647	1.49	2.55	1.28	0.347	2.34	0.491	2.27	1.91	1.36	2.09	0.806	0.637	0.849	10.9	1.67	0.84	1.19
Sulfur	mg/L	-	25.1	4.04	24	438	818	760	23.6	8670	80.8	823	10.2	460	747	263	250	399	465	576	184	326
Thallium	mg/L	0.0008	<0.00001	0.000019	0.000016	0.000053	0.000056	<0.00002	0.000011	0.02	<0.00001	<0.0001	<0.00001	<0.00002	0.00024	<0.00002	<0.00002	<0.00002	<0.00002	0.00007	<0.00001	0.000036
Tin	mg/L	-	<0.0001	<0.0001	0.00013	<0.0002	<0.0002	<0.0002	<0.0001	<0.05	<0.0001	<0.001	<0.0001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.00066	<0.0001	<0.0002
Titanium	mg/L	-	<0.01	0.022	0.028	0.071	<0.02	0.022	<0.01	<5	<0.01	<0.1	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	0.067	0.351	<0.01	<0.02
Uranium	mg/L	0.015	0.00047	0.000961	0.017	0.121	0.234	0.14	0.00151	0.305	0.00105	0.0043	0.000297	0.00704	0.00334	0.012	0.00677	0.0621	0.00429	0.0407	0.00243	0.00142
Vanadium	mg/L	-	<0.001	0.0013	0.0023	0.0023	<0.002	<0.002	<0.001	<0.5	<0.001	<0.01	0.001	<0.002	<0.01	<0.002	<0.002	<0.002	0.0061	0.0114	<0.001	<0.002
Zinc	mg/L	0.03	0.752	0.0204	0.131	0.188	0.0281	0.211	0.661	2720	1.16	0.332	<0.003	<0.006	0.251	<0.006	<0.006	0.389	0.0258	1.2	0.041	1.53
Zirconium	mg/L	-	<0.0008	<0.0008	0.00151	<0.0016	<0.0016	<0.0016	<0.0008	<0.4	<0.0008	<0.008	0.0692	<0.0016	<0.008	<0.0016	<0.0016	<0.0016	<0.0016	<0.004	<0.0008	<0.0016

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	NFRC Rock Drain Pond						Northeast Dumps			Second Impoundment									
		Location ID:	MW14-12D	MW14-12S	MW14-13	MW14-14	MW14-15	MW14-16	BH13B	BH14A	BH14B	P03-01-2	P03-01-8	P03-03-2	P03-03-4	P03-03-9	P03-05-4	P03-06-1	P03-06-2	P03-06-6	P03-06-7
		Date Sampled:	13/09/2014	13/09/2014	13/09/2014	16/09/2014	14/09/2014	13/09/2014	12/09/2014	12/09/2014	12/09/2014	16/09/2014	16/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014
Parameter	Units	CCME FAL ^{3,4}																			
Lab's Sample ID		-	L1518297-48	L1518297-47	L1518297-44	L1519343-1	L1518297-60	L1518297-46	L1518297-35	L1518297-36	L1518297-33	L1519343-2	L1519343-3	L1518297-72	L1518297-71	L1518297-70	L1518297-73	L1518297-74	L1518297-75	L1518297-3	DRY
Physical Tests																					
Conductivity	uS/cm	-	817	616	1640	2800	621	1620	1160	4190	3780	415	34400	3350	2270	28400	1730	4590	4730	20000	-
Hardness, Total (CaCO3)	mg/L	-	479	330	1060	1780	1000	1060	681	3220	2790	209	5340	529	704	3850	1040	2000	1940	15700	-
pH	pH Units	6.5-9 ⁵	7.17	7.58	6.48	7.32	7.52	6.85	7.53	7.45	7.37	7.89	3.16	4.43	5.38	3.2	6.76	4.96	5.14	4.09	-
Total Suspended Solids	mg/L	See guideline ⁶	<1.000	69.8	<1.000	104	337	1.2	<1.000	8.8	33.8	5.8	150	6.6	12.8	354	11.4	91.6	852	3690	-
Anions and Nutrients																					
Acidity (as CaCO3)	mg/L	-	51700	13800	178000	66500	7600	121000	8100	81800	55900	5500	49800000	2960000	758000	43200000	45400	2110000	2450000	10300000	-
Alkalinity, Total	mg/L	-	211	35	407	84.7	69	490	99.5	587	476	221	<2.000	<2.000	12.2	<2.000	83.5	16.5	14.7	<2.000	-
Anion Sum	mEq/L	-	9.85	6.62	22.4	44.7	6.98	21.9	14.5	70	60.3	4.82	1180	59	35.3	921	24	84.9	83.8	529	-
Cation - Anion Balance	%	-	0.9	2.5	-0.8	-10.1	50.1	0	-1.9	-2.8	-3.2	-1.1	19.7	12	7.8	20.8	-0.1	5	7.8	0.7	-
Cation Sum	mEq/L	-	10	6.96	22.1	36.6	21	21.9	14	66.1	56.6	4.71	1750	75.1	41.2	1410	23.9	93.8	97.9	536	-
Chloride	mg/L	-	2.7	<0.500	<5.000	<10.000	<0.500	<5.000	<5.000	<10.000	<10.000	<0.500	29	<10.000	<10.000	<50.000	<5.000	<10.000	<10.000	38	-
Sulfate (SO4)	mg/L	-	267	284	687	2070	269	582	603	2800	2440	19.4	56500	2830	1680	44200	1070	4060	4010	25300	-
Dissolved Metals																					
Aluminum	mg/L	0.005-0.1 ⁷	0.0118	0.0187	0.0635	0.0177	0.0081	0.0216	0.0032	<0.005	<0.002	0.0023	0.45	2.71	0.067	<0.2	<0.005	2.81	1.67	4.57	-
Antimony	mg/L	-	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0005	<0.0002	<0.0001	<0.02	<0.002	<0.001	<0.02	<0.0005	<0.005	<0.005	<0.05	-
Arsenic	mg/L	0.005	0.00012	0.00015	<0.0002	0.00027	<0.0002	0.00021	<0.0001	<0.0005	<0.0002	0.0141	<0.02	<0.002	0.0041	<0.02	<0.0005	<0.005	<0.005	0.086	-
Barium	mg/L	-	0.114	0.113	0.0599	0.0641	0.0282	0.073	0.0301	0.0159	0.0196	0.0925	<0.01	0.0083	0.0376	<0.01	0.0289	0.0142	0.0122	<0.025	-
Beryllium	mg/L	-	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0005	<0.0002	<0.0001	<0.02	<0.002	<0.001	<0.02	<0.0005	<0.005	<0.005	<0.05	-
Bismuth	mg/L	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0025	<0.001	<0.0005	<0.1	<0.01	<0.005	<0.1	<0.0025	<0.025	<0.025	<0.25	-
Boron	mg/L	1.5	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.05	<0.02	<0.01	<2	<0.2	<0.1	<2	<0.05	<0.5	<0.5	<5	-
Cadmium	mg/L	0.00004-0.00037 ⁸	0.00101	0.000952	0.00357	0.000884	0.00195	0.00222	0.000045	0.0027	0.000235	<0.00001	<0.002	0.00863	0.00994	<0.002	0.000684	0.0793	0.0588	0.15	-
Calcium	mg/L	-	131	72.1	287	294	140	301	159	530	544	62.5	447	139	192	453	322	474	472	391	-
Chromium	mg/L	0.001	0.00012	0.00015	<0.0002	<0.0002	<0.0002	0.0002	<0.0001	<0.0005	<0.0002	<0.0001	<0.02	<0.002	<0.001	<0.02	<0.0005	<0.005	<0.005	<0.05	-
Cobalt	mg/L	-	0.00012	0.00011	0.00058	0.018	0.00109	0.00053	0.00133	<0.0005	<0.0002	0.00767	<0.02	0.0887	0.316	<0.02	0.0907	3.05	2.56	1.51	-
Copper	mg/L	0.002-0.004 ⁹	0.00092	0.00114	0.00284	0.00094	0.00152	0.00231	0.00478	0.0019	0.00075	<0.0002	<0.04	0.0198	<0.002	<0.04	<0.001	<0.01	<0.01	<0.1	-
Iron	mg/L	0.3	<0.01	<0.01	<0.01	0.029	0.014	<0.01	0.026	<0.01	<0.01	3.02	29700	1110	441	23800	15	808	926	2090	-
Lead	mg/L	0.001-0.007 ¹⁰	<0.00005	<0.00005	<0.0001	<0.0001	<0.0001	<0.00005	<0.00005	0.0185	0.0155	<0.00005	<0.01	0.0019	0.00075	<0.01	<0.00025	0.0129	0.0135	2.66	-
Lithium	mg/L	-	0.0173	0.00961	0.0349	0.006	0.046	0.0292	0.0158	0.107	0.0743	0.0153	0.54	0.021	0.0566	0.2	0.0275	0.143	0.129	0.46	-
Magnesium	mg/L	-	36.8	36.4	82.2	254	158	75.6	68.8	461	347	12.9	1030	44.3	54.8	661	56.5	198	185	3580	-
Manganese	mg/L	-	0.0588	0.205	0.456	5.17	0.293	0.0527	0.000549	0.0511	0.00875	0.124	251	12.5	50.7	147	45.9	214	188	643	-
Mercury	mg/L	0.000026	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	-
Molybdenum	mg/L	0.073	0.000104	<0.00005	<0.0001	0.00148	0.00047	0.000139	0.00349	0.00038	0.00021	0.00314	0.015	<0.001	<0.0005	<0.01	0.00039	<0.0025	<0.0025	<0.025	-
Nickel	mg/L	0.025-0.150 ¹¹	0.047	0.0149	0.128	0.0456	0.109	0.0813	0.0075	0.299	0.0137	<0.0005	<0.1	0.142	0.35	<0.1	0.0357	3.44	3.03	1.55	-
Phosphorus	mg/L	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<2.500	<0.100	<0.050	<2.500	<0.050	<0.100	<0.100	<0.500	-
Potassium	mg/L	-	3.68	2.64	4.93	3.17	2.58	4.96	2.96	4.53	4.28	2.25	121	4.3	5.69	62.6	3.64	7.89	7.36	11.3	-
Selenium	mg/L	0.001	0.00038	0.00014	0.00049	<0.0002	0.00037	0.00201	0.0101	0.00093	0.00061	<0.0001	<0.02	<0.002	<0.001	<0.02	<0.0005	<0.005	<0.005	<0.05	-
Silicon	mg/L	-	8.96	10.9	13.4	9.74	8.99	11.2	3.83	10.8	9.09	7.68	<2.5	19.8	17.6	8.3	11.5	38.4	33.2	12.4	-
Silver	mg/L	0.0001	<0.00001	<0.00001	<0.00002	<0.00002	<0.00002	<0.00001	<0.00001	<0.00005	<0.00002	<0.00001	<0.002	<0.0002	<0.0001	<0.002	<0.00005	<0.0005	<0.0005	<0.005	-
Sodium	mg/L	-	6.54	4.92	12.5	7.92	9.87	9.11	7.07	21.1	17.9	7.07	253	7.5	21.1	280	14.5	28.5	25.3	118	-
Strontium	mg/L	-	0.423	0.32	1.03	1.27	0.656	0.958	0.854	3.52	3.54	0.416	2.02	0.495	0.626	0.758	0.805	2.05	1.87	0.12	-
Sulfur	mg/L	-	89.6	99.3	218	571	331	182	194	877	731	7.17	19300	898	532	15400	370	1260	1310	8200	-
Thallium	mg/L	0.0008	<0.00001	<0.00001	<0.00002	<0.00002	<0.00002	0.000013	<0.00001	<0.00005	<0.00002	<0.00001	<0.002	<0.0002	<0.0001	<0.002	<0.00005	<0.0005	<0.0005	<0.005	-
Tin	mg/L	-	<0.0001	<0.0001	<0.0002	0.00059	0.00025	<0.0001	<0.0001	<0.0005	<0.0002	<0.0001	<0.02	<0.002	<0.001	<0.02	<0.0005	<0.005	<0.005	<0.05	-
Titanium	mg/L	-	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.05	<0.02	<0.01	<2	<0.2	<0.1	<2	<0.05	<0.5	<0.5	<5	-
Uranium	mg/L	0.015	0.00163	0.000031	0.00489	0.000479	0.000206	0.00958	0.00179	0.149	0.2	0.000506	<0.002	0.00149	0.00016	<0.002	0.000977	0.0024	0.00153	0.0687	-
Vanadium	mg/L	-	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.005	<0.002	<0.001	<0.2	<0.02	<0.01	<0.2	<0.005	<0.05	<0.05	<0.5	-
Zinc	mg/L	0.03	2.21	2.39	9.27	12.5	16.9	4.4	0.0025	23.3	1.17	0.0074	999	122	16.8	1070	0.127	30.3	35	2640	-
Zirconium	mg/L	-	<0.0008	<0.0008	<0.0016	<0.0016	<0.0016	<0.0008	<0.0008	<0.004	<0.0016	<0.0008	<0.16	<0.016	<0.008	<0.16	<0.004	<0.04	<0.04	<0.4	-

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	NFRC Rock Drain Pond						Northeast Dumps			Second Impoundment									
		Location ID:	MW14-12D	MW14-12S	MW14-13	MW14-14	MW14-15	MW14-16	BH13B	BH14A	BH14B	P03-01-2	P03-01-8	P03-03-2	P03-03-4	P03-03-9	P03-05-4	P03-06-1	P03-06-2	P03-06-6	P03-06-7
		Date Sampled:	13/09/2014	13/09/2014	13/09/2014	16/09/2014	14/09/2014	13/09/2014	12/09/2014	12/09/2014	12/09/2014	16/09/2014	16/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014	15/09/2014
Parameter	Units	CCME FAL ^{3,4}																			
Total Metals																					
Aluminum	mg/L	0.005-0.1 ⁷	0.0472	0.865	0.0766	0.269	4.2	0.0443	0.031	0.197	0.0377	<0.003	<0.6	2.75	0.081	<0.6	0.266	3.09	26.1	16.1	-
Antimony	mg/L	-	<0.0001	<0.0001	<0.0002	<0.0002	0.00031	<0.0001	<0.0001	<0.0005	<0.0002	<0.0001	<0.02	<0.002	0.002	<0.02	<0.0005	<0.005	<0.005	0.099	-
Arsenic	mg/L	0.005	0.00023	0.00073	<0.0002	0.00044	0.00302	0.00032	<0.0001	0.00101	0.00031	0.014	<0.02	<0.002	0.0047	<0.02	<0.0005	<0.005	0.0224	0.807	-
Barium	mg/L	-	0.115	0.131	0.0625	0.0567	0.106	0.0739	0.0308	0.0369	0.026	0.0949	<0.01	0.0111	0.0415	0.018	0.0742	0.0184	0.4	0.886	-
Beryllium	mg/L	-	<0.0001	<0.0001	<0.0002	<0.0002	0.00021	<0.0001	<0.0001	<0.0005	<0.0002	<0.0001	<0.02	<0.002	<0.001	<0.02	<0.0005	<0.005	<0.005	<0.05	-
Bismuth	mg/L	-	<0.0005	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0025	<0.001	<0.0005	<0.1	<0.01	<0.005	<0.1	<0.0025	<0.025	<0.025	<0.25	-
Boron	mg/L	1.5	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.05	<0.02	<0.01	<2	<0.2	<0.1	<2	<0.05	<0.5	<0.5	<5	-
Cadmium	mg/L	0.00004-0.00037 ⁸	0.00101	0.00102	0.00375	0.00105	0.0021	0.00222	0.000047	0.00302	0.000254	<0.00001	<0.002	0.00891	0.0103	<0.002	0.0028	0.0808	0.0636	0.25	-
Calcium	mg/L	-	130	70.7	284	271	132	300	159	513	551	62.7	453	141	190	442	324	502	481	380	-
Chromium	mg/L	0.001	0.00022	0.0017	0.00036	0.00081	0.0101	0.00024	0.00014	0.00074	0.00038	<0.0001	<0.02	<0.002	<0.001	<0.02	<0.0005	<0.005	0.0677	0.119	-
Cobalt	mg/L	-	0.00014	0.00059	0.00055	0.0206	0.0041	0.00056	0.00144	0.00096	<0.0002	0.00788	<0.02	0.089	0.321	<0.02	0.0967	3.12	2.62	1.79	-
Copper	mg/L	0.002-0.004 ⁹	0.00123	0.00262	0.0031	0.0015	0.0098	0.0025	0.00511	0.0048	0.0011	<0.0005	<0.1	0.021	<0.005	<0.1	<0.0025	<0.025	0.094	2.94	-
Iron	mg/L	0.3	0.076	1.08	0.028	0.387	6.19	0.037	0.072	0.588	0.135	3.07	29800	1130	432	23100	14.9	828	980	2490	-
Lead	mg/L	0.001-0.007 ¹⁰	0.000088	0.00102	<0.0001	0.00093	0.00381	0.000081	0.000084	0.0832	0.0265	<0.00005	<0.01	0.0027	0.00165	0.052	0.00103	0.0172	0.123	16.4	-
Lithium	mg/L	-	0.0174	0.0109	0.036	0.0069	0.0508	0.0302	0.0162	0.109	0.076	0.0156	0.53	0.021	0.0573	0.26	0.0293	0.154	0.173	0.47	-
Magnesium	mg/L	-	37.4	36.3	84.6	259	151	76.2	70.2	461	349	13.1	1020	45.4	56.1	643	53.8	207	200	3490	-
Manganese	mg/L	-	0.062	0.224	0.471	5.54	0.369	0.0577	0.00138	0.0797	0.01	0.127	245	12.7	51.4	151	49.8	218	188	652	-
Mercury	mg/L	0.000026	<0.00001	<0.00001	<0.00001	<0.00001	0.000011	<0.00001	<0.00001	0.000084	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000064	<0.00001	-
Molybdenum	mg/L	0.073	0.000121	0.000089	<0.0001	0.00139	0.00096	0.000159	0.00375	0.00046	0.00023	0.00339	0.016	<0.001	<0.0005	<0.01	0.00042	<0.0025	0.0026	<0.025	-
Nickel	mg/L	0.025-0.150 ¹¹	0.0475	0.0168	0.134	0.0562	0.119	0.0833	0.00787	0.304	0.0147	<0.0005	<0.1	0.142	0.352	<0.1	0.0387	3.53	3.14	1.83	-
Phosphorus	mg/L	-	<0.050	<0.050	<0.050	<0.050	0.159	<0.050	<0.050	<0.050	<0.050	<0.050	<2.500	<0.100	<0.050	<2.500	<0.050	<0.100	0.37	<0.500	-
Potassium	mg/L	-	3.72	2.74	4.99	3.16	3.28	4.97	3.01	4.42	4.38	2.33	120	4.46	5.55	61.2	3.58	8.12	10.9	12.3	-
Selenium	mg/L	0.001	0.00034	0.00015	0.00036	<0.0002	0.0004	0.00169	0.0099	0.00096	0.00069	<0.0001	<0.02	<0.002	<0.001	<0.02	<0.0005	<0.005	<0.005	<0.05	-
Sodium	mg/L		6.74	5.12	13	8.15	9.89	9.4	7.16	21.6	18.3	7.32	231	7.6	21.7	284	15.4	27.8	26.4	120	-
Silicon	mg/L	-	9.31	12.2	13.6	9.73	14.7	11.4	3.93	10.8	9.23	7.81	<2.5	20.4	17.2	8.4	11.8	39.5	69.7	27.9	-
Silver	mg/L	0.0001	<0.00001	0.000025	<0.00002	0.000023	0.000056	<0.00001	<0.00001	0.00026	0.000027	<0.00001	<0.002	<0.0002	<0.0001	<0.002	<0.00005	<0.0005	<0.0005	0.0366	-
Strontium	mg/L	-	0.431	0.336	1.07	1.28	0.647	0.995	0.883	3.62	3.73	0.424	1.96	0.511	0.657	0.887	0.847	2.19	1.96	0.14	-
Sulfur	mg/L	-	92.8	99.5	236	583	315	194	199	884	747	7.05	19500	920	542	15300	357	1340	1320	8360	-
Thallium	mg/L	0.0008	<0.00001	0.000015	<0.00002	<0.00002	0.000075	0.000013	0.000012	<0.00005	<0.00002	<0.00001	<0.002	<0.0002	0.00012	<0.002	<0.00005	<0.0005	<0.0005	0.011	-
Tin	mg/L	-	<0.0001	<0.0001	<0.0002	0.00059	0.001	<0.0001	<0.0001	<0.0005	<0.0002	<0.0001	<0.02	<0.002	<0.001	<0.02	<0.0005	<0.005	<0.005	<0.05	-
Titanium	mg/L	-	<0.01	0.033	<0.02	<0.02	0.158	<0.01	<0.01	<0.05	<0.02	<0.01	<2	<0.2	<0.1	<2	<0.05	<0.5	0.88	<5	-
Uranium	mg/L	0.015	0.00167	0.000123	0.00519	0.000548	0.000582	0.00993	0.0019	0.154	0.207	0.000526	<0.002	0.00161	0.00017	<0.002	0.00109	0.00286	0.00375	0.0891	-
Vanadium	mg/L	-	<0.001	0.0024	<0.002	<0.002	0.0117	<0.001	<0.001	<0.005	<0.002	<0.001	<0.2	<0.02	<0.01	<0.2	<0.005	<0.05	<0.05	<0.5	-
Zinc	mg/L	0.03	2.19	2.39	9.48	15.3	16.6	4.48	0.0038	23.7	1.23	0.0155	1030	121	17.1	1110	0.136	31.8	35.7	2680	-
Zirconium	mg/L	-	<0.0008	<0.0008	<0.0016	<0.0016	<0.0016	<0.0008	<0.0008	<0.004	<0.0016	<0.0008	<0.16	<0.016	<0.008	<0.16	<0.004	<0.04	<0.04	<0.4	-

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	S-Wells Area															
		Location ID:	P09-SIS1	P09-SIS2	P09-SIS3	P09-SIS4	P09-SIS5	P96-7	S1A	S1B	S2A	S2B	SRK05-SP-1A	SRK05-SP-1B	SRK05-SP-3A	SRK05-SP-3B	SRK05-SP-4A	SRK05-SP-4B
		Date Sampled:	09/09/2014	09/09/2014	09/09/2014	09/09/2014	09/09/2014	10/09/2014	10/09/2014	11/09/2014	10/09/2014	10/09/2014	10/09/2014	11/09/2014	10/09/2014	10/09/2014	09/09/2014	09/09/2014
Parameter	Units	CCME FAL ^{3,4}																
Lab's Sample ID		-	L1516957-5	L1516957-1	L1516957-2	L1516957-6	L1516957-7	L1516957-24	L1516957-27	L1518297-19	L1516957-29	L1516957-30	L1516957-33	L1518297-15	L1516957-26	L1516957-25	L1516957-3	L1516957-4
Physical Tests																		
Conductivity	uS/cm	-	9270	11600	11500	6130	5040	2960	3010	772	2090	9520	2270	1070	1540	1150	1360	7650
Hardness, Total (CaCO3)	mg/L	-	8230	10300	10200	5120	3920	2260	2140	417	1360	7830	1440	646	959	683	783	6390
pH	pH Units	6.5-9 ⁵	6.61	6.02	6.77	7.25	7.34	7.72	6.47	7.27	7.02	6.54	6.59	6.93	6.53	6.55	7.22	6.8
Total Suspended Solids	mg/L	See guideline ⁶	37	5.6	6.4	46	73	1.4	170	1.8	24.2	22.4	2.2	10.6	2.4	1.4	7.6	11.8
Anions and Nutrients																		
Acidity (as CaCO3)	mg/L	-	631000	1310000	1270000	187000	103000	16800	236000	39000	157000	1010000	339000	102000	170000	171000	158000	609000
Alkalinity, Total	mg/L	-	287	141	177	434	441	231	241	266	327	184	241	378	283	290	273	176
Anion Sum	mEq/L	-	199	264	265	118	91.9	48.2	49	9.2	31.1	211	33.5	13.3	20.6	14.5	17.8	160
Cation - Anion Balance	%	-	-3.4	-3.9	-3.8	-4.8	-4.5	-2.1	-1.2	1.3	-2.3	-7	1.3	3.3	2.1	2.1	0.1	-5.5
Cation Sum	mEq/L	-	186	244	245	107	84	46.2	47.8	9.45	29.7	184	34.4	14.2	21.5	15.1	17.8	143
Chloride	mg/L	-	28	<25.000	25	<10.000	<10.000	<10.000	<10.000	<0.500	<10.000	<25.000	<10.000	<5.000	<5.000	<5.000	<5.000	28
Sulfate (SO4)	mg/L	-	9250	12500	12500	5240	3990	2090	2120	187	1180	9980	1380	277	717	419	591	7490
Dissolved Metals																		
Aluminum	mg/L	0.005-0.1 ⁷	<0.05	0.84	0.14	<0.01	0.0119	<0.002	0.027	0.007	0.008	<0.1	0.11	0.0078	0.0313	0.0297	0.0232	<0.05
Antimony	mg/L	-	<0.005	<0.01	<0.01	<0.001	<0.0005	<0.0002	<0.001	0.00017	<0.0002	<0.01	<0.0002	<0.0001	<0.0001	<0.0001	<0.0005	<0.005
Arsenic	mg/L	0.005	<0.005	<0.01	<0.01	<0.001	0.00086	<0.0002	<0.001	0.00021	<0.0002	<0.01	0.00537	0.0224	0.00269	0.0002	<0.0005	<0.005
Barium	mg/L	-	0.0306	0.0231	0.0214	0.0133	0.0206	0.012	0.015	0.0424	0.0153	0.0294	0.0134	0.0469	0.016	0.0169	0.00995	0.0161
Beryllium	mg/L	-	<0.005	<0.01	<0.01	<0.001	<0.0005	<0.0002	<0.001	<0.0001	<0.0002	<0.01	0.00277	0.00015	0.00124	0.00055	0.00077	<0.005
Bismuth	mg/L	-	<0.025	<0.05	<0.05	<0.005	<0.0025	<0.001	<0.005	<0.0005	<0.001	<0.05	<0.001	<0.0005	<0.0005	<0.0005	<0.0025	<0.025
Boron	mg/L	1.5	<0.5	<1	<1	<0.1	<0.05	<0.02	<0.1	<0.01	<0.02	<1	<0.02	0.01	0.01	<0.01	<0.05	<0.5
Cadmium	mg/L	0.00004-0.00037 ⁸	0.0536	0.568	0.636	0.0171	0.00128	0.000046	0.0062	0.000159	0.00114	0.125	0.000054	0.000113	0.000053	0.000063	0.00412	0.074
Calcium	mg/L	-	510	497	494	472	482	516	352	115	306	549	342	157	237	171	137	523
Chromium	mg/L	0.001	<0.005	<0.01	<0.01	0.0016	<0.0005	0.00048	<0.001	0.00013	<0.0002	<0.01	<0.0002	<0.0001	<0.0001	<0.0001	<0.0005	<0.005
Cobalt	mg/L	-	0.793	2.79	2.54	<0.001	0.0336	<0.0002	0.168	<0.0001	0.0291	1.76	0.00769	0.00319	0.00563	0.00598	0.0548	0.0185
Copper	mg/L	0.002-0.004 ⁹	<0.01	0.024	0.031	0.0054	0.0013	0.00043	<0.002	0.00329	0.00042	<0.02	<0.0004	<0.0002	<0.0002	<0.0002	<0.001	0.011
Iron	mg/L	0.3	19.3	0.256	<0.05	<0.03	15.1	<0.01	23.3	<0.01	23.8	9.09	84.3	13.8	31	17.1	12.2	3.36
Lead	mg/L	0.001-0.007 ¹⁰	<0.0025	<0.005	<0.005	<0.0005	<0.00025	<0.0001	<0.0005	<0.00005	0.00043	<0.005	0.00017	<0.00005	0.000211	0.00017	0.00026	<0.0025
Lithium	mg/L	-	0.236	0.212	0.224	0.107	0.0478	0.0247	0.0786	0.0128	0.0561	0.157	0.0987	0.0325	0.0644	0.0558	0.0813	0.151
Magnesium	mg/L	-	1690	2210	2170	956	660	236	307	31.6	145	1570	142	62	89.4	62.3	107	1230
Manganese	mg/L	-	137	197	223	10.3	34.6	0.00062	22.1	0.00919	5.55	148	2.73	0.813	1.45	1.41	5.87	62
Mercury	mg/L	0.000026	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	0.073	<0.0025	<0.005	<0.005	<0.0005	0.00088	0.00088	<0.0005	0.000177	<0.0001	<0.005	0.00014	0.000554	0.000145	0.000099	<0.00025	<0.0025
Nickel	mg/L	0.025-0.150 ¹¹	1.62	4.29	4.86	0.518	0.156	<0.001	0.292	0.00368	0.0574	2.77	0.0301	0.00837	0.0178	0.0168	0.143	2.34
Phosphorus	mg/L	-	<0.250	<0.250	<0.250	<0.150	<0.100	<0.050	<0.050	<0.050	<0.050	<0.250	<0.050	0.172	<0.050	<0.050	<0.050	<0.250
Potassium	mg/L	-	12.5	18.1	19.5	10	9.32	5.85	7.75	2.72	5.96	14.2	6.06	4.81	5.23	5.2	5.39	11.6
Selenium	mg/L	0.001	<0.005	<0.01	<0.01	<0.001	<0.0005	0.00037	<0.001	0.00014	<0.0002	<0.01	<0.0002	0.00011	<0.0001	<0.0001	<0.0005	<0.005
Silicon	mg/L	-	11.6	13.5	14.5	10.7	10.9	6.23	14.7	6.23	13.6	11.5	14.7	12.9	12.7	12.5	13.2	12.3
Silver	mg/L	0.0001	<0.0005	<0.001	<0.001	<0.0001	<0.00005	<0.00002	<0.0001	<0.00001	<0.00002	<0.001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00005	<0.0005
Sodium	mg/L	-	62.7	69.1	71.2	35.9	67.1	22.2	16.2	24.3	14	51.2	17.9	9.8	9.64	8.39	11.1	38.7
Strontium	mg/L	-	2.73	2.45	2.68	2.34	1.89	0.598	1.11	0.34	1.04	2.36	1.5	0.7	0.955	0.675	0.594	2.6
Sulfur	mg/L	-	2840	3850	3790	1560	1180	645	654	61.8	351	2830	404	91.2	219	129	190	2200
Thallium	mg/L	0.0008	<0.0005	<0.001	<0.001	<0.0001	<0.00005	<0.00002	<0.0001	<0.00001	<0.00002	<0.001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00005	<0.0005
Tin	mg/L	-	<0.005	<0.01	<0.01	<0.001	<0.0005	<0.0002	<0.001	<0.0001	<0.0002	<0.01	<0.0002	<0.0001	<0.0001	<0.0001	<0.0005	<0.005
Titanium	mg/L	-	<0.5	<1	<1	<0.1	<0.05	<0.02	<0.1	<0.01	<0.02	<1	<0.02	<0.01	<0.01	<0.01	<0.05	<0.5
Uranium	mg/L	0.015	0.00267	0.0016	0.0019	0.0171	0.0139	0.025	0.0034	0.00172	0.00467	<0.001	0.000591	0.00161	0.00223	0.0019	0.00184	0.00344
Vanadium	mg/L	-	<0.05	<0.1	<0.1	<0.01	<0.005	<0.002	<0.01	<0.001	<0.002	<0.1	<0.002	<0.001	<0.001	<0.001	<0.005	<0.05
Zinc	mg/L	0.03	411	897	999	82.8	15	0.0023	68.5	0.0195	6.79	616	2.29	0.244	1.53	0.993	21.8	373
Zirconium	mg/L	-	<0.04	<0.08	<0.08	<0.008	<0.004	<0.0016	<0.008	<0.0008	<0.0016	<0.08	<0.0016	<0.0008	<0.0008	<0.0008	<0.004	<0.04

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	S-Wells Area															
		Location ID:	P09-SIS1	P09-SIS2	P09-SIS3	P09-SIS4	P09-SIS5	P96-7	S1A	S1B	S2A	S2B	SRK05-SP-1A	SRK05-SP-1B	SRK05-SP-3A	SRK05-SP-3B	SRK05-SP-4A	SRK05-SP-4B
		Date Sampled:	09/09/2014	09/09/2014	09/09/2014	09/09/2014	09/09/2014	10/09/2014	10/09/2014	11/09/2014	10/09/2014	10/09/2014	10/09/2014	11/09/2014	10/09/2014	10/09/2014	09/09/2014	09/09/2014
Parameter	Units	CCME FAL ^{3,4}																
Total Metals																		
Aluminum	mg/L	0.005-0.1 ⁷	0.71	1.03	<0.3	0.275	0.526	0.0132	2.22	0.0449	0.937	0.44	0.112	0.142	0.0633	0.0602	0.056	<0.15
Antimony	mg/L	-	<0.005	<0.01	<0.01	<0.001	<0.0005	<0.0002	<0.001	0.0002	<0.0002	<0.01	<0.0002	<0.0001	<0.0001	<0.0001	<0.0005	<0.005
Arsenic	mg/L	0.005	<0.005	<0.01	<0.01	<0.001	0.00146	<0.0002	0.0021	0.0003	0.00185	<0.01	0.0051	0.0255	0.00274	0.00025	0.00159	<0.005
Barium	mg/L	-	0.0362	0.0224	0.0218	0.0149	0.0302	0.0123	0.0482	0.0473	0.0291	0.0357	0.0134	0.0495	0.0167	0.0177	0.0097	0.0173
Beryllium	mg/L	-	<0.005	<0.01	<0.01	<0.001	<0.0005	<0.0002	<0.001	<0.0001	<0.0002	<0.01	0.00261	0.00019	0.00137	0.00054	0.00088	<0.005
Bismuth	mg/L	-	<0.025	<0.05	<0.05	<0.005	<0.0025	<0.001	<0.005	<0.0005	<0.001	<0.05	<0.001	<0.0005	<0.0005	<0.0005	<0.0025	<0.025
Boron	mg/L	1.5	<0.5	<1	<1	<0.1	<0.05	<0.02	<0.1	<0.01	<0.02	<1	<0.02	0.014	0.017	0.013	<0.05	<0.5
Cadmium	mg/L	0.00004-0.00037 ⁸	0.0725	0.581	0.649	0.0161	0.00162	0.00005	0.00569	0.000168	0.00112	0.123	0.000053	0.000206	0.000061	0.000062	0.004	0.0754
Calcium	mg/L	-	494	521	501	472	496	495	328	113	300	529	339	154	235	167	143	533
Chromium	mg/L	0.001	<0.005	<0.01	<0.01	0.0024	0.00231	0.00061	0.0055	0.00024	0.00339	<0.01	0.00034	0.0005	0.00033	0.00026	<0.0005	<0.005
Cobalt	mg/L	-	0.757	2.85	2.58	<0.001	0.0337	<0.0002	0.158	0.0001	0.0293	1.72	0.00787	0.00324	0.00604	0.00656	0.0536	0.0107
Copper	mg/L	0.002-0.004 ⁹	<0.025	<0.05	<0.05	0.0063	0.0048	<0.001	0.0055	0.00378	0.0037	<0.05	<0.001	0.00051	<0.0005	<0.0005	<0.0025	<0.025
Iron	mg/L	0.3	20.4	0.378	0.101	0.592	19.6	0.034	28.1	0.083	25.1	11.5	83.2	14.3	31.2	16.3	13.4	4.7
Lead	mg/L	0.001-0.007 ¹⁰	0.0027	<0.005	<0.005	0.00051	0.00192	<0.0001	0.00324	0.00014	0.0376	<0.005	0.00017	0.000171	0.000276	0.000394	0.00173	<0.0025
Lithium	mg/L	-	0.227	0.218	0.223	0.105	0.05	0.0236	0.0762	0.013	0.0544	0.124	0.0953	0.0323	0.0681	0.0564	0.0831	0.154
Magnesium	mg/L	-	1630	2300	2240	939	653	243	288	31.1	141	1550	143	63	92	62.9	104	1260
Manganese	mg/L	-	131	200	224	9.41	33.3	0.00123	21	0.0129	5.45	145	2.76	0.815	1.51	1.46	5.78	61.5
Mercury	mg/L	0.000026	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000038	<0.00001	0.000033	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	0.073	<0.0025	<0.005	<0.005	<0.0005	0.001	0.00088	<0.0005	0.000197	0.00013	<0.005	0.00015	0.000604	0.00016	0.000108	<0.00025	<0.0025
Nickel	mg/L	0.025-0.150 ¹¹	1.55	4.39	4.89	0.492	0.152	<0.001	0.279	0.00418	0.0588	2.73	0.0302	0.00864	0.0191	0.0178	0.141	2.37
Phosphorus	mg/L	-	<0.250	<0.250	<0.250	<0.150	<0.100	<0.050	0.091	<0.050	<0.050	<0.250	<0.050	0.226	<0.050	<0.050	<0.050	<0.250
Potassium	mg/L	-	12.3	18.9	19.8	10.2	9.61	5.66	7.65	2.63	6.15	13.9	6.12	4.86	5.42	5.13	5.71	11.7
Selenium	mg/L	0.001	<0.005	<0.01	<0.01	<0.001	<0.0005	0.00037	<0.001	0.00014	<0.0002	<0.01	<0.0002	0.0002	<0.0001	<0.0001	<0.0005	<0.005
Sodium	mg/L		60.2	70.2	71.4	33.6	65.2	22.1	15.2	27.4	13.4	49.7	18.1	9.84	10.2	9.29	11.2	38.8
Silicon	mg/L	-	12.5	14.1	14.9	11.3	11.9	6.19	17.8	6.14	15	11.8	14.8	13.3	13.1	12.5	14	12.6
Silver	mg/L	0.0001	<0.0005	<0.001	<0.001	<0.0001	<0.00005	<0.00002	<0.0001	<0.00001	0.00007	<0.001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00005	<0.0005
Strontium	mg/L	-	2.6	2.49	2.72	2.33	1.9	0.587	1.03	0.348	1.01	2.22	1.48	0.713	0.974	0.706	0.597	2.6
Sulfur	mg/L	-	2730	4020	3910	1530	1200	662	636	62.8	355	2780	432	91.4	232	134	194	2250
Thallium	mg/L	0.0008	<0.0005	<0.001	<0.001	<0.0001	0.000051	<0.00002	<0.0001	<0.00001	0.000036	<0.001	<0.00002	<0.00001	<0.00001	<0.00001	<0.00005	<0.0005
Tin	mg/L	-	<0.005	<0.01	<0.01	<0.001	<0.0005	<0.0002	<0.001	<0.0001	<0.0002	<0.01	<0.0002	<0.0001	<0.0001	<0.0001	<0.0005	<0.005
Titanium	mg/L	-	<0.5	<1	<1	<0.1	<0.05	<0.02	<0.1	<0.01	0.038	<1	<0.02	<0.01	<0.01	<0.01	<0.05	<0.5
Uranium	mg/L	0.015	0.0029	0.0017	0.0019	0.0167	0.0121	0.025	0.00361	0.00183	0.00455	<0.001	0.000589	0.00162	0.00231	0.00188	0.00182	0.00352
Vanadium	mg/L	-	<0.05	<0.1	<0.1	<0.01	<0.005	<0.002	<0.01	<0.001	0.0023	<0.1	<0.002	<0.001	<0.001	<0.001	<0.005	<0.05
Zinc	mg/L	0.03	391	909	1010	77.6	15.8	<0.006	63.8	0.0233	6.58	609	2.35	0.239	1.57	0.983	21.5	378
Zirconium	mg/L	-	<0.04	<0.08	<0.08	<0.008	<0.004	<0.0016	<0.008	<0.0008	<0.0016	<0.08	<0.0016	<0.0008	<0.0008	<0.0008	<0.004	<0.04

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	S-Wells Area										NFRS Near S-Wells Area					Upstream of Tailings	
		Location ID:	SRK05-SP-5	SRK05-SP-6	SRK08-SBR1	SRK08-SBR2	SRK08-SBR3	SRK08-SBR4	SRK08-SP-7A	SRK08-SP-7B	SRK08-SP-8A	SRK08-SP-8B	MW14-08	MW14-09	MW14-10	MW14-11	SRK05-SP-2	TH86-2	TH86-5
		Date Sampled:	09/09/2014	09/09/2014	11/09/2014	11/09/2014	11/09/2014	10/09/2014	09/09/2014	09/09/2014	10/09/2014	10/09/2014	10/09/2014	11/09/2014	11/09/2014	11/09/2014	11/09/2014	16/09/2014	16/09/2014
Parameter	Units	CCME FAL ^{3,4}																	
Lab's Sample ID		-	L1516957-8			L1518297-13	L1518297-14	L1516957-28	L1516957-10	L1516957-9	L1516957-23	L1516957-22	L1516957-32	L1518297-16	L1518297-17	L1516957-31	L1518297-18	L1519343-4	L1519343-5
Physical Tests																			
Conductivity	uS/cm	-	10100	-	-	3530	3340	8790	830	271	2640	2560	485	720	1040	669	513	245	827
Hardness, Total (CaCO3)	mg/L	-	8640	-	-	2590	2510	7480	442	131	1830	1830	267	374	325	400	270	134	447
pH	pH Units	6.5-9 ⁵	6.67	-	-	6.63	7.39	6.59	7.34	7.91	6.48	6.7	7.81	7.29	8.06	7.87	7.28	7.65	7.12
Total Suspended Solids	mg/L	See guideline ⁶	23	-	-	579	20	5.4	6.6	2.8	4.8	3.8	460	16.6	39.2	27.2	<1.000	5.6	68.7
Anions and Nutrients																			
Acidity (as CaCO3)	mg/L	-	1170000	-	-	299000	74700	843000	61900	15900	176000	130000	21500	21300	4700	23300	32300	4100	47300
Alkalinity, Total	mg/L	-	179	-	-	284	765	148	126	85	381	322	256	249	372	385	131	114	473
Anion Sum	mEq/L	-	227	-	-	58.3	53.7	190	10.1	3	41.5	40.8	5.62	8.67	12.4	8.03	5.75	2.7	9.69
Cation - Anion Balance	%	-	-4.9	-	-	-0.2	-1.1	-4.5	-0.7	1.8	-1.9	-1.4	7	1.9	0.5	3.6	1.7	2	3.3
Cation Sum	mEq/L	-	206	-	-	58.1	52.6	174	9.99	3.11	40	39.7	6.47	9.01	12.6	8.63	5.95	2.81	10.3
Chloride	mg/L	-	26	-	-	<10.000	<10.000	<25.000	<2.500	<0.500	<10.000	<10.000	<0.500	1.39	<5.000	0.69	<0.500	<0.500	<2.500
Sulfate (SO4)	mg/L	-	10700	-	-	2530	1850	9000	366	62.4	1630	1650	23.6	175	240	15.2	150	20.2	11.1
Dissolved Metals																			
Aluminum	mg/L	0.005-0.1 ⁷	<0.1	-	-	0.028	0.0022	<0.05	0.0054	0.0197	0.0047	0.013	0.0154	0.0126	0.0035	0.0039	0.0084	0.0012	0.0017
Antimony	mg/L	-	<0.01	-	-	<0.002	<0.0002	<0.005	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	0.00013	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.005	<0.01	-	-	<0.002	<0.0002	<0.005	0.0042	0.00307	0.00968	0.00451	0.00384	0.00157	0.00027	0.00566	<0.0001	0.00016	0.0155
Barium	mg/L	-	0.0174	-	-	0.0223	0.0126	0.0149	0.0167	0.0638	0.0126	0.0138	0.214	0.0563	0.0399	0.132	0.0849	0.0657	0.191
Beryllium	mg/L	-	<0.01	-	-	<0.002	<0.0002	<0.005	0.00024	<0.0001	0.00046	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bismuth	mg/L	-	<0.05	-	-	<0.01	<0.001	<0.025	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L	1.5	<1	-	-	<0.2	<0.02	<0.5	<0.01	<0.01	<0.02	<0.02	<0.01	0.017	<0.01	0.021	<0.01	<0.01	<0.01
Cadmium	mg/L	0.00004-0.00037 ⁸	0.354	-	-	0.0648	<0.00002	0.142	0.000026	<0.00001	<0.00002	0.000058	<0.00001	0.000081	0.000045	<0.00001	0.000208	0.000011	<0.00001
Calcium	mg/L	-	450	-	-	316	416	451	108	14.6	416	363	86.5	96.6	90.6	79.5	77.1	41.1	137
Chromium	mg/L	0.001	<0.01	-	-	<0.002	<0.0002	<0.005	<0.0001	0.00034	0.00025	<0.0002	0.00018	0.00011	0.00095	0.00016	<0.0001	<0.0001	0.00056
Cobalt	mg/L	-	2.47	-	-	0.311	0.00093	1.88	0.00536	0.00105	0.00804	0.00847	0.00149	0.00469	0.00016	0.00242	0.00749	<0.0001	0.00035
Copper	mg/L	0.002-0.004 ⁹	<0.02	-	-	<0.004	0.00049	0.01	<0.0002	0.00043	<0.0004	<0.0004	<0.0002	0.00093	0.00077	<0.0002	0.00088	0.00037	<0.0002
Iron	mg/L	0.3	0.464	-	-	14.9	0.026	1.79	12.3	3.46	35.2	31.7	9.97	0.634	<0.01	6.04	0.013	0.161	6.89
Lead	mg/L	0.001-0.007 ¹⁰	<0.005	-	-	0.007	<0.0001	<0.0025	<0.00005	0.000057	<0.0001	<0.0001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Lithium	mg/L	-	0.191	-	-	0.079	0.0788	0.22	0.0393	0.0183	0.114	0.0729	0.00638	0.0128	0.0243	0.0113	0.012	0.00264	0.0567
Magnesium	mg/L	-	1830	-	-	439	358	1540	41.6	23.1	193	225	12.5	32.3	23.9	48.9	18.9	7.61	25.6
Manganese	mg/L	-	169	-	-	31.4	0.0157	118	1.12	1.55	3.03	6.52	2.58	2.1	0.0171	0.95	1.9	0.00642	0.499
Mercury	mg/L	0.000026	<0.00001	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	0.073	<0.005	-	-	<0.001	<0.0001	<0.0025	0.000109	0.000318	0.00018	0.00019	0.000223	0.00163	0.000879	0.00272	0.000123	0.00103	0.0034
Nickel	mg/L	0.025-0.150 ¹¹	3.71	-	-	0.636	0.0339	2.72	0.0132	0.00827	0.0249	0.0183	0.0006	0.0108	0.00122	0.00305	0.00681	0.00076	0.00269
Phosphorus	mg/L	-	<0.250	-	-	<0.050	<0.050	<0.250	<0.050	<0.050	<0.050	<0.050	0.139	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	-	16.7	-	-	7.74	7.88	16	3.79	1.98	5.77	5.59	1.42	2.9	4.11	3.1	2.05	1.26	2.61
Selenium	mg/L	0.001	<0.01	-	-	<0.002	0.0008	<0.005	<0.0001	<0.0001	<0.0002	<0.0002	0.00019	0.0002	0.00309	0.00015	<0.0001	0.0003	<0.0001
Silicon	mg/L	-	13.7	-	-	13.7	4.88	12.5	11.4	8.09	14.2	13.3	8.2	7.22	5.39	7.19	7.06	4.24	9.96
Silver	mg/L	0.0001	<0.001	-	-	<0.0002	<0.00002	<0.0005	<0.00001	<0.00001	<0.00002	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Sodium	mg/L	-	62.5	-	-	19.9	51.1	69.7	8.07	2.78	27	21.3	10.5	31	137	4.64	9.86	2.23	22.2
Strontium	mg/L	-	2.18	-	-	1.19	1.15	2.17	0.44	0.117	1.89	1.36	0.373	0.458	0.483	0.533	0.331	0.183	0.906
Sulfur	mg/L	-	3230	-	-	821	578	2700	119	20.6	492	499	8.81	58.8	79	5.92	50.7	6.95	8.13
Thallium	mg/L	0.0008	<0.001	-	-	<0.0002	0.000072	<0.0005	<0.00001	<0.00001	<0.00002	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Tin	mg/L	-	<0.01	-	-	<0.002	<0.0002	<0.005	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Titanium	mg/L	-	<1	-	-	<0.2	<0.02	<0.5	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Uranium	mg/L	0.015	0.0023	-	-	0.00202	0.0382	0.00141	0.000323	0.000148	0.00183	0.00323	0.000919	0.00701	0.0202	0.00326	0.00131	0.00266	0.00288
Vanadium	mg/L	-	<0.1	-	-	<0.02	<0.002	<0.05	<0.001	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.03	787	-	-	106	0.0692	543	0.423	2.17	0.458	0.632	0.0029	0.0727	<0.001	0.0053	0.194	0.0026	<0.001
Zirconium	mg/L	-	<0.08	-	-	<0.016	<0.0016	<0.04	<0.0008	<0.0008	<0.0016	<0.0016	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	S-Wells Area										NFRS Near S-Wells Area					Upstream of Tailings	
		Location ID:	SRK05-SP-5	SRK05-SP-6	SRK08-SBR1	SRK08-SBR2	SRK08-SBR3	SRK08-SBR4	SRK08-SP-7A	SRK08-SP-7B	SRK08-SP-8A	SRK08-SP-8B	MW14-08	MW14-09	MW14-10	MW14-11	SRK05-SP-2	TH86-2	TH86-5
		Date Sampled:	09/09/2014	09/09/2014	11/09/2014	11/09/2014	11/09/2014	10/09/2014	09/09/2014	09/09/2014	10/09/2014	10/09/2014	10/09/2014	11/09/2014	11/09/2014	11/09/2014	10/09/2014	16/09/2014	16/09/2014
Parameter	Units	CCME FAL ^{3,4}																	
Total Metals																			
Aluminum	mg/L	0.005-0.1 ⁷	0.49	-	-	8.87	0.39	<0.15	0.106	0.045	0.051	0.0321	7.05	0.564	1.53	0.277	0.0187	0.0124	0.24
Antimony	mg/L	-	<0.01	-	-	0.0021	<0.0002	<0.005	<0.0001	<0.0001	<0.0002	<0.0002	0.00033	0.00013	0.0002	0.00011	<0.0001	0.00011	0.00688
Arsenic	mg/L	0.005	<0.01	-	-	0.0288	0.00039	<0.005	0.00499	0.00398	0.0103	0.00456	0.00851	0.0021	0.00112	0.00679	<0.0001	0.00089	0.112
Barium	mg/L	-	0.0254	-	-	0.174	0.0213	0.0151	0.0173	0.0629	0.013	0.0147	0.364	0.0653	0.0602	0.137	0.0867	0.0681	0.187
Beryllium	mg/L	-	<0.01	-	-	<0.002	<0.0002	<0.005	0.00025	<0.0001	0.00046	0.00022	0.00037	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Bismuth	mg/L	-	<0.05	-	-	<0.01	<0.001	<0.025	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L	1.5	<1	-	-	<0.2	<0.02	<0.5	<0.01	<0.01	<0.02	<0.02	<0.01	0.023	0.012	0.023	<0.01	<0.01	0.01
Cadmium	mg/L	0.00004-0.00037 ⁸	0.4	-	-	0.066	<0.00002	0.146	0.000038	<0.00001	<0.00002	0.000056	0.000309	0.000129	0.000087	0.000015	0.000205	0.000029	0.000053
Calcium	mg/L	-	428	-	-	308	416	449	112	14.4	425	358	88.3	94.5	85.8	75.9	75.4	40.6	130
Chromium	mg/L	0.001	<0.01	-	-	0.0366	0.00165	<0.005	0.00059	0.00051	0.00042	0.00022	0.0141	0.00126	0.00441	0.00097	0.00011	0.00152	0.206
Cobalt	mg/L	-	2.68	-	-	0.312	0.00243	1.93	0.00549	0.00105	0.00819	0.00873	0.00721	0.0053	0.00129	0.00248	0.00779	0.00013	0.011
Copper	mg/L	0.002-0.004 ⁹	<0.05	-	-	0.062	0.0017	<0.025	<0.0005	0.00071	<0.001	<0.001	0.0117	0.00256	0.00387	0.00138	0.00098	0.00507	0.503
Iron	mg/L	0.3	1.38	-	-	49.4	1.27	2.07	13.4	3.7	37.1	31.7	22.3	1.49	2.16	6.91	0.034	3.27	35.7
Lead	mg/L	0.001-0.007 ¹⁰	<0.005	-	-	0.354	0.00069	<0.0025	0.000269	0.000243	0.00016	0.0001	0.0326	0.00124	0.00102	0.000546	0.000055	0.000125	0.00211
Lithium	mg/L	-	0.209	-	-	0.09	0.0798	0.23	0.0398	0.0185	0.115	0.0755	0.0177	0.0137	0.0251	0.0113	0.0124	0.00269	0.055
Magnesium	mg/L	-	1770	-	-	413	355	1570	40.8	23.1	198	225	15.4	32.1	22.2	48.4	18.7	7.57	24.6
Manganese	mg/L	-	184	-	-	31.2	0.0352	120	1.11	1.59	3.05	6.68	2.74	2.09	0.0384	0.922	1.97	0.0151	0.602
Mercury	mg/L	0.000026	<0.00001	-	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000023	<0.00001	0.000018	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	0.073	<0.005	-	-	0.002	0.00012	<0.0025	0.000144	0.000366	0.00016	0.00024	0.000543	0.00191	0.000944	0.00257	0.00014	0.00147	0.0742
Nickel	mg/L	0.025-0.150 ¹¹	4.05	-	-	0.663	0.0367	2.79	0.0137	0.00808	0.025	0.0189	0.0149	0.0134	0.00501	0.0036	0.00695	0.00218	0.128
Phosphorus	mg/L	-	<0.250	-	-	0.384	<0.050	<0.250	<0.050	<0.050	<0.050	<0.050	0.481	<0.050	<0.050	0.071	<0.050	<0.050	<0.050
Potassium	mg/L	-	16.2	-	-	9.21	7.57	16.4	4.18	2	6.45	5.64	2.69	3	4.05	3.1	2.05	1.27	2.56
Selenium	mg/L	0.001	<0.01	-	-	<0.002	0.00074	<0.005	<0.0001	0.00011	<0.0002	<0.0002	0.00034	0.00023	0.00265	0.00017	<0.0001	0.00033	<0.0001
Sodium	mg/L		68.6	-	-	20.1	52.8	71	8.05	2.8	27.8	22.2	10.9	33.1	133	4.45	10.2	2.34	21.9
Silicon	mg/L	-	13.7	-	-	29.1	5.62	12.7	12.2	8.03	15.1	13.6	18.5	7.96	7.48	7.64	7.03	4.4	10.1
Silver	mg/L	0.0001	<0.001	-	-	0.00545	0.000321	<0.0005	<0.00001	0.000022	<0.00002	<0.00002	0.000138	0.000016	0.000019	<0.00001	<0.00001	<0.00001	0.00024
Strontium	mg/L	-	2.25	-	-	1.18	1.19	2.23	0.438	0.125	1.94	1.45	0.386	0.456	0.484	0.542	0.345	0.186	0.899
Sulfur	mg/L	-	3130	-	-	787	594	2740	118	20.7	528	512	7.99	58.6	77.5	5.41	50.2	6.97	12.3
Thallium	mg/L	0.0008	<0.001	-	-	<0.0002	0.000081	<0.0005	<0.00001	<0.00001	<0.00002	<0.00002	0.00013	0.000019	0.000027	<0.00001	<0.00001	<0.00001	<0.00001
Tin	mg/L	-	<0.01	-	-	<0.002	<0.0002	<0.005	<0.0001	<0.0001	<0.0002	<0.0002	0.00035	0.00017	0.0001	0.00026	<0.0001	0.00024	0.0278
Titanium	mg/L	-	<1	-	-	0.33	<0.02	<0.5	<0.01	<0.01	<0.02	<0.02	0.253	0.036	0.051	0.011	<0.01	<0.01	0.021
Uranium	mg/L	0.015	0.0025	-	-	0.00342	0.0403	0.00141	0.000356	0.00017	0.00187	0.0034	0.0023	0.00762	0.0203	0.00314	0.00137	0.00283	0.0122
Vanadium	mg/L	-	<0.1	-	-	0.024	<0.002	<0.05	<0.001	<0.001	<0.002	<0.002	0.0183	0.0018	0.004	<0.001	<0.001	<0.001	0.0021
Zinc	mg/L	0.03	854	-	-	106	0.0844	550	0.423	2.06	0.464	0.655	0.0846	0.0859	0.0103	0.011	0.193	0.0053	0.0201
Zirconium	mg/L	-	<0.08	-	-	<0.016	<0.0016	<0.04	<0.0008	<0.0008	<0.0016	<0.0016	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	Vangorda/Grum Area															
		Location ID:	BH05-9B-R	P09-GS1A	P09-GS1B	P09-LCD1	P09-LCD4	P09-LCD6	P09-VC1	P09-VC2	P2001-02A	P2001-02B	P2001-3	P96-9A	SRK05-07	SRK05-08	SRK05-5C	SRK05-9
		Date Sampled:	12/09/2014	14/09/2014	14/09/2014	13/09/2014	15/09/2014	13/09/2014	12/09/2014	12/09/2014	13/09/2014	11/09/2014	11/09/2014	12/09/2014	12/09/2014	12/09/2014	12/09/2014	13/09/2014
Parameter	Units	CCME FAL ^{3,4}																
Lab's Sample ID		-	L1518297-27	L1518297-68	L1518297-69	L1518297-59	L1519343-8	L1518297-58	L1518297-31	L1518297-30	L1518297-50	L1518297-21	L1518297-25	L1518297-28	L1518297-29	L1518297-32	L1518297-26	L1518297-51
Physical Tests																		
Conductivity	uS/cm	-	599	1200	1530	907	859	980	345	390	2930	2900	936	3140	3230	2610	647	2110
Hardness, Total (CaCO3)	mg/L	-	226	739	976	536	333	610	151	212	2170	2150	507	2540	2610	1920	332	1430
pH	pH Units	6.5-9 ⁵	8.19	7.54	7.64	7.86	7.94	7.74	8.19	8.02	7.55	7.32	8.12	7.83	7.61	7.6	8.1	7.99
Total Suspended Solids	mg/L	See guideline ⁶	8.6	4	9.6	12.4	126	34.7	23	7.4	42.8	23.2	107	<1.000	<1.000	1	15.6	67.4
Anions and Nutrients																		
Acidity (as CaCO3)	mg/L	-	1800	20900	16400	8900	7700	11400	1600	3800	58200	72900	4900	28600	54800	41800	3200	11700
Alkalinity, Total	mg/L	-	147	265	256	295	358	268	133	175	756	741	450	569	692	605	169	400
Anion Sum	mEq/L	-	6.46	15.5	20.7	11.1	8.79	12.3	3.72	4.36	47.3	46.1	11.6	51	53.6	41.2	7.32	32.1
Cation - Anion Balance	%	-	1.4	0.2	-0.4	2.5	6	2.8	2.4	3.2	-3.4	-2.8	0.6	0.4	-0.7	-3	1.2	-4.8
Cation Sum	mEq/L	-	6.64	15.6	20.6	11.7	9.92	13	3.91	4.64	44.2	43.6	11.7	51.5	52.9	38.8	7.49	29.1
Chloride	mg/L	-	1.12	<5.000	<5.000	<5.000	<2.500	<5.000	<0.500	<0.500	<10.000	<10.000	<2.500	<10.000	<10.000	<10.000	<0.500	<10.000
Sulfate (SO4)	mg/L	-	168	491	750	253	78.9	333	51.3	41.1	1550	1500	124	1900	1910	1400	189	1160
Dissolved Metals																		
Aluminum	mg/L	0.005-0.1 ⁷	0.0015	0.0011	0.0016	<0.001	0.0027	<0.001	0.0015	0.0011	<0.002	<0.002	0.0019	0.004	<0.002	<0.002	0.0406	0.0025
Antimony	mg/L	-	<0.0001	0.0156	0.00042	0.00016	0.00073	<0.0001	<0.0001	0.00045	0.00026	<0.0002	<0.0001	<0.0002	0.00054	<0.0002	<0.0001	0.00029
Arsenic	mg/L	0.005	0.00593	0.123	1.7	0.104	0.00479	0.123	0.002	0.119	0.0157	0.0109	0.00274	0.00042	0.00322	0.00029	0.004	0.00087
Barium	mg/L	-	0.0145	0.0126	0.025	0.0403	0.0789	0.0455	0.0194	0.0415	0.0452	0.0125	0.0284	0.0541	0.0449	0.0117	0.0851	0.0553
Beryllium	mg/L	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001
Bismuth	mg/L	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.0005
Boron	mg/L	1.5	0.037	<0.01	0.013	0.013	0.014	0.011	<0.01	<0.01	<0.02	<0.02	0.022	<0.02	<0.02	<0.02	0.011	<0.01
Cadmium	mg/L	0.00004-0.00037 ⁸	0.000011	0.00173	0.000041	0.000039	0.000147	0.00002	<0.00001	<0.00001	<0.00002	<0.00002	0.000591	0.000683	0.000091	0.000029	0.000021	0.00025
Calcium	mg/L	-	51.9	175	239	144	92.1	161	45.9	64.8	455	446	97.1	393	487	399	87.8	272
Chromium	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	0.00016	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	0.00033	0.00045	0.00054	<0.0001	0.00039
Cobalt	mg/L	-	<0.0001	0.0597	0.0025	0.00053	0.00049	0.0012	<0.0001	0.00021	0.00042	0.00034	0.00059	<0.0002	0.00175	0.00039	0.00052	<0.0001
Copper	mg/L	0.002-0.004 ⁹	0.00031	<0.0002	<0.0002	<0.0002	0.00445	<0.0002	<0.0002	<0.0002	<0.0004	<0.0004	0.00172	0.00271	0.00097	0.00264	<0.0002	0.0021
Iron	mg/L	0.3	<0.01	1.03	4.63	4.75	<0.01	8.19	0.375	1.96	5.16	2.42	0.015	<0.01	<0.01	<0.01	0.125	<0.01
Lead	mg/L	0.001-0.007 ¹⁰	<0.00005	0.0439	<0.00005	0.025	0.000817	0.00851	<0.00005	0.000089	0.00018	<0.0001	<0.00005	<0.0001	0.00011	<0.0001	<0.00005	0.000546
Lithium	mg/L	-	0.0223	0.00976	0.0126	0.01	0.00717	0.00806	0.00337	0.00781	0.0357	0.0388	0.0101	0.0137	0.0104	0.0182	0.00839	0.00748
Magnesium	mg/L	-	23.5	73.2	91.8	43	24.9	50.3	8.93	12.3	252	251	64.4	378	339	223	27.5	183
Manganese	mg/L	-	0.00139	1.79	0.641	0.666	0.391	0.576	0.0115	0.0842	0.145	0.104	0.694	0.0484	0.0572	0.00018	0.961	0.000956
Mercury	mg/L	0.000026	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	0.073	0.0107	0.00197	0.00341	0.00489	0.00502	0.00227	0.000407	0.0101	0.00175	0.00047	0.0128	0.00072	0.00055	0.00042	0.0202	0.0015
Nickel	mg/L	0.025-0.150 ¹¹	<0.0005	0.138	0.0128	0.00071	0.00598	0.00125	<0.0005	<0.0005	0.0058	0.0029	0.00188	0.0139	0.0481	0.0018	0.00144	0.00161
Phosphorus	mg/L	-	<0.050	<0.050	0.071	<0.050	<0.050	0.061	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	-	1.9	4.23	2.61	2.93	1.97	2.52	0.98	1.13	5.59	5.23	3.16	6.19	2.76	1.91	1.81	3.8
Selenium	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	0.00023	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	0.00022	<0.0002	0.00032	<0.0001	0.00054
Silicon	mg/L	-	6.4	2.12	7.45	7.39	4.57	7.59	5.71	6.5	7.21	7	6.54	6.54	7.38	6.13	5.35	4.54
Silver	mg/L	0.0001	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00002	<0.00002	<0.00001	<0.00002	<0.00002	<0.00002	<0.00001	<0.00001
Sodium	mg/L	-	47.6	9.96	16.9	15.2	73.7	6.73	19.2	5.97	8.51	9.43	34.3	13.3	13.7	10.4	17.4	9.3
Strontium	mg/L	-	1.15	0.654	1.74	0.851	0.452	0.833	0.564	0.886	2.22	2.29	0.637	1.33	1.46	1.47	0.88	0.901
Sulfur	mg/L	-	58.4	168	255	90.4	46.2	115	17.2	13.9	482	469	42.3	620	600	432	65.2	345
Thallium	mg/L	0.0008	<0.00001	0.00562	0.000055	0.000012	0.000011	<0.00001	<0.00001	<0.00001	<0.00002	<0.00002	0.000011	<0.00002	<0.00002	<0.00002	0.00001	<0.00001
Tin	mg/L	-	<0.0001	<0.0001	<0.0001	<0.0001	0.00025	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001
Titanium	mg/L	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01
Uranium	mg/L	0.015	0.000925	0.0168	0.00207	0.00751	0.00316	0.00368	0.00588	0.00415	0.0733	0.0726	0.0121	0.0473	0.0341	0.0274	0.00239	0.0317
Vanadium	mg/L	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001
Zinc	mg/L	0.03	0.001	4.67	0.196	0.0065	0.011	0.0022	<0.001	0.0885	0.0032	0.0043	0.0052	0.0825	0.0043	<0.002	<0.001	0.0083
Zirconium	mg/L	-	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0016	<0.0016	<0.0008	<0.0016	<0.0016	<0.0016	<0.0008	<0.0008

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	Vangorda/Grum Area															
		Location ID:	BH05-9B-R	P09-GS1A	P09-GS1B	P09-LCD1	P09-LCD4	P09-LCD6	P09-VC1	P09-VC2	P2001-02A	P2001-02B	P2001-3	P96-9A	SRK05-07	SRK05-08	SRK05-5C	SRK05-9
		Date Sampled:	12/09/2014	14/09/2014	14/09/2014	13/09/2014	15/09/2014	13/09/2014	12/09/2014	12/09/2014	13/09/2014	11/09/2014	11/09/2014	12/09/2014	12/09/2014	12/09/2014	12/09/2014	13/09/2014
Parameter	Units	CCME FAL ^{3,4}																
Total Metals																		
Aluminum	mg/L	0.005-0.1 ⁷	0.192	0.0562	0.0286	0.0221	1.03	0.264	0.63	0.0832	0.713	0.464	2.66	0.0101	0.0311	0.0419	0.616	1.01
Antimony	mg/L	-	<0.0001	0.0183	0.00065	0.00025	0.00091	0.00012	<0.0001	0.0007	0.00037	<0.0002	0.00031	<0.0002	0.0006	<0.0002	0.00017	0.00048
Arsenic	mg/L	0.005	0.0319	0.131	1.8	0.106	0.00728	0.127	0.00256	0.125	0.0181	0.0135	0.0068	0.0011	0.00341	0.00042	0.00533	0.00579
Barium	mg/L	-	0.0211	0.0141	0.0264	0.0433	0.109	0.055	0.0249	0.0438	0.0647	0.0182	0.108	0.056	0.0471	0.0127	0.102	0.109
Beryllium	mg/L	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	0.00012	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001
Bismuth	mg/L	-	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.001	<0.0005	<0.001	<0.001	<0.001	<0.0005	<0.0005
Boron	mg/L	1.5	0.043	<0.01	0.015	0.015	0.016	0.015	<0.01	<0.01	<0.02	<0.02	0.026	<0.02	<0.02	<0.02	0.015	<0.01
Cadmium	mg/L	0.00004-0.00037 ⁸	0.000021	0.00219	0.000056	0.000045	0.000162	0.000033	0.000132	0.000017	0.000024	<0.00002	0.000792	0.00071	0.000109	0.000037	0.000124	0.000334
Calcium	mg/L	-	50.1	169	234	139	89.4	157	44.5	62.7	453	438	97.2	369	493	394	82.4	267
Chromium	mg/L	0.001	0.00059	0.00023	0.0001	0.00013	0.00321	0.00122	0.00071	0.00023	0.00214	0.00071	0.00779	0.00043	0.00085	0.00071	0.00189	0.00484
Cobalt	mg/L	-	0.00017	0.0621	0.00285	0.00055	0.0014	0.00154	0.00028	0.00031	0.00087	0.00045	0.00245	<0.0002	0.0023	0.00044	0.00102	0.0015
Copper	mg/L	0.002-0.004 ⁹	0.00114	0.00084	<0.0005	<0.0005	0.00695	0.00114	0.00143	0.00063	0.0019	0.001	0.0101	0.0029	0.0012	0.0029	0.00182	0.0103
Iron	mg/L	0.3	1.93	1.2	4.8	4.82	1.48	8.44	1.02	2.27	5.9	3.2	4.05	0.142	0.085	0.081	0.999	2.08
Lead	mg/L	0.001-0.007 ¹⁰	0.00734	0.079	0.000583	0.0304	0.0184	0.0162	0.00493	0.00669	0.00659	0.00388	0.00344	0.00039	0.00064	0.00045	0.00535	0.0347
Lithium	mg/L	-	0.0222	0.00981	0.0124	0.0103	0.00789	0.00871	0.00377	0.00813	0.0397	0.0379	0.0123	0.014	0.0108	0.0185	0.00903	0.00858
Magnesium	mg/L	-	23.2	72.5	93.6	42	25	50.9	8.83	12.3	261	255	65.1	330	332	221	25.4	196
Manganese	mg/L	-	0.0953	1.84	0.671	0.683	0.47	0.599	0.0188	0.0957	0.172	0.117	0.786	0.0535	0.0645	0.00172	0.997	0.0428
Mercury	mg/L	0.000026	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000022
Molybdenum	mg/L	0.073	0.0114	0.00211	0.00368	0.00521	0.00517	0.00246	0.000547	0.0109	0.0019	0.00049	0.0134	0.00091	0.00058	0.00047	0.0218	0.00163
Nickel	mg/L	0.025-0.150 ¹¹	0.00077	0.14	0.0135	0.00085	0.00881	0.00221	0.0009	0.00051	0.0079	0.0033	0.0103	0.0146	0.0541	0.0017	0.00345	0.00616
Phosphorus	mg/L	-	0.061	<0.050	0.083	0.051	<0.050	0.077	<0.050	<0.050	<0.050	<0.050	0.111	<0.050	<0.050	<0.050	<0.050	0.06
Potassium	mg/L	-	1.91	4.2	2.59	2.85	2.06	2.48	1.01	1.18	5.73	5.09	3.87	5.65	2.66	1.91	1.91	3.89
Selenium	mg/L	0.001	<0.0001	<0.0001	<0.0001	<0.0001	0.00019	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	0.00013	<0.0002	<0.0002	0.00031	<0.0001	0.00052
Sodium	mg/L		47.5	10.4	17.7	15.3	76.1	7.02	19.2	6.16	9.2	9.25	33.3	14.1	14.5	10.7	18.6	9.57
Silicon	mg/L	-	6.94	2.17	7.42	7.33	6.01	7.91	7.09	6.71	8.58	8.02	12.4	6	7.37	6.19	6.47	5.97
Silver	mg/L	0.0001	0.000017	0.000025	<0.00001	0.000027	0.000033	<0.00001	0.000147	<0.00001	0.000021	<0.00002	0.00005	<0.00002	<0.00002	<0.00002	0.000017	0.0001
Strontium	mg/L	-	1.18	0.659	1.76	0.873	0.438	0.84	0.582	0.928	2.33	2.28	0.654	1.37	1.52	1.51	0.866	0.921
Sulfur	mg/L	-	58.7	170	258	89.3	46	121	17.5	14	501	465	42.2	602	615	430	61.1	367
Thallium	mg/L	0.0008	<0.00001	0.00573	0.000056	0.000018	0.000024	<0.00001	<0.00001	<0.00001	<0.00002	<0.00002	0.000046	<0.00002	<0.00002	<0.00002	0.000023	0.000035
Tin	mg/L	-	0.0002	<0.0001	<0.0001	<0.0001	0.00031	<0.0001	0.00026	<0.0001	0.00021	0.00053	0.00022	<0.0002	<0.0002	<0.0002	<0.0001	0.00039
Titanium	mg/L	-	<0.01	<0.01	<0.01	<0.01	0.024	0.026	<0.01	<0.01	<0.02	<0.02	0.079	<0.02	<0.02	<0.02	0.012	0.026
Uranium	mg/L	0.015	0.000961	0.0175	0.00213	0.00777	0.00337	0.00362	0.00622	0.00446	0.0771	0.0716	0.0127	0.049	0.0356	0.0279	0.00241	0.0321
Vanadium	mg/L	-	<0.001	<0.001	<0.001	<0.001	0.0025	<0.001	0.0013	<0.001	0.0024	<0.002	0.0089	<0.002	<0.002	<0.002	0.0015	0.0029
Zinc	mg/L	0.03	0.0066	4.75	0.205	0.0087	0.0221	0.0066	0.049	0.0986	0.0114	0.0075	0.0282	0.0876	<0.006	<0.006	0.0087	0.0252
Zirconium	mg/L	-	<0.0008	<0.0008	<0.0008	<0.0008	0.00091	<0.0008	<0.0008	<0.0008	<0.0016	<0.0016	0.00147	<0.0016	<0.0016	<0.0016	<0.0008	<0.0008

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	Vangorda/Grum Area							Zone 2 Outwash/Pit							
		Location ID:	SRK08-P14	SRK08-P15	SRK08-P16	V34	V35	V36	V37	BH10A	BH10B	BH5	BH6	BH8	P05-04	SRK08-P12A	SRK08-P12B
		Date Sampled:	14/09/2014	14/09/2014	15/10/2014	11/09/2014	11/09/2014	11/09/2014	13/09/2014	12/09/2014	12/09/2014	12/09/2014	12/09/2014	13/09/2014	12/09/2014	12/09/2014	12/09/2014
Parameter	Units	CCME FAL ^{3,4}															
Lab's Sample ID		-	L1518297-66	L1518297-67		L1518297-22	L1518297-23	L1518297-24	L1518297-56	L1518297-40	L1518297-41	L1518297-37	L1518297-43	L1518297-49	L1518297-42	L1518297-38	L1518297-39
Physical Tests																	
Conductivity	uS/cm	-	1960	2010	-	2080	2630	3250	1180	452	410	681	519	3320	554	1250	857
Hardness, Total (CaCO3)	mg/L	-	1360	1430	-	1450	1920	2460	714	251	220	324	254	1540	310	727	477
pH	pH Units	6.5-9 ⁵	7.67	7.81	-	7.53	7.57	7.69	8.1	7.12	7.18	6.66	6.81	5.13	6.93	6.53	6.31
Total Suspended Solids	mg/L	See guideline ⁶	6.6	1.6	-	10.2	2.6	14	74.4	3.6	57.2	3	7	98.7	<1.000	83.4	6.8
Anions and Nutrients					-												
Acidity (as CaCO3)	mg/L	-	18400	16800	-	58100	47400	43000	6200	33900	34100	210000	67800	991000	49400	220000	210000
Alkalinity, Total	mg/L	-	280	361	-	928	544	622	473	161	155	258	107	<1.000	155	647	415
Anion Sum	mEq/L	-	27.2	27.9	-	30.1	40.8	54.2	14.9	5.02	4.55	7.81	5.7	57.7	6.22	16.5	10.5
Cation - Anion Balance	%	-	0.5	1.8	-	-1	-2.6	-4.4	1.6	2.6	1.7	4.5	1.7	4.6	2.7	0.6	0.8
Cation Sum	mEq/L	-	27.5	28.9	-	29.5	38.8	49.6	15.4	5.29	4.71	8.55	5.9	63.3	6.57	16.7	10.7
Chloride	mg/L	-	<5.000	<5.000	-	<5.000	<10.000	<10.000	<5.000	<0.500	<0.500	0.61	<0.500	<10.000	<0.500	<5.000	<2.500
Sulfate (SO4)	mg/L	-	1040	996	-	553	1440	2010	261	86.3	69.5	127	171	2770	150	170	107
Dissolved Metals					-												
Aluminum	mg/L	0.005-0.1 ⁷	<0.002	<0.002	-	0.0035	<0.002	<0.002	0.0016	0.0034	0.0496	0.0455	0.0271	1.58	0.0666	0.0211	0.0352
Antimony	mg/L	-	0.0002	0.00023	-	<0.0001	0.00025	<0.0002	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.0001	0.00032	<0.0001
Arsenic	mg/L	0.005	0.00021	0.00024	-	0.00175	0.00052	0.00174	0.00139	<0.0001	<0.0001	0.00048	<0.0001	<0.002	<0.0001	0.00415	0.00016
Barium	mg/L	-	0.0557	0.0384	-	0.042	0.0103	0.00693	0.0628	0.0225	0.0122	0.0432	0.0265	0.0096	0.0348	0.033	0.121
Beryllium	mg/L	-	<0.0002	<0.0002	-	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	0.00032	<0.0001	0.0026	<0.0001	0.00075	0.00055
Bismuth	mg/L	-	<0.001	<0.001	-	<0.0005	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.01	<0.0005	<0.0005	<0.0005
Boron	mg/L	1.5	<0.02	<0.02	-	0.021	<0.02	<0.02	0.036	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01	<0.01	<0.01
Cadmium	mg/L	0.00004-0.00037 ⁸	0.000049	0.000091	-	<0.00001	0.000113	0.000495	<0.00001	0.00443	0.00149	0.00102	0.00203	0.477	0.00422	0.000027	0.00007
Calcium	mg/L	-	381	350	-	212	412	457	96.2	72.5	61.5	80.7	70.8	276	87.5	198	133
Chromium	mg/L	0.001	<0.0002	0.00093	-	<0.0001	0.00072	<0.0002	<0.0001	<0.0001	<0.0001	0.00024	<0.0001	<0.002	<0.0001	<0.0001	<0.0001
Cobalt	mg/L	-	<0.0002	<0.0002	-	0.00201	<0.0002	0.00198	0.0004	<0.0001	0.00015	0.0179	0.0464	0.459	0.0012	0.00809	0.00396
Copper	mg/L	0.002-0.004 ⁹	0.00365	0.00088	-	<0.0002	0.00051	0.00233	<0.0002	0.00166	0.00131	0.00035	<0.0002	1.43	0.00073	<0.0002	<0.0002
Iron	mg/L	0.3	<0.01	<0.01	-	1.85	<0.01	<0.01	0.091	<0.01	<0.01	23.2	5.24	489	<0.01	14.7	4.02
Lead	mg/L	0.001-0.007 ¹⁰	<0.0001	0.00017	-	<0.00005	<0.0001	0.00264	<0.00005	0.000164	0.00348	0.000504	0.000893	0.22	<0.00005	0.000695	0.000101
Lithium	mg/L	-	0.0086	0.0114	-	0.0264	0.0223	0.0444	0.0279	0.00938	0.013	0.0364	0.0282	0.084	0.0137	0.104	0.0952
Magnesium	mg/L	-	100	136	-	223	216	319	115	16.9	16.1	29.9	18.8	206	22.3	56.2	35.3
Manganese	mg/L	-	0.00021	0.00013	-	0.0609	0.00112	0.118	0.129	0.000271	0.0031	1.86	1.62	9.75	0.0203	0.882	0.702
Mercury	mg/L	0.000026	<0.00001	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	0.073	0.00086	0.00065	-	0.00133	0.00102	0.00122	0.0219	<0.00005	<0.00005	<0.00005	0.000075	<0.001	0.000053	<0.00005	<0.00005
Nickel	mg/L	0.025-0.150 ¹¹	0.0012	0.012	-	0.0047	0.0043	0.0147	0.00127	0.00245	0.0045	0.0239	0.0504	0.441	0.0168	0.0146	0.00756
Phosphorus	mg/L	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	-	1.23	2.1	-	4.58	3.86	5.68	5.68	1.36	1.56	3.47	2.14	7.24	1.62	3.32	3.62
Selenium	mg/L	0.001	0.001	0.00151	-	<0.0001	0.00176	0.00059	<0.0001	0.00057	0.00029	<0.0001	<0.0001	<0.002	0.00036	<0.0001	<0.0001
Silicon	mg/L	-	5.9	5.75	-	6.72	5.82	7	3.31	6.32	5.54	11.9	7.86	4.75	6.42	10.4	10.3
Silver	mg/L	0.0001	<0.00002	<0.00002	-	<0.00001	<0.00002	<0.00002	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00002	<0.00001	<0.00001	<0.00001
Sodium	mg/L	-	5.29	5.18	-	8.07	8	9.32	22.2	5.15	5.52	13.1	5.95	21.9	5.93	27.7	18.4
Strontium	mg/L	-	1.7	1.07	-	1.66	0.981	2.07	0.686	0.328	0.264	0.387	0.333	1.13	0.404	1.21	0.878
Sulfur	mg/L	-	355	353	-	176	444	615	95	30.2	23.6	42.6	59.5	866	52.7	52.8	34.6
Thallium	mg/L	0.0008	<0.00002	<0.00002	-	<0.00001	0.000021	0.000084	<0.00001	0.000064	0.000249	0.000069	0.000054	0.00587	0.000012	0.000093	0.000048
Tin	mg/L	-	<0.0002	<0.0002	-	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.002	<0.0001	<0.0001	<0.0001
Titanium	mg/L	-	<0.02	<0.02	-	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01	<0.01	<0.01
Uranium	mg/L	0.015	0.00721	0.0235	-	0.0203	0.0727	0.0624	0.00312	0.000106	0.000065	0.000317	0.00111	0.00324	0.00161	0.00219	0.00117
Vanadium	mg/L	-	<0.002	<0.002	-	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.02	<0.001	<0.001	<0.001
Zinc	mg/L	0.03	0.0052	0.0042	-	0.0051	0.0062	0.08	0.0055	0.648	0.848	2.88	5.4	153	2.21	1.07	0.262
Zirconium	mg/L	-	<0.0016	<0.0016	-	0.00144	<0.0016	<0.0016	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	0.00124	<0.0008

Table 3-2: Groundwater Sampling Analytical Results and
CCME Guideline Exceedances for 2014 Fall Sampling Program

		Area	Vangorda/Grum Area							Zone 2 Outwash/Pit							
		Location ID:	SRK08-P14	SRK08-P15	SRK08-P16	V34	V35	V36	V37	BH10A	BH10B	BH5	BH6	BH8	P05-04	SRK08-P12A	SRK08-P12B
		Date Sampled:	14/09/2014	14/09/2014	15/10/2014	11/09/2014	11/09/2014	11/09/2014	13/09/2014	12/09/2014	12/09/2014	12/09/2014	12/09/2014	13/09/2014	12/09/2014	12/09/2014	12/09/2014
Parameter	Units	CCME FAL ^{3,4}															
Total Metals																	
Aluminum	mg/L	0.005-0.1 ⁷	0.355	0.0416	-	0.831	0.0595	0.259	1.46	0.0736	5.47	0.101	0.228	2.26	0.0933	1.76	0.175
Antimony	mg/L	-	0.00024	0.00024	-	0.0001	0.00028	0.00033	0.00032	<0.0001	0.0003	<0.0001	<0.0001	<0.002	<0.0001	0.00066	<0.0001
Arsenic	mg/L	0.005	0.00054	0.00033	-	0.00228	0.00053	0.00672	0.00315	0.00026	0.00308	0.00088	0.00033	0.002	<0.0001	0.00652	0.00035
Barium	mg/L	-	0.0634	0.0356	-	0.0572	0.0119	0.0148	0.115	0.0234	0.0559	0.0438	0.0302	0.0141	0.0359	0.0575	0.127
Beryllium	mg/L	-	<0.0002	<0.0002	-	<0.0001	<0.0002	<0.0002	<0.0001	<0.0001	0.00048	0.0003	0.00013	0.0028	<0.0001	0.001	0.00056
Bismuth	mg/L	-	<0.001	<0.001	-	<0.0005	<0.001	<0.001	<0.0005	<0.0005	0.00053	<0.0005	<0.0005	<0.01	<0.0005	<0.0005	<0.0005
Boron	mg/L	1.5	<0.02	<0.02	-	0.025	<0.02	0.022	0.04	<0.01	<0.01	<0.01	<0.01	<0.2	<0.01	0.011	<0.01
Cadmium	mg/L	0.00004-0.00037 ⁸	0.000058	0.000087	-	0.000033	0.000147	0.00052	0.000085	0.00454	0.0015	0.00103	0.00215	0.509	0.00411	0.000099	0.000092
Calcium	mg/L	-	382	340	-	217	417	457	95.4	70.8	58.7	81.3	73.3	270	84.1	197	136
Chromium	mg/L	0.001	0.00368	0.00166	-	0.00337	0.00108	0.00195	0.00457	0.00036	0.00278	0.00047	0.00069	<0.002	0.00017	0.00752	0.00055
Cobalt	mg/L	-	0.00053	0.0003	-	0.00265	<0.0002	0.0023	0.00125	0.00021	0.00098	0.0187	0.0486	0.49	0.00119	0.00974	0.00428
Copper	mg/L	0.002-0.004 ⁹	0.0068	0.0012	-	0.00209	0.0011	0.0037	0.00387	0.00223	0.0116	0.00081	0.00096	1.58	0.0009	0.00622	0.00065
Iron	mg/L	0.3	0.723	0.077	-	3.18	0.083	0.545	2.98	0.331	2.93	23.3	6.23	487	0.223	18.5	4.45
Lead	mg/L	0.001-0.007 ¹⁰	0.00109	0.00038	-	0.00105	0.00064	0.0114	0.00253	0.0023	0.143	0.00301	0.00635	0.501	0.00027	0.0166	0.00162
Lithium	mg/L	-	0.01	0.0119	-	0.0279	0.0232	0.0451	0.0292	0.00955	0.0144	0.0355	0.0288	0.092	0.0139	0.11	0.0968
Magnesium	mg/L	-	103	131	-	230	223	335	115	16.6	16	30.1	19.6	205	21.7	59.7	37
Manganese	mg/L	-	0.0103	0.00259	-	0.0815	0.00384	0.128	0.173	0.006	0.0242	1.92	1.69	10.4	0.0203	0.934	0.736
Mercury	mg/L	0.000026	<0.00001	<0.00001	-	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	0.000063	<0.00001	<0.00001	<0.00001	<0.00001	<0.00005	<0.00001
Molybdenum	mg/L	0.073	0.00104	0.0007	-	0.00158	0.00103	0.00135	0.0224	<0.00005	0.000164	0.000052	0.000153	<0.001	0.000062	0.000376	0.000059
Nickel	mg/L	0.025-0.150 ¹¹	0.0033	0.0111	-	0.00676	0.0047	0.0153	0.00438	0.00265	0.00606	0.0248	0.0528	0.469	0.0171	0.0232	0.00827
Phosphorus	mg/L	-	<0.050	<0.050	-	<0.050	<0.050	<0.050	0.129	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.11	<0.050
Potassium	mg/L	-	1.29	2.04	-	4.98	4.09	5.87	5.92	1.35	1.75	3.47	2.26	7.19	1.59	3.84	3.74
Selenium	mg/L	0.001	0.00115	0.00155	-	<0.0001	0.00176	0.00058	0.0001	0.00049	0.00034	<0.0001	<0.0001	<0.002	0.00032	<0.0001	<0.0001
Sodium	mg/L		5.67	4.82	-	8.57	8.24	9.28	22.4	5.24	5.37	13.4	6.09	23.3	6.01	28.4	19.3
Silicon	mg/L	-	6.82	5.74	-	8.51	6.16	7.6	5.79	6.4	7.9	12.1	8.54	4.88	6.32	13.8	10.8
Silver	mg/L	0.0001	<0.00002	<0.00002	-	0.000012	<0.00002	<0.00002	0.000037	<0.00001	0.00027	<0.00001	0.000016	<0.0002	<0.00001	0.000088	0.000011
Strontium	mg/L	-	1.85	1.11	-	1.75	1.02	2.15	0.702	0.336	0.271	0.401	0.349	1.2	0.419	1.27	0.93
Sulfur	mg/L	-	369	345	-	187	466	647	96.6	30.3	23.8	45	62.1	871	52	59.8	38.8
Thallium	mg/L	0.0008	<0.00002	<0.00002	-	0.00001	0.000022	0.000092	0.000021	0.000072	0.000358	0.000065	0.000065	0.00598	0.000012	0.00015	0.000059
Tin	mg/L	-	<0.0002	<0.0002	-	<0.0001	<0.0002	0.00027	0.00021	<0.0001	0.00014	<0.0001	<0.0001	<0.002	<0.0001	0.00022	<0.0001
Titanium	mg/L	-	<0.02	<0.02	-	0.017	<0.02	<0.02	0.045	<0.01	0.039	<0.01	0.011	<0.2	<0.01	0.079	<0.01
Uranium	mg/L	0.015	0.00801	0.024	-	0.0217	0.0761	0.064	0.00335	0.000132	0.000903	0.000347	0.0013	0.00488	0.00171	0.00254	0.00127
Vanadium	mg/L	-	<0.002	<0.002	-	0.0017	<0.002	<0.002	0.0052	<0.001	0.0027	<0.001	<0.001	<0.02	<0.001	0.0078	<0.001
Zinc	mg/L	0.03	0.01	<0.006	-	0.0101	0.0083	0.0845	0.0282	0.647	0.872	2.84	5.43	163	2.12	1.09	0.271
Zirconium	mg/L	-	<0.0016	<0.0016	-	0.00227	<0.0016	<0.0016	0.00089	<0.0008	<0.0008	<0.0008	<0.0008	<0.016	<0.0008	<0.0008	<0.0008

Table 3-3 Quality Assurance and Quality Control Analytical Results
for 2014 Fall Groundwater Sampling Program

		Location ID:	P01-01B			SRK08-SP-7B			P01-11			P96-7			V34			SRK05-SP-1B			SRK05-ETA-BR2		
		Sample ID:	P01-01B	DUP1	RPD (%) ¹²	SRK08-SP-7B	DUP2	RPD (%) ¹²	P01-11	DUP3	RPD (%) ¹²	P96-7	DUP4	RPD (%) ¹²	V34	DUP 5	RPD (%) ¹²	SRK05-SP-1B	DUP 6	RPD (%) ¹²	SRK05-ETA-BR2	DUP 7	RPD (%) ¹²
		Date Sampled:	09/09/2014			09/09/2014			10/09/2014			10/09/2014			11/09/2014			11/09/2014			13/09/2014		
Parameter	Unit	CCME FAL ^{3,4}																					
Lab's Sample ID		-	L1516957-19	L1516957-20	-	L1516957-9	L1516957-11	-	L1516957-42	L1516957-43	-	L1516957-24	L1516957-34	-	L1518297-22	L1518297-5	-	L1518297-15	L1518297-7	-	L1518297-55	L1518297-4	-
Physical Tests																							
Conductivity	uS/cm	-	1420	1410	0.7	271	269	0.7	3350	3360	0.3	2960	2980	0.7	2080	2110	1.4	1070	1080	0.9	2520	2590	2.7
Hardness, Total (CaCO3)	mg/L	-	902	883	2.1	131	137	4.5	2110	2480	16.1	2260	1930	15.8	1450	1540	6.0	646	643	0.5	1680	1740	3.5
pH	pH Units	6.5-9 ⁵	7.82	7.83	0.1	7.91	7.5	5.3	6.71	6.96	3.7	7.72	7.7	0.3	7.53	7.58	0.7	6.93	6.91	0.3	7.28	6.55	10.6
Total Suspended Solids	mg/L	See guideline ⁶	2.4	2	nc	2.8	3.6	nc	77.3	79.3	2.6	1.4	1.4	nc	10.2	10.4	1.9	10.6	8.4	23.2	56	40.8	31.4
Anions and Nutrients																							
Acidity (as CaCO3)	mg/L	-	13600	13100	3.7	15900	15900	0.0	137000	139000	1.4	16800	18800	11.2	58100	59200	1.9	102000	89400	13.2	46200	71600	43.1
Alkalinity, Total (CaCO3)	mg/L	-	318	318	0.0	85	83.9	1.3	445	439	1.4	231	231	0.0	928	929	0.1	378	379	0.3	124	138	10.7
Anion Sum	mEq/L	-	19.3	19.2	-	3	2.98	-	54.7	54.4	-	48.2	47.3	-	30.1	30.3	-	13.3	13.3	-	41.7	38.8	-
Cation - Anion Balance	%	-	-0.4	-0.9	-	1.8	4.3	-	-4.8	2.9	-	-2.1	-8.9	-	-1	1.6	-	3.3	3	-	-5.5	0	-
Cation Sum	mEq/L	-	19.1	18.9	-	3.11	3.24	-	49.7	57.6	-	46.2	39.6	-	29.5	31.3	-	14.2	14.2	-	37.3	38.7	-
Chloride	mg/L	-	<5.000	<5.000	nc	<0.500	<0.500	nc	<10.000	<10.000	nc	<10.000	<10.000	nc	<5.000	<10.000	nc	<5.000	<5.000	nc	10	<10.000	nc
Sulfate (SO4)	mg/L	-	620	617	0.5	62.4	62.4	0.0	2200	2190	0.5	2090	2050	1.9	553	565	2.1	277	277	0.0	1870	1730	7.8
Dissolved Metals																							
Aluminum	mg/L	0.005-0.1 ⁷	0.0012	0.0013	nc	0.0197	0.0192	nc	<0.005	<0.005	nc	<0.002	<0.002	nc	0.0035	0.0018	nc	0.0078	0.0082	5.0	<0.002	0.51	nc
Antimony	mg/L	-	<0.0001	<0.0001	nc	<0.0001	<0.0001	nc	<0.0005	<0.0005	nc	<0.0002	<0.0002	nc	<0.0001	<0.0001	nc	<0.0001	<0.0001	nc	<0.0002	<0.0002	nc
Arsenic	mg/L	0.005	0.00246	0.00198	21.6	0.00307	0.00307	0.0	0.0459	0.0456	0.7	<0.0002	<0.0002	nc	0.00175	0.00162	7.7	0.0224	0.022	1.8	0.00022	0.00033	40.0
Barium	mg/L	-	0.0556	0.0532	4.4	0.0638	0.0642	0.6	0.0282	0.0271	4.0	0.012	0.0118	1.7	0.042	0.0407	3.1	0.0469	0.0453	3.5	0.0353	0.0386	8.9
Beryllium	mg/L	-	<0.0001	<0.0001	nc	<0.0001	<0.0001	nc	<0.0005	<0.0005	nc	<0.0002	<0.0002	nc	<0.0001	<0.0001	nc	0.00015	0.00015	nc	<0.0002	<0.0002	nc
Bismuth	mg/L	-	<0.0005	<0.0005	nc	<0.0005	<0.0005	nc	<0.0025	<0.0025	nc	<0.001	<0.001	nc	<0.0005	<0.0005	nc	<0.0005	<0.0005	nc	<0.001	<0.001	nc
Boron	mg/L	1.5	0.012	<0.01	nc	<0.01	<0.01	nc	<0.05	<0.05	nc	<0.02	<0.02	nc	0.021	0.021	nc	0.01	0.011	nc	<0.02	<0.02	nc
Cadmium	mg/L	0.00004-0.00037 ⁸	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.000050	<0.000050	nc	0.000046	0.000047	nc	<0.00001	<0.00001	nc	0.000113	0.00011	2.7	0.000249	0.000579	79.7
Calcium	mg/L	-	270	266	1.5	14.6	15.1	3.4	623	720	14.4	516	453	13.0	212	213	0.5	157	157	0.0	499	523	4.7
Chromium	mg/L	0.001	<0.0001	<0.0001	nc	0.00034	0.00034	nc	<0.0005	<0.0005	nc	0.00048	0.00047	nc	<0.0001	<0.0001	nc	<0.0001	<0.0001	nc	<0.0002	<0.0002	nc
Cobalt	mg/L	-	0.00017	0.0002	nc	0.00105	0.00102	2.9	0.0138	0.0138	0.0	<0.0002	<0.0002	nc	0.00201	0.00183	9.4	0.00319	0.00313	1.9	0.0424	0.0479	12.2
Copper	mg/L	0.002-0.004 ⁹	<0.0002	<0.0002	nc	0.00043	0.00042	nc	<0.001	<0.001	nc	0.00043	0.00041	nc	<0.0002	<0.0002	nc	<0.0002	<0.0002	nc	<0.0004	<0.0004	nc
Iron	mg/L	0.3	0.702	0.685	2.5	3.46	3.61	4.2	70.2	82.7	16.4	<0.01	<0.01	nc	1.85	1.93	4.2	13.8	13.6	1.5	33.5	33	1.5
Lead	mg/L	0.001-0.007 ¹⁰	<0.00005	<0.00005	nc	0.000057	0.00005	nc	<0.00025	<0.00025	nc	<0.0001	<0.0001	nc	<0.00005	0.000085	nc	<0.00005	<0.00005	nc	0.00014	0.00404	186.6
Lithium	mg/L	-	0.0126	0.0102	21.1	0.0183	0.0182	0.5	0.0223	0.0231	3.5	0.0247	0.0301	19.7	0.0264	0.0273	3.4	0.0325	0.0334	2.7	0.0144	0.0143	0.7
Magnesium	mg/L	-	55.4	53.5	3.5	23.1	24.3	5.1	135	164	19.4	236	194	19.5	223	244	9.0	62	61.1	1.5	105	105	0.0
Manganese	mg/L	-	0.139	0.142	2.1	1.55	1.59	2.5	45.3	46.2	2.0	0.00062	0.00069	10.7	0.0609	0.0582	4.5	0.813	0.78	4.1	4.61	5.33	14.5
Mercury	mg/L	0.000026	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc
Molybdenum	mg/L	0.073	0.000803	0.000846	5.2	0.000318	0.000317	nc	0.00085	0.0008	nc	0.00088	0.0009	2.2	0.00133	0.00131	1.5	0.000554	0.000556	0.4	0.00011	0.00015	30.8
Nickel	mg/L	0.025-0.150 ¹¹	0.00061	0.00064	nc	0.00827	0.00806	2.6	0.0293	0.0295	0.7	<0.001	<0.001	nc	0.0047	0.00434	8.0	0.00837	0.00819	2.2	0.035	0.0402	13.8
Phosphorus	mg/L	-	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	0.172	0.171				

Table 3-3 Quality Assurance and Quality Control Analytical Results
for 2014 Fall Groundwater Sampling Program

		Location ID:	P01-01B			SRK08-SP-7B			P01-11			P96-7			V34			SRK05-SP-1B			SRK05-ETA-BR2		
		Sample ID:	P01-01B	DUP1	RPD (%) ¹²	SRK08-SP-7B	DUP2	RPD (%) ¹²	P01-11	DUP3	RPD (%) ¹²	P96-7	DUP4	RPD (%) ¹²	V34	DUP 5	RPD (%) ¹²	SRK05-SP-1B	DUP 6	RPD (%) ¹²	SRK05-ETA-BR2	DUP 7	RPD (%) ¹²
		Date Sampled:	09/09/2014			09/09/2014			10/09/2014			10/09/2014			11/09/2014			11/09/2014			13/09/2014		
Parameter	Unit	CCME FAL ^{3,4}																					
Lab's Sample ID		-	L1516957-19	L1516957-20	-	L1516957-9	L1516957-11	-	L1516957-42	L1516957-43	-	L1516957-24	L1516957-34	-	L1518297-22	L1518297-5	-	L1518297-15	L1518297-7	-	L1518297-55	L1518297-4	-
Total Metals																							
Aluminum	mg/L	0.005-0.1 ⁷	<0.003	<0.003	nc	0.045	0.0477	nc	0.659	0.695	nc	0.0132	0.0142	nc	0.831	0.839	1.0	0.142	0.148	4.1	0.332	<0.006	nc
Antimony	mg/L	-	<0.0001	<0.0001	nc	<0.0001	<0.0001	nc	<0.0005	<0.0005	nc	<0.0002	<0.0002	nc	0.0001	0.00013	nc	<0.0001	<0.0001	nc	<0.0002	<0.0002	nc
Arsenic	mg/L	0.005	0.0025	0.00214	15.5	0.00398	0.00413	3.7	0.0456	0.0467	2.4	<0.0002	<0.0002	nc	0.00228	0.0022	3.6	0.0255	0.0246	3.6	0.00031	0.00032	nc
Barium	mg/L	-	0.0548	0.0525	4.3	0.0629	0.0665	5.6	0.0392	0.0409	4.2	0.0123	0.0112	9.4	0.0572	0.0537	6.3	0.0495	0.0479	3.3	0.039	0.0382	2.1
Beryllium	mg/L	-	<0.0001	<0.0001	nc	<0.0001	<0.0001	nc	<0.0005	<0.0005	nc	<0.0002	<0.0002	nc	<0.0001	<0.0001	nc	0.00019	0.0002	nc	<0.0002	<0.0002	nc
Bismuth	mg/L	-	<0.0005	<0.0005	nc	<0.0005	<0.0005	nc	<0.0025	<0.0025	nc	<0.001	<0.001	nc	<0.0005	<0.0005	nc	<0.0005	<0.0005	nc	<0.001	<0.001	nc
Boron	mg/L	1.5	0.016	0.012	nc	<0.01	<0.01	nc	<0.05	<0.05	nc	<0.02	<0.02	nc	0.025	0.025	nc	0.014	0.014	nc	<0.02	<0.02	nc
Cadmium	mg/L	0.00004-0.00037 ⁸	0.000033	0.000031	nc	<0.00001	<0.00001	nc	<0.000050	<0.000050	nc	0.00005	0.00005	nc	0.000033	0.000025	nc	0.000206	0.000202	2.0	0.000561	0.00025	76.7
Calcium	mg/L	-	265	257	3.1	14.4	14.8	2.7	637	676	5.9	495	481	2.9	217	215	0.9	154	154	0.0	503	522	3.7
Chromium	mg/L	0.001	0.00012	0.00011	nc	0.00051	0.00052	nc	0.0021	0.00189	nc	0.00061	0.00056	nc	0.00337	0.0034	0.9	0.0005	0.00052	3.9	<0.0002	<0.0002	nc
Cobalt	mg/L	-	0.00019	0.00021	nc	0.00105	0.00107	1.9	0.0138	0.0141	2.2	<0.0002	<0.0002	nc	0.00265	0.0024	9.9	0.00324	0.00314	3.1	0.0445	0.0477	6.9
Copper	mg/L	0.002-0.004 ⁹	<0.0005	<0.0005	nc	0.00071	0.0007	nc	<0.0025	0.0028	nc	<0.001	<0.001	nc	0.00209	0.00199	nc	0.00051	0.00051	nc	<0.001	<0.001	nc
Iron	mg/L	0.3	0.715	0.687	4.0	3.7	3.8	2.7	75.5	79.3	4.9	0.034	0.037	nc	3.18	3.25	2.2	14.3	14.7	2.8	34.2	31.6	7.9
Lead	mg/L	0.001-0.007 ¹⁰	<0.00005	<0.00005	nc	0.000243	0.000257	5.6	0.00388	0.0041	nc	<0.0001	0.00011	nc	0.00105	0.0011	4.7	0.000171	0.000178	nc	0.00399	0.00014	186.4
Lithium	mg/L	-	0.0128	0.0103	21.6	0.0185	0.0182	1.6	0.0218	0.0244	11.3	0.0236	0.0284	18.5	0.0279	0.0282	1.1	0.0323	0.0329	1.8	0.0151	0.0145	4.1
Magnesium	mg/L	-	55.1	52.4	5.0	23.1	23.9	3.4	140	154	9.5	243	214	12.7	230	243	5.5	63	62	1.6	108	105	2.8
Manganese	mg/L	-	0.142	0.143	0.7	1.59	1.55	2.5	43.9	44.6	1.6	0.00123	0.00148	18.5	0.0815	0.0744	9.1	0.815	0.772	5.4	4.77	5.41	12.6
Mercury	mg/L	0.000026	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc
Molybdenum	mg/L	0.073	0.00089	0.000847	5.0	0.000366	0.00037	nc	0.00095	0.00094	nc	0.00088	0.0009	2.2	0.00158	0.00155	1.9	0.000604	0.000608	0.7	0.00014	0.00016	nc
Nickel	mg/L	0.025-0.150 ¹¹	0.00059	0.0007	nc	0.00808	0.00829	2.6	0.03	0.0307	2.3	<0.001	<0.001	nc	0.00676	0.00615	9.5	0.00864	0.00819	5.3	0.0374	0.0401	7.0
Phosphorus	mg/L	-	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	0.226	0.217	nc	0.224	0.17	nc
Potassium	mg/L	-	4.57	4.3	6.1	2	2.09	4.4	7.63	8.5	10.8	5.66	5.06	11.2	4.98	4.95	0.6	4.86	5.02	3.2	3.76	3.91	3.9
Selenium	mg/L	0.001	<0.0001	<0.0001	nc	0.00011	0.0001	nc	<0.0005	<0.0005	nc	0.00037	0.00043	nc	<0.0001	<0.0001	nc	0.0002	0.00026	nc	<0.0002	<0.0002	nc
Sodium	mg/L	-	21.7	24.2	10.9	2.8	2.85	1.8	39.3	40.5	3.0	22.1	19.5	12.5	8.57	8.11	5.5	9.84	9.55	3.0	29.6	32.7	10.0
Silicon	mg/L	-	5.96	5.68	4.8	8.03	8.41	4.6	12.7	13.7	7.6	6.19	5.74	7.5	8.51	8.63	1.4	13.3	13.7	3.0	9.45	8.7	8.3
Silver	mg/L	0.0001	<0.00001	<0.00001	nc	0.000022	<0.00001	nc	<0.00005	<0.00005	nc	<0.00002	<0.00002	nc	0.000012	0.000025	nc	<0.00001	<0.00001	nc	0.00002	0.000029	nc
Strontium	mg/L	-	0.926	0.906	2.2	0.125	0.12	4.1	1.56	1.69	8.0	0.587	0.614	4.5	1.75	1.7	2.9	0.713	0.711	0.3	7.2	7.24	0.6
Sulfur	mg/L	-	200	191	4.6	20.7	20.6	0.5	630	673	6.6	662	601	9.7	187	186	0.5	91.4	90.3	1.2	584	561	4.0
Thallium	mg/L	0.0008	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00005	<0.00005	nc	<0.00002	<0.00002	nc	0.00001	0.000014	nc	<0.00001	<0.00001	nc	<0.00002	<0.00002	nc
Tin	mg/L	-	<0.0001	<0.0001	nc	<0.0001	<0.0001	nc	<0.0005	<0.0005	nc	<0.0002	<0.0002	nc	<0.0001	0.00012	nc	<0.0001	<0.0001	nc	<0.0002	<0.0002	nc
Titanium	mg/L	-	<0.01	<0.01	nc	<0.01	<0.01	nc	<0.05	<0.05	nc	<0.02	<0.02	nc	0.017	0.019	nc	<0.01	<0.01	nc	<0.02	<0.02	nc
Uranium	mg/L	0.015	0.0103	0.0102	1.0	0.00017	0.000174	2.3	0.0107	0.0112	4.6	0.025	0.0253	1.2	0.0217	0.0213	1.9	0.00162	0.00161	0.6	0.000676	0.000601	11.7
Vanadium	mg/L	-	<0.001	<0.001	nc	<0.001	<0.001	nc	<0.005	<0.005	nc	<0.002	<0.002	nc	0.0017	0.0016	nc	<0.001	<0.001	nc	<0.002	<0.002	nc
Zinc	mg/L	0.03	<0.003	<0.003	nc	2.06	2.11	nc	<0.015	<0.015	nc	<0.006	<0.006	nc	0.0101	0.0094	nc	0.239	0.233	2.5	14.8	14.3	3.4
Zirconium	mg/L	-	0.0011	0.00111	nc	<0.0008	<0.0008	nc	<0.004	<0.004	nc	<0.0016	<0.0016	nc	0.00227	0.00195	nc	<0.0008	<0.0008	nc	<0.0016	<0.0016	nc

Table 3-3 Quality Assurance and Quality Control Analytical Results
for 2014 Fall Groundwater Sampling Program

		Location ID:	BH6		SRK08-P14			MW14-13			MW14-05			MW14-03			V37	P09-SIS2	TRAVEL BLANK 1	TRAVEL BLANK 2	
		Sample ID:	BH6	DUP 8	RPD (%) ¹²	SRK08-P14	DUP 9	RPD (%) ¹²	MW14-13	DUP10	RPD (%) ¹²	MW14-05	DUP11	RPD (%) ¹²	MW14-03	DUP12	RPD (%) ¹²	FB1	FB2	TRAVEL BLANK 1	TRAVEL BLANK 2
		Date Sampled:	12/09/2014			14/09/2014			13/09/2014			15/09/2014			14/09/2014			11/09/2014	09/09/2014	15/09/2014	15/09/2014
Parameter	Unit	CCME FAL ^{3,4}																			
Lab's Sample ID		-	L1518297-43	L1518297-2	-	L1518297-66	L1518297-6	-	L1518297-44	L1518297-45	-	L1519343-7	L1519343-9	-	L1518297-64	L1518297-65	-	L1518297-20	L1516957-21	L1518297-1	L1518297-76
Physical Tests																					
Conductivity	uS/cm	-	519	519	0.0	1960	1990	1.5	1640	1640	0.0	3660	3660	0.0	791	1960	85.0	<2.0	<2.0	<2.0	<2.0
Hardness, Total (CaCO3)	mg/L	-	254	262	3.1	1360	1440	5.7	1060	1060	0.0	2830	2690	5.1	462	462	0.0	<0.500	<0.500	<0.500	<0.500
pH	pH Units	6.5-9 ⁵	6.81	6.49	4.8	7.67	7.71	0.5	6.48	6.49	0.2	7.18	7.16	0.3	7.78	7.67	1.4	6.08	5.46	5.84	5.72
Total Suspended Solids	mg/L	See guideline ⁶	7	7.6	8.2	6.6	6.6	0.0	<1.000	<1.000	nc	27.6	26.4	4.4	48.8	45.6	6.8	<1.000	<1.000	<1.000	<1.000
Anions and Nutrients																					
Acidity (as CaCO3)	mg/L	-	67800	72500	6.7	18400	19000	3.2	178000	208000	15.5	63800	62800	1.6	16600	19500	16.1	2000	<1000	1900	1800
Alkalinity, Total (CaCO3)	mg/L	-	107	106	0.9	280	280	0.0	407	402	1.2	551	568	3.0	403	412	2.2	<1.000	<2.000	<2.000	<2.000
Anion Sum	mEq/L	-	5.7	5.74	-	27.2	27.6	-	22.4	22.3	-	61.4	58.9	-	9.61	9.79	-	<0.10	<0.10	<0.10	<0.10
Cation - Anion Balance	%	-	1.7	2.7	-	0.5	2.7	-	-0.8	-0.3	-	-3	-3.5	-	3.1	2.2	-	0	0	0	0
Cation Sum	mEq/L	-	5.9	6.07	-	27.5	29.1	-	22.1	22.2	-	57.8	54.9	-	10.2	10.2	-	<0.10	<0.10	<0.10	<0.10
Chloride	mg/L	-	<0.500	<0.500	nc	<5.000	<5.000	nc	<5.000	<5.000	nc	18	17	5.7	5.33	5.35	0.4	<0.500	<0.500	<0.500	<0.500
Sulfate (SO4)	mg/L	-	171	174	1.7	1040	1060	1.9	687	686	0.1	2390	2260	5.6	67.1	67.3	0.3	<0.500	<0.500	<0.500	<0.500
Dissolved Metals																					
Aluminum	mg/L	0.005-0.1 ⁷	0.0271	0.0279	2.9	<0.002	<0.002	nc	0.0635	0.0706	10.6	0.0129	0.0108	17.7	0.0027	0.0025	nc	<0.001	<0.001	-	-
Antimony	mg/L	-	<0.0001	<0.0001	nc	0.0002	0.00021	nc	<0.0002	<0.0001	nc	<0.0002	<0.0002	nc	0.00023	0.00021	nc	<0.0001	<0.0001	-	-
Arsenic	mg/L	0.005	<0.0001	0.00011	nc	0.00021	0.00025	nc	<0.0002	0.00014	nc	0.00133	0.00135	1.5	0.0088	0.0089	1.1	<0.0001	<0.0001	-	-
Barium	mg/L	-	0.0265	0.0261	1.5	0.0557	0.0569	2.1	0.0599	0.0557	7.3	0.0587	0.0577	1.7	0.142	0.137	3.6	<0.00005	<0.00005	-	-
Beryllium	mg/L	-	<0.0001	0.00011	nc	<0.0002	<0.0002	nc	<0.0002	<0.0001	nc	<0.0002	<0.0002	nc	<0.0001	<0.0001	nc	<0.0001	<0.0001	-	-
Bismuth	mg/L	-	<0.0005	<0.0005	nc	<0.001	<0.001	nc	<0.001	<0.0005	nc	<0.001	<0.001	nc	<0.0005	<0.0005	nc	<0.0005	<0.0005	-	-
Boron	mg/L	1.5	<0.01	<0.01	nc	<0.02	<0.02	nc	<0.02	<0.01	nc	<0.02	<0.02	nc	<0.01	<0.01	nc	<0.01	<0.01	-	-
Cadmium	mg/L	0.00004-0.00037 ⁸	0.00203	0.00199	2.0	0.000049	0.000058	nc	0.00357	0.00333	7.0	<0.00002	<0.00002	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	-	-
Calcium	mg/L	-	70.8	72.8	2.8	381	404	5.9	287	288	0.3	277	270	2.6	128	128	0.0	<0.05	<0.05	-	-
Chromium	mg/L	0.001	<0.0001	<0.0001	nc	<0.0002	<0.0002	nc	<0.0002	0.00029	nc	0.00097	0.001	nc	0.00029	0.00029	nc	<0.0001	<0.0001	-	-
Cobalt	mg/L	-	0.0464	0.0469	1.1	<0.0002	<0.0002	nc	0.00058	0.00053	nc	0.00308	0.003	2.6	0.00111	0.00111	0.0	<0.0001	<0.0001	-	-
Copper	mg/L	0.002-0.004 ⁹	<0.0002	<0.0002	nc	0.00365	0.00367	nc	0.00284	0.00275	3.2	<0.0004	<0.0004	nc	<0.0002	0.00023	nc	<0.0002	<0.0002	-	-
Iron	mg/L	0.3	5.24	5.36	2.3	<0.01	<0.01	nc	<0.01	<0.01	nc	9.04	8.67	4.2	8.61	8.56	0.6	<0.01	<0.01	-	-
Lead	mg/L	0.001-0.007 ¹⁰	0.000893	0.000886	0.8	<0.0001	<0.0001	nc	<0.0001	<0.00005	nc	<0.0001	<0.0001	nc	<0.00005	<0.00005	nc	<0.00005	<0.00005	-	-
Lithium	mg/L	-	0.0282	0.0279	1.1	0.0086	0.009	4.5	0.0349	0.0361	3.4	0.0632	0.0651	3.0	0.0374	0.0375	0.3	<0.0005	<0.0005	-	-
Magnesium	mg/L	-	18.8	19.5	3.7	100	106	5.8	82.2	83.7	1.8	520	490	5.9	34.8	35	0.6	<0.1	<0.1	-	-
Manganese	mg/L	-	1.62	1.64	1.2	0.00021	0.00022	nc	0.456	0.432	5.4	1.15	1.15	0.0	0.865	0.883	2.1	<0.00005	<0.00005	-	-
Mercury	mg/L	0.000026	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	-	-
Molybdenum	mg/L	0.073	0.000075	0.00008	nc	0.00086	0.00085	1.2	<0.0001	0.000078	nc	0.00053	0.00052	1.9	0.004	0.00383	4.3	<0.00005	<0.00005	-	-
Nickel	mg/L	0.025-0.150 ¹¹	0.0504	0.0512	1.6	0.0012	0.0014	nc	0.128	0.115	10.7	0.0132	0.0132	0.0	0.00336	0.00333	0.9	<0.0005	<0.0005	-	-
Phosphorus	mg/L	-	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	0.057	0.071	nc	<0.050	<0.050	-	-
Potassium	mg/L	-	2.14	2.17	1.4	1.23	1.27	3.2	4.93	5.31	7.4	9.74	9.5	2.5	7.09	7.03	0.8	<0.1	<0.1	-	-
Selenium	mg/L	0.001	<0.0001	<0.0001	nc	0.001	0.00122	19.8	0.00049	0.00045	nc	<0.0002	<0.0002	nc	<0.0001	<0.0001	nc	<0.0001	<0.0001	-	-
Silicon	mg/L	-	7.86	8.06	2.5	5.9	6.18	4.6	13.4	13.7	2.2	8.54	8.37	2.0	8.8	8.89	1.0	<0.05	<0.05	-	-
Silver	mg/L	0.0001	<0.00001	<0.00001	nc	<0.00002	<0.00002	nc	<0.00002	<0.00001	nc	0.000021	<0.00002	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	-	-
Sodium	mg/L	-	5.95	5.96	0.2	5.29	5.56	5.0	12.5	11.3	10.1	10.3	10.1	2.0	7.17	7.26	1.2	<0.05	<0.05	-	-
Strontium	mg/L	-	0.333	0.334	0.3	1.7	1.7	0.0	1.03	1.03	0.0	1.31	1.33	1.5	0.603	0.627	3.9	<0.0002	<0.0002	-	-
Sulfur	mg/L	-	59.5	58.2	2.2	355	347	2.3	218	218	0.0	760	752	1.1	22.8	22.8	0.0	<0.500	<0.500	-	-
Thallium	mg/L	0.0008	0.000054	0.000054	0.0	<0.00002	<0.00002	nc	<0.00002	0.000014	nc	<0.00002	<0.00002	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	-	-
Tin	mg/L	-	<0.0001	<0.0001	nc	<0.0002	<0.0002	nc	<0.0002	<0.0001	nc	<0.0002	<0.0002	nc	<0.0001	<0.0001	nc	<0.0001	<0.0001	-	-
Titanium	mg/L	-	<0.01	<0.01	nc	<0.02	<0.02	nc	<0.02	<0.01	nc	<0.02	<0.02	nc	<0.01	<0.01	nc	<0.01	<0.01	-	-
Uranium	mg/L	0.015	0.00111	0.00111	0.0	0.00721	0.00714	1.0	0.00489	0.00494	1.0	0.145	0.146	0.7	0.0169	0.0166	1.8	<0.00001	<0.00001	-	-
Vanadium	mg/L	-	<0.001	<0.001	nc	<0.002	<0.002	nc	<0.002	<0.001	nc	<0.002	<0.002	nc	<0.001	<0.001	nc	<0.001	<0.001	-	-
Zinc	mg/L	0.03	5.4	5.31	1.7	0.0052															

Table 3-3 Quality Assurance and Quality Control Analytical Results
for 2014 Fall Groundwater Sampling Program

		Location ID:	BH6		SRK08-P14			MW14-13			MW14-05			MW14-03			V37	P09-SIS2	TRAVEL BLANK 1	TRAVEL BLANK 2	
		Sample ID:	BH6	DUP 8	RPD (%) ¹²	SRK08-P14	DUP 9	RPD (%) ¹²	MW14-13	DUP10	RPD (%) ¹²	MW14-05	DUP11	RPD (%) ¹²	MW14-03	DUP12	RPD (%) ¹²	FB1	FB2	TRAVEL BLANK 1	TRAVEL BLANK 2
		Date Sampled:	12/09/2014			14/09/2014			13/09/2014			15/09/2014			14/09/2014			11/09/2014	09/09/2014	15/09/2014	15/09/2014
		CCME FAL ^{3,4}																			
Lab's Sample ID		-	L1518297-43	L1518297-2	-	L1518297-66	L1518297-6	-	L1518297-44	L1518297-45	-	L1519343-7	L1519343-9	-	L1518297-64	L1518297-65	-	L1518297-20	L1516957-21	L1518297-1	L1518297-76
Total Metals																					
Aluminum	mg/L	0.005-0.1 ⁷	0.228	0.213	6.8	0.355	0.366	3.1	0.0766	0.0888	14.8	0.468	0.48	2.5	0.754	0.645	15.6	<0.003	<0.003	<0.003	<0.003
Antimony	mg/L	-	<0.0001	<0.0001	nc	0.00024	0.00026	nc	<0.0002	<0.0001	nc	<0.0002	<0.0002	nc	0.00028	0.00026	nc	<0.0001	<0.0001	<0.0001	<0.0001
Arsenic	mg/L	0.005	0.00033	0.00031	nc	0.00054	0.00054	nc	<0.0002	0.00026	nc	0.00279	0.003	7.3	0.00991	0.0101	1.9	<0.0001	<0.0001	<0.0001	<0.0001
Barium	mg/L	-	0.0302	0.03	0.7	0.0634	0.0618	2.6	0.0625	0.0604	3.4	0.0657	0.0669	1.8	0.159	0.158	0.6	<0.00005	<0.00005	<0.00005	<0.00005
Beryllium	mg/L	-	0.00013	0.00011	nc	<0.0002	<0.0002	nc	<0.0002	<0.0001	nc	<0.0002	<0.0002	nc	<0.0001	<0.0001	nc	<0.0001	<0.0001	<0.0001	<0.0001
Bismuth	mg/L	-	<0.0005	<0.0005	nc	<0.001	<0.001	nc	<0.001	<0.0005	nc	<0.001	<0.001	nc	<0.0005	<0.0005	nc	<0.0005	<0.0005	<0.0005	<0.0005
Boron	mg/L	1.5	<0.01	<0.01	nc	<0.02	<0.02	nc	<0.02	0.01	nc	<0.02	<0.02	nc	0.012	0.013	8.0	<0.01	<0.01	<0.01	<0.01
Cadmium	mg/L	0.00004-0.00037 ⁸	0.00215	0.00205	4.8	0.000058	0.000056	nc	0.00375	0.00353	6.0	0.00007	0.000071	nc	0.000029	0.000027	7.1	<0.00001	<0.00001	<0.00001	<0.00001
Calcium	mg/L	-	73.3	70.4	4.0	382	401	4.9	284	280	1.4	266	273	2.6	127	129	1.6	<0.05	<0.05	<0.05	<0.05
Chromium	mg/L	0.001	0.00069	0.00066	4.4	0.00368	0.00365	0.8	0.00036	0.00035	nc	0.0035	0.00369	5.3	0.00511	0.00474	7.5	<0.0001	<0.0001	<0.0001	<0.0001
Cobalt	mg/L	-	0.0486	0.0478	1.7	0.00053	0.00055	nc	0.00055	0.0005	nc	0.00352	0.00365	3.6	0.00186	0.00185	0.5	<0.0001	<0.0001	<0.0001	<0.0001
Copper	mg/L	0.002-0.004 ⁹	0.00096	0.00091	nc	0.0068	0.005	30.5	0.0031	0.0032	nc	0.0014	0.0012	nc	0.00405	0.00364	10.7	<0.0005	<0.0005	<0.0005	<0.0005
Iron	mg/L	0.3	6.23	5.92	5.1	0.723	0.724	0.1	0.028	0.028	nc	9.74	9.7	0.4	10.1	9.96	1.4	<0.01	<0.01	<0.01	<0.01
Lead	mg/L	0.001-0.007 ¹⁰	0.00635	0.00618	2.7	0.00109	0.00094	14.8	<0.0001	0.000075	nc	0.00614	0.00682	10.5	0.00163	0.00161	1.2	<0.00005	<0.00005	<0.00005	<0.00005
Lithium	mg/L	-	0.0288	0.0285	1.0	0.01	0.0099	1.0	0.036	0.0362	0.6	0.0655	0.0673	2.7	0.0389	0.039	0.3	<0.0005	<0.0005	<0.0005	<0.0005
Magnesium	mg/L	-	19.6	19.2	2.1	103	104	1.0	84.6	82.3	2.8	513	502	2.2	35.7	36.2	1.4	<0.1	<0.1	<0.1	<0.1
Manganese	mg/L	-	1.69	1.66	1.8	0.0103	0.00918	11.5	0.471	0.447	5.2	1.16	1.22	5.0	0.91	0.93	2.2	<0.00005	<0.00005	<0.00005	<0.00005
Mercury	mg/L	0.000026	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00005	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	nc	<0.00001	<0.00001	<0.00001	<0.00001
Molybdenum	mg/L	0.073	0.000153	0.000142	nc	0.00104	0.00099	4.9	<0.0001	0.000084	nc	0.00071	0.00075	5.5	0.00367	0.00349	5.0	<0.00005	<0.00005	<0.00005	<0.00005
Nickel	mg/L	0.025-0.150 ¹¹	0.0528	0.0515	2.5	0.0033	0.0033	nc	0.134	0.121	10.2	0.0156	0.0165	5.6	0.00648	0.00639	1.4	<0.0005	<0.0005	<0.0005	<0.0005
Phosphorus	mg/L	-	<0.050	<0.050	nc	<0.050	<0.050	nc	<0.050	<0.050	nc	0.057	0.055	nc	0.104	0.111	6.5	<0.050	<0.050	<0.050	<0.050
Potassium	mg/L	-	2.26	2.18	3.6	1.29	1.25	3.1	4.99	5.17	3.5	9.32	9.56	2.5	7.33	7.4	1.0	<0.1	<0.1	<0.1	<0.1
Selenium	mg/L	0.001	<0.0001	<0.0001	nc	0.00115	0.00116	0.9	0.00036	0.00038	nc	<0.0002	<0.0002	nc	<0.0001	<0.0001	nc	<0.0001	<0.0001	<0.0001	<0.0001
Sodium	mg/L	-	6.09	5.9	3.2	5.67	5.76	1.6	13	11.8	9.7	10.2	11	7.5	7.4	7.47	0.9	<0.050	<0.050	<0.050	<0.050
Silicon	mg/L	-	8.54	8.23	3.7	6.82	6.72	1.5	13.6	13.5	0.7	8.77	9.06	3.3	10.1	9.92	1.8	<0.05	<0.05	<0.05	<0.05
Silver	mg/L	0.0001	0.000016	0.000014	nc	<0.00002	<0.00002	nc	<0.00002	0.00002	nc	0.000043	0.000036	nc	0.000016	<0.00001	nc	<0.00001	<0.00001	<0.00001	<0.00001
Strontium	mg/L	-	0.349	0.336	3.8	1.85	1.84	0.5	1.07	1.04	2.8	1.28	1.33	3.8	0.647	0.629	2.8	<0.0002	<0.0002	<0.0002	<0.0002
Sulfur	mg/L	-	62.1	58.5	6.0	369	352	4.7	236	227	3.9	760	774	1.8	24	24.2	0.8	<0.500	<0.500	<0.500	<0.500
Thallium	mg/L	0.0008	0.000065	0.000063	3.1	<0.00002	<0.00002	nc	<0.00002	0.000017	nc	<0.00002	<0.00002	nc	0.000016	0.000014	nc	<0.00001	<0.00001	<0.00001	<0.00001
Tin	mg/L	-	<0.0001	<0.0001	nc	<0.0002	<0.0002	nc	<0.0002	<0.0001	nc	<0.0002	<0.0002	nc	0.00013	0.00045	nc	<0.0001	<0.0001	<0.0001	<0.0001
Titanium	mg/L	-	0.011	0.011	0.0	<0.02	0.036	nc	<0.02	<0.01	nc	0.022	0.024	nc	0.028	0.023	nc	<0.01	<0.01	<0.01	<0.01
Uranium	mg/L	0.015	0.0013	0.00127	2.3	0.00801	0.008	0.1	0.00519	0.00504	2.9	0.14	0.15	6.9	0.017	0.0164	3.6	<0.00001	<0.00001	<0.00001	<0.00001
Vanadium	mg/L	-	<0.001	<0.001	nc	<0.002	<0.002	nc	<0.002	<0.001	nc	<0.002	<0.002	nc	0.0023	0.0021	nc	<0.001	<0.001	<0.001	<0.001
Zinc	mg/L	0.03	5.43	5.17	4.9	0.01	0.0084	nc	9.48	9.26	2.3	0.211	0.219	3.7	0.131	0.133	1.5	<0.003	<0.003	<0.003	<0.003
Zirconium	mg/L	-	<0.0008	<0.0008	nc	<0.0016	<0.0016	nc	<0.0016	<0.0008	nc	<0.0016	<0.0016	nc	0.00151	0.00145	nc	<0.0008	<0.0008	<0.0008	<0.0008

Notes

- (1) CCME guideline exceedences shaded with dark grey. Light grey shading denotes reportable detection limit in exceedance of CCME guideline
- (2) - = No standard or not analyzed
- (3) CCME = Canadian Council of Ministers of the Environment, Canadian Environmental Quality Guidelines, 1999, updated to November 2014
- (4) CCME FAL = Chapter 4, Canadian Water Quality Guidelines for the Protection of Aquatic Life, Freshwater, updated to November 2014
- (5) CCME FAL stipulates pH not < 6.5 and not > 9
- (6) Guideline note: For clear flow, TSS exposure is a maximum increase of 25 mg/L for up to 24 hours, or a maximum increase of 5 mg/L lasting between 24 hours and 30 days
- (7) Aluminum varies with pH as follows for CCME FAL:
 0.005 if pH<6.5
 .01 if pH>=6.5
- (8) Cadmium varies with Hardness in mg/L as follows for CCME FAL:
 0.00 if H<17
 0.00004 - 0.00037 if H>=17 and H<=280 as follows;
 CWQG (µg/L) = $10\{0.83[\log(\text{hardness})] - 2.46\}$
 0.00 if H>280
- (9) Copper varies with Hardness in mg/L as follows for CCME FAL:
 0.002 if H<82
 0.002 - 0.004 if H>=82 and H<=180 as follows;
 CWQG (µg/L) = $0.2 * e\{0.8545[\ln(\text{hardness})] - 1.465\}$
 0.004 if H>180
- (10) Lead varies with Hardness in mg/L as follows for CCME FAL:
 0.001 if H<60
 0.001 - 0.007 if H>=60 and H<=180 as follows;
 CWQG (µg/L) = $e\{1.273[\ln(\text{hardness})] - 4.705\}$
 0.007 if H>180
- (11) Nickel varies with Hardness in mg/L as follows for CCME FAL:
 0.025 if H<60
 0.025 - 0.150 if H>=60 and H<=180 as follows;
 CWQG (µg/L) = $e\{0.76[\ln(\text{hardness})] + 1.06\}$
 0.15 if H>180
- (12) RPD = Relative Percent Difference. RPD is calculated as the difference between a sample and its field duplicate over the average of two values.
 nc = not calculated. RPD is not calculated if either the sample or the field duplicate concentration is less than five times the detection limit.

APPENDIX A

Site Photos



Photo 1: View of well P01-11. Photo taken on September 10th, 2014.



Photo 2: View of wells P03-09-6 and P03-09-9. Photo taken on September 10th, 2014.



Photo 3: View of wells P05-01-03 and P05-01-05. Photo taken on September 10th, 2014.



Photo 4: View of well P09-C2. Photo taken on September 10th, 2014.



Photo 5: View of well P09-C3. Photo taken on September 10th, 2014.



Photo 6: View of well P01-01A and P01-01B. Photo taken on September 9th, 2014.



Photo 7: View of wells P09-ETA-1 and P09-ETA-2. Photo taken on September 13th, 2014.

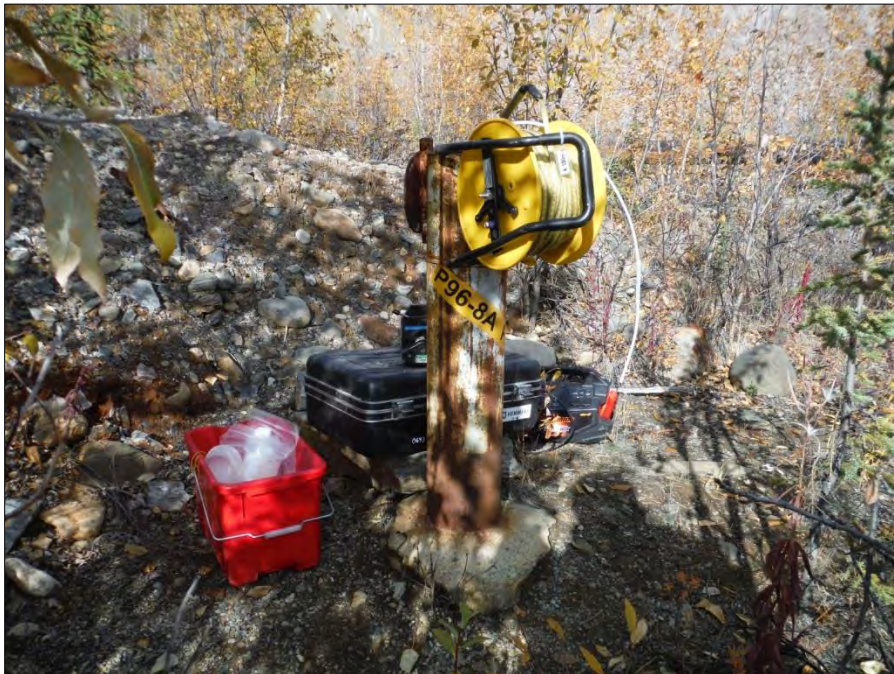


Photo 8: View of well P96-8A. Photo taken on September 11th, 2014.



Photo 9: View of well P96-8B. Photo taken on September 11th, 2014.



Photo 10: View of well SRK04-3A. Photo taken on September 13th, 2014.



Photo 11: View of well SRK05-ETA-BR1. Photo taken on September 13th, 2014.



Photo 12: View of well SRK05-ETA-BR2. Photo taken on September 13th, 2014.



Photo 13: View of wells MW14-02S and MW14-02D. Photo taken on September 15th, 2014.

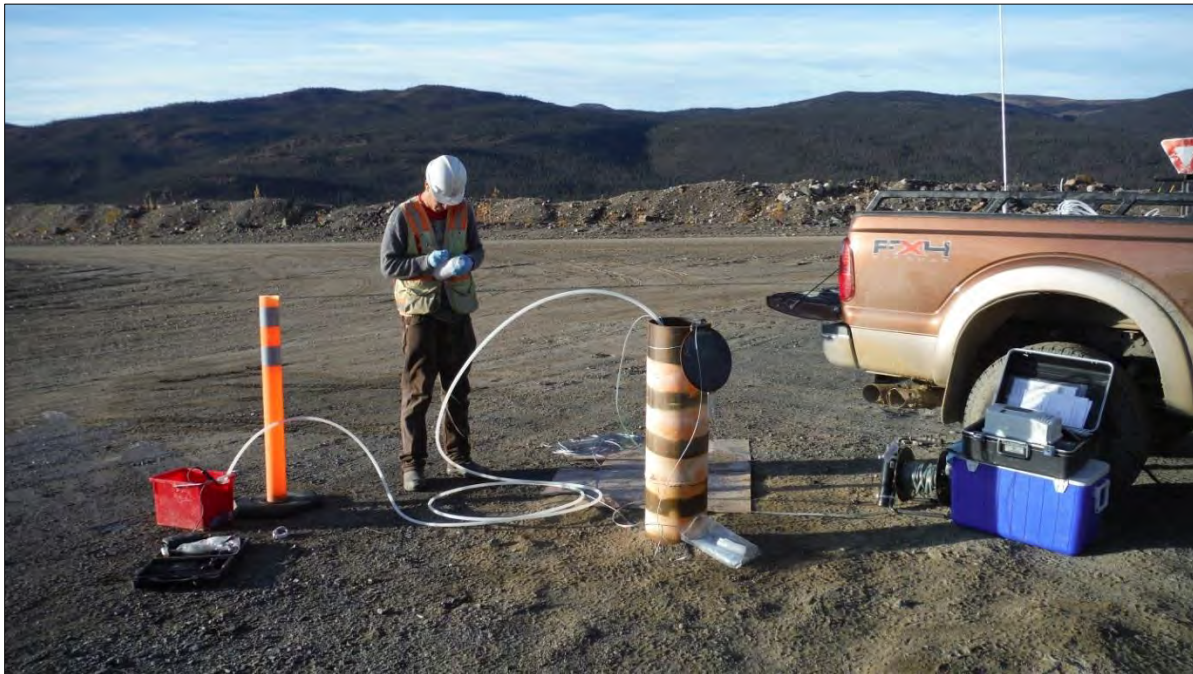


Photo 14: View of well MW14-03. Photo taken on September 14th, 2014.



Photo 15: View of well MW14-04Sand MW14-04D. Photo taken on September 15th, 2014.



Photo 16: View of well MW14-05. Photo taken on September 15th, 2014..



Photo 17: View of well PW14-01. Photo taken on September 14th, 2014.



Photo 18: View of well PW14-06. Photo taken on September 14th, 2014.



Photo 19: View of well PW14-07. Photo taken on September 14th, 2014.



Photo 20: View of well P01-03. Photo taken on September 9th, 2014.



Photo 21: View of well P01-04A and P01-04B. Photo taken on September 9th, 2014.



Photo 22: View of well X24-96D. Photo taken on September 9th, 2014



Photo 23: View of well X25-96A and X25-96B. Photo taken on September 9th, 2014.



Photo 24: View of well P96-6. Photo taken on September 12th, 2014.



Photo 25: View of well SRK08-P9. Photo taken on September 11th, 2014.



Photo 26: View of well SRK08-10A. Photo taken on September 10th, 2014.



Photo 27: View of well SRK08-11A. Photo taken on September 10th, 2014.



Photo 28: View of well SRK08-11B. Photo taken on September 10th, 2014.



Photo 29: View of well MW14-12D. Photo taken on September 13th, 2014.



Photo 30: View of well MW14-12S. Photo taken on September 13th, 2014.



Photo 31: View of well MW14-13. Photo taken on September 13th, 2014.



Photo 32: Views of Well MW14-14. Photo taken September 16th, 2014.



Photo 33: View of well MW14-15. Photo taken on September 14th, 2014.



Photo 34: View of well MW14-16. Photo taken on September 13th, 2014.



Photo 35: View of well BH13B. Photo taken on September 12th, 2014.



Photo 36: View of wells BH14A and BH14B. Photo taken on September 12th, 2014.



Photo 37: View of wells P03-01-2 and P03-01-8. Photo taken on September 16th, 2014.



Photo 38: View of wells P03-03-2, P03-03-4, and P03-03-9. Photo taken on September 15th, 2014.



Photo 39: View of well P03-05-4. Photo taken on September 15th, 2014.



Photo 40: View of wells P03-06-1, P03-06-2, P03-06-6, and P03-06-7. Photo taken on September 15th, 2014.



Photo 41: View of well P09-SIS1. Photo taken on September 9th, 2014.



Photo 42: View of well P09-SIS2. Photo taken on September 9th, 2014.



Photo 43: View of well P09-SIS3. Photo taken on September 9th, 2014..



Photo 44: View of well P09-SIS4. Photo taken on September 9th, 2014.



Photo 45: View of well P09-SIS5. Photo taken on September 9th, 2014.



Photo 46: View of well P96-7. Photo taken on September 10th, 2014.



Photo 47: View of well S1A and S1B. Photo taken on September 10th, 2014.



Photo 48: View of wells S2A and S2B. Photo taken on September 10th, 2014.



Photo 49: View of wells SRK05-SP-1A and SRK05-SP-1B. Photo taken on September 10th, 2014.



Photo 50: View of wells SRK05-SP-3A and SRK05-SP-3B. Photo taken on September 10th, 2014.



Photo 51: View of well SRK05-SP-4A. Photo taken on September 9th, 2014.



Photo 52: View of well SRK05-SP-4B. Photo taken on September 9th, 2014.



Photo 53: View of well SRK05-SP-5. Photo taken on September 9th, 2014.



Photo 54: View of well SRK05-SP-6. Photo taken on September 11th, 2014.



Photo 55: View of well SRK05-SP-5. Photo taken on September 9th, 2014.



Photo 56: View of well SRK08-SBR1. Photo taken on September 11th, 2014.



Photo 57: View of well SRK08-SBR2. Photo taken on September 11th, 2014.



Photo 58: View of well SRK08-SBR3. Photo taken on September 11th, 2014.



Photo 59: View of well SRK08-SBR4. Photo taken on September 10th, 2014.

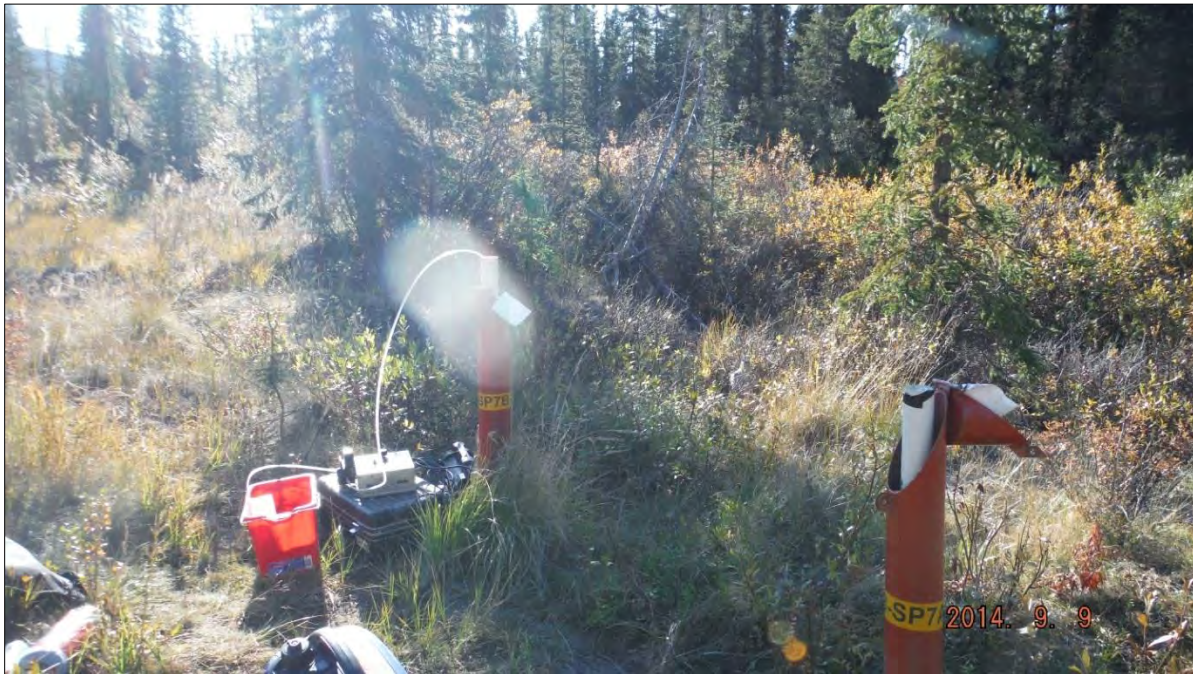


Photo 60: View of wells SRK08-SP-7A and SRK08-SP-7B. Photo taken on September 9th, 2014.



Photo 61: View of wells SRK08-SP-8A and SRK08-SP-8B. Photo taken on September 10th, 2014.



Photo 62: View of well MW14-08. Photo taken on September 10th, 2014.



Photo 63: View of well MW14-09. Photo taken on September 11th, 2014.



Photo 64: View of well MW14-10. Photo taken on September 11th, 2014.



Photo 65: View of well MW14-11. Photo taken on September 10th, 2014.



Photo 66: View of well SRK05-SP-2. Photo taken on September 11th, 2014.



Photo 67: View of well TH86-2. Photo taken on September 16th, 2014.



Photo 68: View of well TH86-5. Photo taken on September 16th, 2014.



Photo 69: View of well BH05-9B-R. Photo taken on September 12th, 2014.

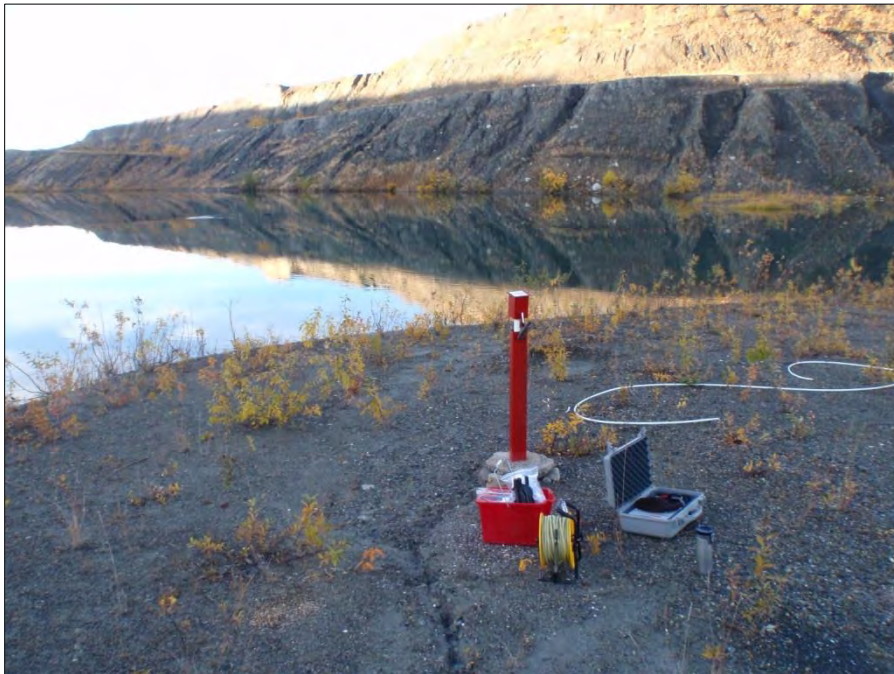


Photo 70: View of well P09-GS1A. Photo taken on September 14th, 2014.



Photo 71: View of well P09-GS1B. Photo taken on September 14th, 2014.



Photo 72: View of well P09-LCD1 and P09-LCD4. Photo taken on September 13th, 2014.



Photo 73: View of well P09-LCD6. Photo taken on September 13th, 2014.



Photo 74: View of well P09-VC1. Photo taken on September 12th, 2014.



Photo 75: View of well P09-VC2. Photo taken on September 12th, 2014.



Photo 76: View of well P2001-02A. Photo taken on September 13th, 2014.



Photo 77: View of well P2001-02B. Photo taken on September 11th, 2014.



Photo 78: View of well P2001-3. Photo taken on September 11th, 2014.



Photo 79: View of well P96-9A. Photo taken on September 12th, 2014.



Photo 80: View of well SRK05-07. Photo taken on September 12th, 2014.



Photo 81: View of well SRK05-08. Photo taken on September 12th, 2014.



Photo 82: View of well SRK05-5C. Photo taken on September 12th, 2014.



Photo 83: View of well SRK05-09. Photo taken on September 13th, 2014.



Photo 84: View of well SRK08-P14. Photo taken on September 14th, 2014.



Photo 85: View of well SRK08-P15. Photo taken on September 14th, 2014.



Photo 86: View of well SRK08-P16. Photo taken on October 15th, 2014.



Photo 87: View of well V34. Photo taken on September 11th, 2014.



Photo 88: View of well V35. Photo taken on September 11th, 2014.



Photo 89: View of well V36. Photo taken on September 11th, 2014.



Photo 90: View of well V37. Photo taken on September 13th, 2014.



Photo 91: View of well BH10A and BH10B. Photo taken on September 12th, 2014.



Photo 92: View of well BH5. Photo taken on September 12th, 2014.



Photo 93: View of well BH6. Photo taken on September 12th, 2014.



Photo 94: View of well BH8. Photo taken on September 13th, 2014.



Photo 95: View of well P05-04. Photo taken on September 12th, 2014.



Photo 96: View of well SRK08-P12A and SRK08-P12B. Photo taken on September 12th, 2014.

APPENDIX B

Laboratory Analytical Reports



HEMMERA ENVIROCHEM INC.
ATTN: Natasha Sandys
Suite 230 - 2237 2nd Avenue
Whitehorse Yukon Y1A 0K7

Date Received: 12-SEP-14
Report Date: 26-SEP-14 11:16 (MT)
Version: FINAL

Client Phone: --

Certificate of Analysis

Lab Work Order #: L1516957
Project P.O. #: NOT SUBMITTED
Job Reference: 1343-005.02
C of C Numbers: 1, 2, 3, 4
Legal Site Desc:

Brent Mack
Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-1 Water 09-SEP-14 14:42 P09-SIS2	L1516957-2 Water 09-SEP-14 15:17 P09-SIS3	L1516957-3 Water 09-SEP-14 18:20 SRK05-SP-4A	L1516957-4 Water 09-SEP-14 17:40 SRK05-SP-4B	L1516957-5 Water 09-SEP-14 16:50 P09-SIS1
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	11600	11500	1360	7650	9270
	Hardness (as CaCO3) (mg/L)	10300	10200	783	6390	8230
	pH (pH)	6.02	6.77	7.22	6.80	6.61
	Total Suspended Solids (mg/L)	5.6	6.4	7.6	11.8	37.0
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	1310	1270	158	609	631
	Alkalinity, Total (as CaCO3) (mg/L)	141	177	273	176	287
	Chloride (Cl) (mg/L)	<25 ^{DLA}	25	<5.0 ^{DLA}	28	28
	Sulfate (SO4) (mg/L)	12500	12500	591	7490	9250
	Anion Sum (meq/L)	264	265	17.8	160	199
	Cation Sum (meq/L)	244	245	17.8	143	186
	Cation - Anion Balance (%)	-3.9	-3.8	0.1	-5.5	-3.4
			^{DLA}		^{DLA}	
Total Metals	Aluminum (Al)-Total (mg/L)	1.03	<0.30 ^{DLA}	0.056 ^{DLA}	<0.15 ^{DLA}	0.71 ^{DLA}
	Antimony (Sb)-Total (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Arsenic (As)-Total (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	0.00159	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Barium (Ba)-Total (mg/L)	0.0224	0.0218	0.00970	0.0173	0.0362
	Beryllium (Be)-Total (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	0.00088	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.0025 ^{DLA}	<0.025 ^{DLA}	<0.025 ^{DLA}
	Boron (B)-Total (mg/L)	<1.0 ^{DLA}	<1.0 ^{DLA}	<0.050 ^{DLA}	<0.50 ^{DLA}	<0.50 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.581	0.649	0.00400	0.0754	0.0725
	Calcium (Ca)-Total (mg/L)	521	501	143	533	494
	Chromium (Cr)-Total (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Cobalt (Co)-Total (mg/L)	2.85	2.58	0.0536	0.0107	0.757
	Copper (Cu)-Total (mg/L)	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.0025 ^{DLA}	<0.025 ^{DLA}	<0.025 ^{DLA}
	Iron (Fe)-Total (mg/L)	0.378	0.101	13.4	4.70	20.4
	Lead (Pb)-Total (mg/L)	<0.0050 ^{DLA}	<0.0050 ^{DLA}	0.00173	<0.0025 ^{DLA}	0.0027
	Lithium (Li)-Total (mg/L)	0.218	0.223	0.0831	0.154	0.227
	Magnesium (Mg)-Total (mg/L)	2300	2240	104	1260	1630
	Manganese (Mn)-Total (mg/L)	200	224	5.78	61.5	131
	Mercury (Hg)-Total (mg/L)	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}
	Molybdenum (Mo)-Total (mg/L)	<0.0050 ^{DLA}	<0.0050 ^{DLA}	<0.00025 ^{DLA}	<0.0025 ^{DLA}	<0.0025 ^{DLA}
	Nickel (Ni)-Total (mg/L)	4.39	4.89	0.141	2.37	1.55
	Phosphorus (P)-Total (mg/L)	<0.25 ^{DLA}	<0.25 ^{DLA}	<0.050	<0.25 ^{DLA}	<0.25 ^{DLA}
	Potassium (K)-Total (mg/L)	18.9	19.8	5.71	11.7	12.3
	Selenium (Se)-Total (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Silicon (Si)-Total (mg/L)	14.1	14.9	14.0	12.6	12.5
	Silver (Ag)-Total (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.000050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}
	Sodium (Na)-Total (mg/L)	70.2	71.4	11.2	38.8	60.2

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-6 Water 09-SEP-14 16:32 P09-SIS4	L1516957-7 Water 09-SEP-14 16:22 P09-SIS5	L1516957-8 Water 09-SEP-14 13:40 SRK05-SP-5	L1516957-9 Water 09-SEP-14 11:20 SRK08-SP-7B	L1516957-10 Water 09-SEP-14 11:54 SRK08-SP-7A
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	6130	5040	10100	271	830
	Hardness (as CaCO3) (mg/L)	5120	3920	8640	131	442
	pH (pH)	7.25	7.34	6.67	7.91	7.34
	Total Suspended Solids (mg/L)	46.0	73.0	23.0	2.8	6.6
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	187	103	1170	15.9	61.9
	Alkalinity, Total (as CaCO3) (mg/L)	434	441	179	85.0	126
	Chloride (Cl) (mg/L)	<10 ^{DLA}	<10 ^{DLA}	26	<0.50	<2.5 ^{DLA}
	Sulfate (SO4) (mg/L)	5240	3990	10700	62.4	366
	Anion Sum (meq/L)	118	91.9	227	3.00	10.1
	Cation Sum (meq/L)	107	84.0	206	3.11	9.99
	Cation - Anion Balance (%)	-4.8	-4.5	-4.9	1.8	-0.7
Total Metals	Aluminum (Al)-Total (mg/L)	0.275	0.526	0.49	0.0450	0.106
	Antimony (Sb)-Total (mg/L)	<0.0010 ^{DLA}	<0.00050 ^{DLA}	<0.010 ^{DLA}	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	<0.0010 ^{DLA}	0.00146	<0.010 ^{DLA}	0.00398	0.00499
	Barium (Ba)-Total (mg/L)	0.0149	0.0302	0.0254	0.0629	0.0173
	Beryllium (Be)-Total (mg/L)	<0.0010 ^{DLA}	<0.00050 ^{DLA}	<0.010 ^{DLA}	<0.00010	0.00025
	Bismuth (Bi)-Total (mg/L)	<0.0050 ^{DLA}	<0.0025 ^{DLA}	<0.050 ^{DLA}	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.10 ^{DLA}	<0.050 ^{DLA}	<1.0 ^{DLA}	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.0161	0.00162	0.400	<0.000010	0.000038
	Calcium (Ca)-Total (mg/L)	472	496	428	14.4	112
	Chromium (Cr)-Total (mg/L)	0.0024	0.00231	<0.010 ^{DLA}	0.00051	0.00059
	Cobalt (Co)-Total (mg/L)	<0.0010 ^{DLA}	0.0337	2.68	0.00105	0.00549
	Copper (Cu)-Total (mg/L)	0.0063	0.0048	<0.050 ^{DLA}	0.00071	<0.00050
	Iron (Fe)-Total (mg/L)	0.592	19.6	1.38	3.70	13.4
	Lead (Pb)-Total (mg/L)	0.00051	0.00192	<0.0050 ^{DLA}	0.000243	0.000269
	Lithium (Li)-Total (mg/L)	0.105	0.0500	0.209	0.0185	0.0398
	Magnesium (Mg)-Total (mg/L)	939	653	1770	23.1	40.8
	Manganese (Mn)-Total (mg/L)	9.41	33.3	184	1.59	1.11
	Mercury (Hg)-Total (mg/L)	<0.000010 ^{DLA}	<0.000010	<0.000010 ^{DLA}	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.00050 ^{DLA}	0.00100	<0.0050 ^{DLA}	0.000366	0.000144
	Nickel (Ni)-Total (mg/L)	0.492	0.152	4.05	0.00808	0.0137
	Phosphorus (P)-Total (mg/L)	<0.15 ^{DLA}	<0.10 ^{DLA}	<0.25 ^{DLA}	<0.050	<0.050
	Potassium (K)-Total (mg/L)	10.2	9.61	16.2	2.00	4.18
	Selenium (Se)-Total (mg/L)	<0.0010 ^{DLA}	<0.00050 ^{DLA}	<0.010 ^{DLA}	0.00011	<0.00010
	Silicon (Si)-Total (mg/L)	11.3	11.9	13.7	8.03	12.2
	Silver (Ag)-Total (mg/L)	<0.00010 ^{DLA}	<0.000050 ^{DLA}	<0.0010 ^{DLA}	0.000022	<0.000010
	Sodium (Na)-Total (mg/L)	33.6	65.2	68.6	2.80	8.05

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-11 Water 09-SEP-14 11:20 DUP2	L1516957-12 Water 09-SEP-14 18:16 P01-04A	L1516957-13 Water 09-SEP-14 16:46 P01-04B	L1516957-14 Water 09-SEP-14 16:00 X25-96B	L1516957-15 Water 09-SEP-14 15:28 X25-96A
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	269	1120	2500	1650	1690
	Hardness (as CaCO3) (mg/L)	137	555	1710	987	1070
	pH (pH)	7.50	7.49	7.54	7.98	7.65
	Total Suspended Solids (mg/L)	3.6	1.2	19.0	7.0	8.2
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	15.9	48.3	37.5	8.6	24.3
	Alkalinity, Total (as CaCO3) (mg/L)	83.9	756	379	293	299
	Chloride (Cl) (mg/L)	<0.50	7.8	<10 ^{DLA}	<5.0 ^{DLA}	<5.0 ^{DLA}
	Sulfate (SO4) (mg/L)	62.4	27.3	1490	794	798
	Anion Sum (meq/L)	2.98	15.9	38.7	22.4	22.6
	Cation Sum (meq/L)	3.24	14.0	37.4	22.1	23.4
	Cation - Anion Balance (%)	4.3	-6.2	-1.7	-0.6	1.8
Total Metals	Aluminum (Al)-Total (mg/L)	0.0477	0.0039	0.0079	0.0269	0.0064
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Arsenic (As)-Total (mg/L)	0.00413	0.00014	0.00198	0.00123	0.00033
	Barium (Ba)-Total (mg/L)	0.0665	0.441	0.0179	0.0298	0.0679
	Beryllium (Be)-Total (mg/L)	<0.00010	0.00031	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Total (mg/L)	<0.010	0.030	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	<0.000010	0.000014	<0.000020 ^{DLA}	0.000020	0.000136
	Calcium (Ca)-Total (mg/L)	14.8	139	522	318	305
	Chromium (Cr)-Total (mg/L)	0.00052	0.00012	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Cobalt (Co)-Total (mg/L)	0.00107	0.00013	0.00227	<0.00020 ^{DLA}	0.0123
	Copper (Cu)-Total (mg/L)	0.00070	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}
	Iron (Fe)-Total (mg/L)	3.80	0.451	15.3	2.69	5.29
	Lead (Pb)-Total (mg/L)	0.000257	<0.000050	<0.00010 ^{DLA}	0.00035	0.00016
	Lithium (Li)-Total (mg/L)	0.0182	0.186	0.0244	0.0110	0.0056
	Magnesium (Mg)-Total (mg/L)	23.9	49.5	94.6	46.4	68.8
	Manganese (Mn)-Total (mg/L)	1.55	0.262	9.91	0.296	16.8
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.000370	<0.000050	0.00048	0.00038	0.00115
	Nickel (Ni)-Total (mg/L)	0.00829	<0.00050	0.0038	<0.0010 ^{DLA}	0.0072
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	2.09	3.50	5.97	4.31	5.15
	Selenium (Se)-Total (mg/L)	0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Silicon (Si)-Total (mg/L)	8.41	8.75	8.21	4.96	8.68
	Silver (Ag)-Total (mg/L)	<0.000010	0.000166	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}
	Sodium (Na)-Total (mg/L)	2.85	66.2	42.0	52.6	20.9

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-16 Water 09-SEP-14 14:23 P01-03	L1516957-17 Water 09-SEP-14 18:32 X24-96D	L1516957-18 Water 09-SEP-14 11:12 P01-01A	L1516957-19 Water 09-SEP-14 12:04 P01-01B	L1516957-20 Water 09-SEP-14 12:04 DUP1
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	3640	3210	1790	1420	1410
	Hardness (as CaCO3) (mg/L)	2350	2280	1190	902	883
	pH (pH)	6.53	6.79	7.71	7.82	7.83
	Total Suspended Solids (mg/L)	99.2	212	<1.0	2.4	2.0
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	402	116	24.4	13.6	13.1
	Alkalinity, Total (as CaCO3) (mg/L)	230	384	349	318	318
	Chloride (Cl) (mg/L)	<10 ^{DLA}	<10 ^{DLA}	<5.0 ^{DLA}	<5.0 ^{DLA}	<5.0 ^{DLA}
	Sulfate (SO4) (mg/L)	2770	2190	886	620	617
	Anion Sum (meq/L)	62.3	53.2	25.4	19.3	19.2
	Cation Sum (meq/L)	63.7	51.3	25.1	19.1	18.9
	Cation - Anion Balance (%)	1.1	-1.8	-0.7	-0.4	-0.9
Total Metals	Aluminum (Al)-Total (mg/L)	0.127	0.119	0.0082	<0.0030	<0.0030
	Antimony (Sb)-Total (mg/L)	<0.0010 ^{DLA}	0.0016	<0.00020 ^{DLA}	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	<0.0010 ^{DLA}	0.0012	0.00034	0.00250	0.00214
	Barium (Ba)-Total (mg/L)	0.0143	0.0320	0.0500	0.0548	0.0525
	Beryllium (Be)-Total (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.0050 ^{DLA}	<0.0050 ^{DLA}	<0.0010 ^{DLA}	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.10 ^{DLA}	<0.10 ^{DLA}	<0.020 ^{DLA}	0.016	0.012
	Cadmium (Cd)-Total (mg/L)	0.00210	0.00771	0.000982	0.000033	0.000031
	Calcium (Ca)-Total (mg/L)	616	678	338	265	257
	Chromium (Cr)-Total (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00020 ^{DLA}	0.00012	0.00011
	Cobalt (Co)-Total (mg/L)	0.229	0.352	0.00227	0.00019	0.00021
	Copper (Cu)-Total (mg/L)	<0.0050 ^{DLA}	0.0057	<0.0010 ^{DLA}	<0.00050	<0.00050
	Iron (Fe)-Total (mg/L)	217	10.9	0.016	0.715	0.687
	Lead (Pb)-Total (mg/L)	0.00062	0.00374	<0.00010 ^{DLA}	<0.000050	<0.000050
	Lithium (Li)-Total (mg/L)	0.0287	0.0287	0.0148	0.0128	0.0103
	Magnesium (Mg)-Total (mg/L)	195	172	77.0	55.1	52.4
	Manganese (Mn)-Total (mg/L)	87.5	92.7	8.28	0.142	0.143
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00059	0.00086	0.00076	0.000890	0.000847
	Nickel (Ni)-Total (mg/L)	0.0878	0.543	0.0110	0.00059	0.00070
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	7.68	7.92	6.65	4.57	4.30
	Selenium (Se)-Total (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010
	Silicon (Si)-Total (mg/L)	11.6	9.33	7.40	5.96	5.68
	Silver (Ag)-Total (mg/L)	<0.00010 ^{DLA}	<0.00010 ^{DLA}	<0.000020 ^{DLA}	<0.000010	<0.000010
	Sodium (Na)-Total (mg/L)	30.5	41.7	16.4	21.7	24.2

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-21 Water 09-SEP-14 14:30 FB2	L1516957-22 Water 10-SEP-14 10:23 SRK08-SP-8B	L1516957-23 Water 10-SEP-14 09:52 SRK08-SP-8A	L1516957-24 Water 10-SEP-14 08:42 P96-7	L1516957-25 Water 10-SEP-14 15:06 SRK05-SP-3B
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	<2.0	2560	2640	2960	1150
	Hardness (as CaCO3) (mg/L)	<0.50	1830	1830	2260	683
	pH (pH)	5.46	6.70	6.48	7.72	6.55
	Total Suspended Solids (mg/L)	<1.0	3.8	4.8	1.4	1.4
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	<1.0	130	176	16.8	171
	Alkalinity, Total (as CaCO3) (mg/L)	<2.0	322	381	231	290
	Chloride (Cl) (mg/L)	<0.50	<10 ^{DLA}	<10 ^{DLA}	<10 ^{DLA}	<5.0 ^{DLA}
	Sulfate (SO4) (mg/L)	<0.50	1650	1630	2090	419
	Anion Sum (meq/L)	<0.10	40.8	41.5	48.2	14.5
	Cation Sum (meq/L)	<0.10	39.7	40.0	46.2	15.1
	Cation - Anion Balance (%)	0.0	-1.4	-1.9	-2.1	2.1
Total Metals	Aluminum (Al)-Total (mg/L)	<0.0030	0.0321	0.0510	0.0132	0.0602
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Total (mg/L)	<0.00010	0.00456	0.0103	<0.00020 ^{DLA}	0.00025
	Barium (Ba)-Total (mg/L)	<0.000050	0.0147	0.0130	0.0123	0.0177
	Beryllium (Be)-Total (mg/L)	<0.00010	0.00022 ^{DLA}	0.00046 ^{DLA}	<0.00020 ^{DLA}	0.00054
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}	0.013
	Cadmium (Cd)-Total (mg/L)	<0.000010	0.000056	<0.000020 ^{DLA}	0.000050	0.000062
	Calcium (Ca)-Total (mg/L)	<0.050	358	425	495	167
	Chromium (Cr)-Total (mg/L)	<0.00010	0.00022	0.00042	0.00061 ^{DLA}	0.00026
	Cobalt (Co)-Total (mg/L)	<0.00010	0.00873 ^{DLA}	0.00819 ^{DLA}	<0.00020 ^{DLA}	0.00656
	Copper (Cu)-Total (mg/L)	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Iron (Fe)-Total (mg/L)	<0.010	31.7	37.1	0.034 ^{DLA}	16.3
	Lead (Pb)-Total (mg/L)	<0.000050	0.00010	0.00016	<0.00010 ^{DLA}	0.000394
	Lithium (Li)-Total (mg/L)	<0.00050	0.0755	0.115	0.0236	0.0564
	Magnesium (Mg)-Total (mg/L)	<0.10	225	198	243	62.9
	Manganese (Mn)-Total (mg/L)	<0.000050	6.68	3.05	0.00123	1.46
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.000050	0.00024	0.00016	0.00088 ^{DLA}	0.000108
	Nickel (Ni)-Total (mg/L)	<0.00050	0.0189	0.0250	<0.0010 ^{DLA}	0.0178
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	<0.10	5.64 ^{DLA}	6.45 ^{DLA}	5.66	5.13
	Selenium (Se)-Total (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00037	<0.00010
	Silicon (Si)-Total (mg/L)	<0.050	13.6 ^{DLA}	15.1 ^{DLA}	6.19 ^{DLA}	12.5
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Total (mg/L)	<0.050	22.2	27.8	22.1	9.29

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-26 Water 10-SEP-14 15:35 SRK05-SP-3A	L1516957-27 Water 10-SEP-14 14:30 S1A	L1516957-28 Water 10-SEP-14 13:21 SRK08-SBR4	L1516957-29 Water 10-SEP-14 12:27 S2A	L1516957-30 Water 10-SEP-14 11:28 S2B
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	1540	3010	8790	2090	9520
	Hardness (as CaCO3) (mg/L)	959	2140	7480	1360	7830
	pH (pH)	6.53	6.47	6.59	7.02	6.54
	Total Suspended Solids (mg/L)	2.4	170	5.4	24.2	22.4
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	170	236	843	157	1010
	Alkalinity, Total (as CaCO3) (mg/L)	283	241	148	327	184
	Chloride (Cl) (mg/L)	<5.0 ^{DLA}	<10 ^{DLA}	<25 ^{DLA}	<10 ^{DLA}	<25 ^{DLA}
	Sulfate (SO4) (mg/L)	717	2120	9000	1180	9980
	Anion Sum (meq/L)	20.6	49.0	190	31.1	211
	Cation Sum (meq/L)	21.5	47.8	174	29.7	184
	Cation - Anion Balance (%)	2.1	-1.2	-4.5	-2.3	-7.0
Total Metals	Aluminum (Al)-Total (mg/L)	0.0633	2.22	<0.15 ^{DLA}	0.937	0.44
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020 ^{DLA}	<0.010 ^{DLA}
	Arsenic (As)-Total (mg/L)	0.00274	0.0021	<0.0050 ^{DLA}	0.00185	<0.010 ^{DLA}
	Barium (Ba)-Total (mg/L)	0.0167	0.0482	0.0151	0.0291	0.0357
	Beryllium (Be)-Total (mg/L)	0.00137	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020 ^{DLA}	<0.010 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.0050 ^{DLA}	<0.025 ^{DLA}	<0.0010 ^{DLA}	<0.050 ^{DLA}
	Boron (B)-Total (mg/L)	0.017	<0.10 ^{DLA}	<0.50 ^{DLA}	<0.020 ^{DLA}	<1.0 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.000061	0.00569	0.146	0.00112	0.123
	Calcium (Ca)-Total (mg/L)	235	328	449	300	529
	Chromium (Cr)-Total (mg/L)	0.00033	0.0055	<0.0050 ^{DLA}	0.00339	<0.010 ^{DLA}
	Cobalt (Co)-Total (mg/L)	0.00604	0.158	1.93	0.0293	1.72
	Copper (Cu)-Total (mg/L)	<0.00050	0.0055	<0.025 ^{DLA}	0.0037	<0.050 ^{DLA}
	Iron (Fe)-Total (mg/L)	31.2	28.1	2.07	25.1	11.5
	Lead (Pb)-Total (mg/L)	0.000276	0.00324	<0.0025 ^{DLA}	0.0376	<0.0050 ^{DLA}
	Lithium (Li)-Total (mg/L)	0.0681	0.0762	0.230	0.0544	0.124
	Magnesium (Mg)-Total (mg/L)	92.0	288	1570	141	1550
	Manganese (Mn)-Total (mg/L)	1.51	21.0	120	5.45	145
	Mercury (Hg)-Total (mg/L)	<0.000010	0.000038	<0.000010 ^{DLA}	0.000033	<0.000010 ^{DLA}
	Molybdenum (Mo)-Total (mg/L)	0.000160	<0.00050 ^{DLA}	<0.0025 ^{DLA}	0.00013	<0.0050 ^{DLA}
	Nickel (Ni)-Total (mg/L)	0.0191	0.279	2.79	0.0588	2.73
	Phosphorus (P)-Total (mg/L)	<0.050	0.091	<0.25 ^{DLA}	<0.050	<0.25 ^{DLA}
	Potassium (K)-Total (mg/L)	5.42	7.65	16.4	6.15	13.9
	Selenium (Se)-Total (mg/L)	<0.00010	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020 ^{DLA}	<0.010 ^{DLA}
	Silicon (Si)-Total (mg/L)	13.1	17.8	12.7	15.0	11.8
	Silver (Ag)-Total (mg/L)	<0.000010	<0.00010 ^{DLA}	<0.00050 ^{DLA}	0.000070	<0.0010 ^{DLA}
	Sodium (Na)-Total (mg/L)	10.2	15.2	71.0	13.4	49.7

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-31 Water 10-SEP-14 17:40 MW14-11	L1516957-32 Water 10-SEP-14 17:00 MW14-08	L1516957-33 Water 10-SEP-14 16:22 SRK05-SP-1A	L1516957-34 Water 10-SEP-14 08:42 DUP4	L1516957-35 Water 10-SEP-14 17:17 SRK08-11A
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	669	485	2270	2980	1240
	Hardness (as CaCO3) (mg/L)	400	267	1440	1930	768
	pH (pH)	7.87	7.81	6.59	7.70	7.77
	Total Suspended Solids (mg/L)	27.2	460	2.2	1.4	3.0
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	23.3	21.5	339	18.8	11.1
	Alkalinity, Total (as CaCO3) (mg/L)	385	256	241	231	179
	Chloride (Cl) (mg/L)	0.69	<0.50	<10 ^{DLA}	<10 ^{DLA}	<5.0 ^{DLA}
	Sulfate (SO4) (mg/L)	15.2	23.6	1380	2050	606
	Anion Sum (meq/L)	8.03	5.62	33.5	47.3	16.2
	Cation Sum (meq/L)	8.63	6.47	34.4	39.6	15.8
	Cation - Anion Balance (%)	3.6	7.0	1.3	-8.9	-1.3
Total Metals	Aluminum (Al)-Total (mg/L)	0.277	7.05	0.112	0.0142	0.118
	Antimony (Sb)-Total (mg/L)	0.00011	0.00033	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00011
	Arsenic (As)-Total (mg/L)	0.00679	0.00851	0.00510	<0.00020 ^{DLA}	0.00019
	Barium (Ba)-Total (mg/L)	0.137	0.364	0.0134	0.0112	0.130
	Beryllium (Be)-Total (mg/L)	<0.00010	0.00037	0.00261 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Total (mg/L)	0.023	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000015	0.000309	0.000053	0.000050	0.000046
	Calcium (Ca)-Total (mg/L)	75.9	88.3	339	481	216
	Chromium (Cr)-Total (mg/L)	0.00097	0.0141	0.00034	0.00056	0.00039
	Cobalt (Co)-Total (mg/L)	0.00248	0.00721	0.00787	<0.00020 ^{DLA}	0.00010
	Copper (Cu)-Total (mg/L)	0.00138	0.0117	<0.0010 ^{DLA}	<0.0010 ^{DLA}	0.00161
	Iron (Fe)-Total (mg/L)	6.91	22.3	83.2	0.037	0.147
	Lead (Pb)-Total (mg/L)	0.000546	0.0326	0.00017	0.00011	0.00208
	Lithium (Li)-Total (mg/L)	0.0113	0.0177	0.0953	0.0284	0.0155
	Magnesium (Mg)-Total (mg/L)	48.4	15.4	143	214	50.2
	Manganese (Mn)-Total (mg/L)	0.922	2.74	2.76	0.00148	0.00543
	Mercury (Hg)-Total (mg/L)	<0.000010	0.000023	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00257	0.000543	0.00015	0.00090 ^{DLA}	0.000189
	Nickel (Ni)-Total (mg/L)	0.00360	0.0149	0.0302	<0.0010 ^{DLA}	0.00279
	Phosphorus (P)-Total (mg/L)	0.071	0.481	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	3.10	2.69	6.12 ^{DLA}	5.06	3.72
	Selenium (Se)-Total (mg/L)	0.00017	0.00034	<0.00020 ^{DLA}	0.00043	0.00018
	Silicon (Si)-Total (mg/L)	7.64	18.5	14.8	5.74 ^{DLA}	6.81
	Silver (Ag)-Total (mg/L)	<0.000010	0.000138	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Total (mg/L)	4.45	10.9	18.1	19.5	7.95

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-36 Water 10-SEP-14 16:48 SRK08-11B	L1516957-37 Water 10-SEP-14 15:59 SRK08-10A	L1516957-38 Water 10-SEP-14 14:53 P05-01-03	L1516957-39 Water 10-SEP-14 14:22 P05-01-05	L1516957-40 Water 10-SEP-14 13:02 P03-09-9
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	1810	3710	3360	3050	1990
	Hardness (as CaCO3) (mg/L)	1230	2300	2330	2190	1310
	pH (pH)	7.47	7.15	7.30	7.03	7.68
	Total Suspended Solids (mg/L)	3.0	295	57.6	12.8	271
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	23.8	116	70.1	115	30.5
	Alkalinity, Total (as CaCO3) (mg/L)	160	944	425	394	350
	Chloride (Cl) (mg/L)	<5.0 ^{DLA}	164	<10 ^{DLA}	<10 ^{DLA}	<5.0 ^{DLA}
	Sulfate (SO4) (mg/L)	1080	1860	2250	1980	1040
	Anion Sum (meq/L)	25.6	62.3	55.4	49.2	28.6
	Cation Sum (meq/L)	25.3	53.1	52.2	48.7	28.2
	Cation - Anion Balance (%)	-0.5	-8.0	-3.0	-0.5	-0.8
Total Metals	Aluminum (Al)-Total (mg/L)	0.0566	8.95	0.693	0.022	4.69
	Antimony (Sb)-Total (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	0.00069
	Arsenic (As)-Total (mg/L)	<0.00020 ^{DLA}	0.00270	0.00063	0.00658	0.00197
	Barium (Ba)-Total (mg/L)	0.0681	0.0737	0.0345	0.0209	0.118
	Beryllium (Be)-Total (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	0.00021
	Bismuth (Bi)-Total (mg/L)	<0.0010 ^{DLA}	<0.0025 ^{DLA}	<0.0025 ^{DLA}	<0.0025 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Total (mg/L)	<0.020 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.00238	0.000940	<0.000050 ^{DLA}	0.000770	0.0289
	Calcium (Ca)-Total (mg/L)	302	762	697	624	364
	Chromium (Cr)-Total (mg/L)	<0.00020 ^{DLA}	0.0123	0.00242	<0.00050 ^{DLA}	0.0110
	Cobalt (Co)-Total (mg/L)	0.00113	0.00370	0.00083	0.0233	0.00922
	Copper (Cu)-Total (mg/L)	0.0019	0.0077	0.0036	0.0027	0.0313
	Iron (Fe)-Total (mg/L)	0.126	7.25	34.9	30.5	6.72
	Lead (Pb)-Total (mg/L)	0.00045	0.0145	0.00216	0.00036	0.0101
	Lithium (Li)-Total (mg/L)	0.0192	0.0233	0.0323	0.0310	0.0211
	Magnesium (Mg)-Total (mg/L)	104	106	151	138	77.8
	Manganese (Mn)-Total (mg/L)	1.23	0.146	46.8	46.8	16.8
	Mercury (Hg)-Total (mg/L)	<0.000010	0.000020	<0.000010	<0.000010	0.000020
	Molybdenum (Mo)-Total (mg/L)	0.00019	0.00085	0.00095	0.00083	0.00139
	Nickel (Ni)-Total (mg/L)	0.0393	0.0250	<0.0025 ^{DLA}	0.0213	0.0421
	Phosphorus (P)-Total (mg/L)	<0.050	0.085	<0.050	<0.050	0.303
	Potassium (K)-Total (mg/L)	4.72	15.8	8.17	7.97	5.84
	Selenium (Se)-Total (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	0.00035
	Silicon (Si)-Total (mg/L)	8.15	22.4	13.0	11.0	16.6
	Silver (Ag)-Total (mg/L)	<0.000020 ^{DLA}	0.000067	<0.000050 ^{DLA}	<0.000050 ^{DLA}	0.000136
	Sodium (Na)-Total (mg/L)	14.9	176	39.7	38.2	29.6

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-41 Water 10-SEP-14 12:43 P03-09-6	L1516957-42 Water 10-SEP-14 10:50 P01-11	L1516957-43 Water 10-SEP-14 10:50 DUP3	L1516957-44 Water 10-SEP-14 09:58 P09-C2	L1516957-45 Water 10-SEP-14 09:07 P09-C3
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	1830	3350	3360	2550	1360
	Hardness (as CaCO3) (mg/L)	1190	2110	2480	986	734
	pH (pH)	7.76	6.71	6.96	7.00	7.42
	Total Suspended Solids (mg/L)	32.4	77.3	79.3	53.4	6.0
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	24.1	137	139	211	52.8
	Alkalinity, Total (as CaCO3) (mg/L)	356	445	439	1740	706
	Chloride (Cl) (mg/L)	<5.0 ^{DLA}	<10 ^{DLA}	<10 ^{DLA}	26 ^{DLA}	5.3
	Sulfate (SO4) (mg/L)	903	2200	2190	<10 ^{DLA}	245
	Anion Sum (meq/L)	25.9	54.7	54.4	35.5	19.4
	Cation Sum (meq/L)	25.7	49.7	57.6	33.7	17.5
	Cation - Anion Balance (%)	-0.3	-4.8	2.9	-2.6	-5.1
Total Metals	Aluminum (Al)-Total (mg/L)	0.628	0.659	0.695	0.860	0.0512
	Antimony (Sb)-Total (mg/L)	0.00024	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Total (mg/L)	0.00087	0.0456	0.0467	0.00104	0.00108
	Barium (Ba)-Total (mg/L)	0.0461	0.0392	0.0409	0.669	0.102
	Beryllium (Be)-Total (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	0.00247 ^{DLA}	0.00017
	Bismuth (Bi)-Total (mg/L)	<0.0010 ^{DLA}	<0.0025 ^{DLA}	<0.0025 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Total (mg/L)	<0.020 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	0.089 ^{DLA}	0.025
	Cadmium (Cd)-Total (mg/L)	0.0110	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Calcium (Ca)-Total (mg/L)	315	637	676	204	170
	Chromium (Cr)-Total (mg/L)	0.00216	0.00210	0.00189	0.00177	0.00029
	Cobalt (Co)-Total (mg/L)	0.00231	0.0138 ^{DLA}	0.0141	0.00034 ^{DLA}	0.00012
	Copper (Cu)-Total (mg/L)	0.0081	<0.0025 ^{DLA}	0.0028	<0.0010 ^{DLA}	<0.00050
	Iron (Fe)-Total (mg/L)	1.38	75.5	79.3	3.98	2.59
	Lead (Pb)-Total (mg/L)	0.00165	0.00388	0.00410	0.00079	0.000127
	Lithium (Li)-Total (mg/L)	0.0190	0.0218	0.0244	0.788	0.0969
	Magnesium (Mg)-Total (mg/L)	69.4	140	154	105	66.6
	Manganese (Mn)-Total (mg/L)	12.1	43.9	44.6	0.122	0.379
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00130	0.00095	0.00094	0.00018	0.000206
	Nickel (Ni)-Total (mg/L)	0.0216	0.0300	0.0307	0.0013	0.00066
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	4.60	7.63	8.50	11.4	3.66
	Selenium (Se)-Total (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Silicon (Si)-Total (mg/L)	8.47	12.7 ^{DLA}	13.7 ^{DLA}	11.2	8.28
	Silver (Ag)-Total (mg/L)	0.000042	<0.000050 ^{DLA}	<0.000050 ^{DLA}	0.000393	0.000088
	Sodium (Na)-Total (mg/L)	28.4	39.3	40.5	301	62.2

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-1 Water 09-SEP-14 14:42 P09-SIS2	L1516957-2 Water 09-SEP-14 15:17 P09-SIS3	L1516957-3 Water 09-SEP-14 18:20 SRK05-SP-4A	L1516957-4 Water 09-SEP-14 17:40 SRK05-SP-4B	L1516957-5 Water 09-SEP-14 16:50 P09-SIS1
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	2.49	2.72	0.597	2.60	2.60
	Sulfur (S)-Total (mg/L)	4020	3910	194	2250	2730
	Thallium (Tl)-Total (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.000050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Titanium (Ti)-Total (mg/L)	<1.0 ^{DLA}	<1.0 ^{DLA}	<0.050 ^{DLA}	<0.50 ^{DLA}	<0.50 ^{DLA}
	Uranium (U)-Total (mg/L)	0.0017	0.0019	0.00182	0.00352	0.00290
	Vanadium (V)-Total (mg/L)	<0.10 ^{DLA}	<0.10 ^{DLA}	<0.0050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}
	Zinc (Zn)-Total (mg/L)	909	1010	21.5	378	391
	Zirconium (Zr)-Total (mg/L)	<0.080 ^{DLA}	<0.080 ^{DLA}	<0.0040 ^{DLA}	<0.040 ^{DLA}	<0.040 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.84	0.14	0.0232	<0.050 ^{DLA}	<0.050 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.000050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.000050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Barium (Ba)-Dissolved (mg/L)	0.0231	0.0214	0.00995	0.0161	0.0306
	Beryllium (Be)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	0.00077	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.0025 ^{DLA}	<0.025 ^{DLA}	<0.025 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<1.0 ^{DLA}	<1.0 ^{DLA}	<0.050 ^{DLA}	<0.50 ^{DLA}	<0.50 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.568	0.636	0.00412	0.0740	0.0536
	Calcium (Ca)-Dissolved (mg/L)	497	494	137	523	510
	Chromium (Cr)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.000050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	2.79	2.54	0.0548	0.0185	0.793
	Copper (Cu)-Dissolved (mg/L)	0.024	0.031	<0.0010 ^{DLA}	0.011	<0.010 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	0.256	<0.050 ^{DLA}	12.2	3.36	19.3
	Lead (Pb)-Dissolved (mg/L)	<0.0050 ^{DLA}	<0.0050 ^{DLA}	0.00026	<0.0025 ^{DLA}	<0.0025 ^{DLA}
	Lithium (Li)-Dissolved (mg/L)	0.212	0.224	0.0813	0.151	0.236
	Magnesium (Mg)-Dissolved (mg/L)	2210	2170	107	1230	1690
	Manganese (Mn)-Dissolved (mg/L)	197	223	5.87	62.0	137
	Mercury (Hg)-Dissolved (mg/L)	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}
	Molybdenum (Mo)-Dissolved (mg/L)	<0.0050	<0.0050	<0.00025	<0.0025	<0.0025
	Nickel (Ni)-Dissolved (mg/L)	4.29	4.86	0.143	2.34	1.62
	Phosphorus (P)-Dissolved (mg/L)	<0.25 ^{DLA}	<0.25 ^{DLA}	<0.050	<0.25 ^{DLA}	<0.25 ^{DLA}
	Potassium (K)-Dissolved (mg/L)	18.1	19.5	5.39	11.6	12.5
	Selenium (Se)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.000050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Silicon (Si)-Dissolved (mg/L)	13.5	14.5	13.2	12.3	11.6
	Silver (Ag)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	69.1	71.2	11.1	38.7	62.7

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-6 Water 09-SEP-14 16:32 P09-SIS4	L1516957-7 Water 09-SEP-14 16:22 P09-SIS5	L1516957-8 Water 09-SEP-14 13:40 SRK05-SP-5	L1516957-9 Water 09-SEP-14 11:20 SRK08-SP-7B	L1516957-10 Water 09-SEP-14 11:54 SRK08-SP-7A
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	2.33	1.90	2.25	0.125	0.438
	Sulfur (S)-Total (mg/L)	1530	1200	3130	20.7	118
	Thallium (Tl)-Total (mg/L)	<0.00010 ^{DLA}	0.000051 ^{DLA}	<0.0010 ^{DLA}	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	<0.0010 ^{DLA}	<0.00050 ^{DLA}	<0.010 ^{DLA}	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.10 ^{DLA}	<0.050 ^{DLA}	<1.0 ^{DLA}	<0.010	<0.010
	Uranium (U)-Total (mg/L)	0.0167	0.0121	0.0025	0.000170	0.000356
	Vanadium (V)-Total (mg/L)	<0.010 ^{DLA}	<0.0050 ^{DLA}	<0.10 ^{DLA}	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	77.6	15.8	854	2.06	0.423
	Zirconium (Zr)-Total (mg/L)	<0.0080 ^{DLA}	<0.0040 ^{DLA}	<0.080 ^{DLA}	<0.00080	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.010 ^{DLA}	0.0119 ^{DLA}	<0.10 ^{DLA}	0.0197	0.0054
	Antimony (Sb)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.00050 ^{DLA}	<0.010 ^{DLA}	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	<0.0010 ^{DLA}	0.00086	<0.010 ^{DLA}	0.00307	0.00420
	Barium (Ba)-Dissolved (mg/L)	0.0133	0.0206	0.0174	0.0638	0.0167
	Beryllium (Be)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.00050 ^{DLA}	<0.010 ^{DLA}	<0.00010	0.00024
	Bismuth (Bi)-Dissolved (mg/L)	<0.0050 ^{DLA}	<0.0025 ^{DLA}	<0.050 ^{DLA}	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.10 ^{DLA}	<0.050 ^{DLA}	<1.0 ^{DLA}	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.0171	0.00128	0.354	<0.000010	0.000026
	Calcium (Ca)-Dissolved (mg/L)	472	482	450	14.6	108
	Chromium (Cr)-Dissolved (mg/L)	0.0016 ^{DLA}	<0.00050 ^{DLA}	<0.010 ^{DLA}	0.00034	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	<0.0010 ^{DLA}	0.0336	2.47 ^{DLA}	0.00105	0.00536
	Copper (Cu)-Dissolved (mg/L)	0.0054 ^{DLA}	0.0013	<0.020 ^{DLA}	0.00043	<0.00020
	Iron (Fe)-Dissolved (mg/L)	<0.030 ^{DLA}	15.1 ^{DLA}	0.464 ^{DLA}	3.46	12.3
	Lead (Pb)-Dissolved (mg/L)	<0.00050 ^{DLA}	<0.00025 ^{DLA}	<0.0050 ^{DLA}	0.000057	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.107	0.0478	0.191	0.0183	0.0393
	Magnesium (Mg)-Dissolved (mg/L)	956	660	1830	23.1	41.6
	Manganese (Mn)-Dissolved (mg/L)	10.3	34.6	169	1.55	1.12
	Mercury (Hg)-Dissolved (mg/L)	<0.000010 ^{DLA}	<0.000010	<0.000010 ^{DLA}	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	<0.00050	0.00088	<0.0050	0.000318	0.000109
	Nickel (Ni)-Dissolved (mg/L)	0.518 ^{DLA}	0.156 ^{DLA}	3.71 ^{DLA}	0.00827	0.0132
	Phosphorus (P)-Dissolved (mg/L)	<0.15 ^{DLA}	<0.10 ^{DLA}	<0.25 ^{DLA}	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	10.0	9.32	16.7	1.98	3.79
	Selenium (Se)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.00050 ^{DLA}	<0.010 ^{DLA}	<0.00010	<0.00010
	Silicon (Si)-Dissolved (mg/L)	10.7	10.9	13.7	8.09	11.4
	Silver (Ag)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.000050 ^{DLA}	<0.0010 ^{DLA}	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	35.9	67.1	62.5	2.78	8.07

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-11 Water 09-SEP-14 11:20 DUP2	L1516957-12 Water 09-SEP-14 18:16 P01-04A	L1516957-13 Water 09-SEP-14 16:46 P01-04B	L1516957-14 Water 09-SEP-14 16:00 X25-96B	L1516957-15 Water 09-SEP-14 15:28 X25-96A
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.120	1.91	1.36	0.637	0.806
	Sulfur (S)-Total (mg/L)	20.6	10.2	460	250	263
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}
	Uranium (U)-Total (mg/L)	0.000174	0.000297	0.00704	0.00677	0.0120
	Vanadium (V)-Total (mg/L)	<0.0010	0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}
	Zinc (Zn)-Total (mg/L)	2.11	<0.0030	<0.0060 ^{DLA}	<0.0060 ^{DLA}	<0.0060 ^{DLA}
	Zirconium (Zr)-Total (mg/L)	<0.00080	0.0692	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.0016 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0192	0.0020	<0.0020 ^{DLA}	<0.0020 ^{DLA}	0.0020 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00307	<0.00010	0.00197	0.00120	0.00029
	Barium (Ba)-Dissolved (mg/L)	0.0642	0.435	0.0183	0.0273	0.0649
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	0.00027	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.010	0.021	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	<0.000010	0.000014	<0.000020 ^{DLA}	<0.000020 ^{DLA}	0.000133
	Calcium (Ca)-Dissolved (mg/L)	15.1	141	536	319	318
	Chromium (Cr)-Dissolved (mg/L)	0.00034	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	0.00102	0.00013	0.00222	<0.00020 ^{DLA}	0.0119 ^{DLA}
	Copper (Cu)-Dissolved (mg/L)	0.00042	<0.00020	<0.00040 ^{DLA}	<0.00040 ^{DLA}	<0.00040 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	3.61	0.449	15.7	2.64	5.47
	Lead (Pb)-Dissolved (mg/L)	0.000050	<0.000050	<0.00010 ^{DLA}	<0.00010 ^{DLA}	<0.00010 ^{DLA}
	Lithium (Li)-Dissolved (mg/L)	0.0182	0.168	0.0222	0.0100	0.0053
	Magnesium (Mg)-Dissolved (mg/L)	24.3	49.2	91.6	45.9	68.3
	Manganese (Mn)-Dissolved (mg/L)	1.59	0.255	9.62	0.278	16.6
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.000317	<0.000050	0.00045	0.00033	0.00116
	Nickel (Ni)-Dissolved (mg/L)	0.00806	<0.00050	0.0035	<0.0010 ^{DLA}	0.0071
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	2.13	3.47	6.05	4.30	5.39
	Selenium (Se)-Dissolved (mg/L)	<0.00010	0.00044 ^{DTC}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Silicon (Si)-Dissolved (mg/L)	8.46	8.60	8.27	4.77	8.81
	Silver (Ag)-Dissolved (mg/L)	<0.000010	0.000136	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	2.81	64.9	40.6	49.5	20.9

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-16 Water 09-SEP-14 14:23 P01-03	L1516957-17 Water 09-SEP-14 18:32 X24-96D	L1516957-18 Water 09-SEP-14 11:12 P01-01A	L1516957-19 Water 09-SEP-14 12:04 P01-01B	L1516957-20 Water 09-SEP-14 12:04 DUP1
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	2.27	2.09	1.04	0.926	0.906
	Sulfur (S)-Total (mg/L)	823	747	284	200	191
	Thallium (Tl)-Total (mg/L)	<0.00010 ^{DLA}	0.00024 ^{DLA}	<0.000020 ^{DLA}	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.10 ^{DLA}	<0.10 ^{DLA}	<0.020 ^{DLA}	<0.010	<0.010
	Uranium (U)-Total (mg/L)	0.00430	0.00334	0.00855	0.0103	0.0102
	Vanadium (V)-Total (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.0020 ^{DLA}	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	0.332	0.251	<0.0060 ^{DLA}	<0.0030	<0.0030
	Zirconium (Zr)-Total (mg/L)	<0.0080 ^{DLA}	<0.0080 ^{DLA}	<0.0016 ^{DLA}	0.00110	0.00111
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.010 ^{DLA}	0.012 ^{DLA}	<0.0020 ^{DLA}	0.0012	0.0013
	Antimony (Sb)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	0.00023	0.00246	0.00198
	Barium (Ba)-Dissolved (mg/L)	0.0133	0.0238	0.0496	0.0556	0.0532
	Beryllium (Be)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.0050 ^{DLA}	<0.0050 ^{DLA}	<0.0010 ^{DLA}	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.10 ^{DLA}	<0.10 ^{DLA}	<0.020 ^{DLA}	0.012	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.00216	0.00711	0.000905	<0.000010	<0.000010
	Calcium (Ca)-Dissolved (mg/L)	613	638	350	270	266
	Chromium (Cr)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.233	0.300	0.00230	0.00017	0.00020
	Copper (Cu)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.0020 ^{DLA}	0.00041	<0.00020	<0.00020
	Iron (Fe)-Dissolved (mg/L)	223	8.93	<0.010	0.702	0.685
	Lead (Pb)-Dissolved (mg/L)	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00010 ^{DLA}	<0.000050	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.0280	0.0273	0.0149	0.0126	0.0102
	Magnesium (Mg)-Dissolved (mg/L)	199	166	77.8	55.4	53.5
	Manganese (Mn)-Dissolved (mg/L)	90.0	87.0	8.30	0.139	0.142
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00074	0.00076	0.00080	0.000803	0.000846
	Nickel (Ni)-Dissolved (mg/L)	0.0883	0.503	0.0112	0.00061	0.00064
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	7.87	8.02	6.73	4.61	4.39
	Selenium (Se)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010
	Silicon (Si)-Dissolved (mg/L)	11.6	9.46	7.37	5.88	5.68
	Silver (Ag)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.00010 ^{DLA}	<0.000020 ^{DLA}	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	31.4	44.3	16.9	21.5	24.1

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-21 Water 09-SEP-14 14:30 FB2	L1516957-22 Water 10-SEP-14 10:23 SRK08-SP-8B	L1516957-23 Water 10-SEP-14 09:52 SRK08-SP-8A	L1516957-24 Water 10-SEP-14 08:42 P96-7	L1516957-25 Water 10-SEP-14 15:06 SRK05-SP-3B
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	<0.00020	1.45	1.94	0.587	0.706
	Sulfur (S)-Total (mg/L)	<0.50	512	528	662	134
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Total (mg/L)	<0.000010	0.00340 ^{DLA}	0.00187 ^{DLA}	0.0250 ^{DLA}	0.00188
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Total (mg/L)	<0.0030	0.655 ^{DLA}	0.464 ^{DLA}	<0.0060 ^{DLA}	0.983
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.0010	0.0130 ^{DLA}	0.0047 ^{DLA}	<0.0020 ^{DLA}	0.0297
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Dissolved (mg/L)	<0.00010	0.00451	0.00968	<0.00020 ^{DLA}	0.00020
	Barium (Ba)-Dissolved (mg/L)	<0.000050	0.0138 ^{DLA}	0.0126	0.0120 ^{DLA}	0.0169
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00020 ^{DLA}	0.00046 ^{DLA}	<0.00020 ^{DLA}	0.00055
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	<0.000010	0.000058	<0.000020 ^{DLA}	0.000046	0.000063
	Calcium (Ca)-Dissolved (mg/L)	<0.050	363 ^{DLA}	416	516	171
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00020 ^{DLA}	0.00025	0.00048 ^{DLA}	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	0.00847 ^{DLA}	0.00804 ^{DLA}	<0.00020 ^{DLA}	0.00598
	Copper (Cu)-Dissolved (mg/L)	<0.00020	<0.00040 ^{DLA}	<0.00040 ^{DLA}	0.00043	<0.00020
	Iron (Fe)-Dissolved (mg/L)	<0.010	31.7 ^{DLA}	35.2 ^{DLA}	<0.010 ^{DLA}	17.1
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.00010 ^{DLA}	<0.00010 ^{DLA}	<0.00010 ^{DLA}	0.000170
	Lithium (Li)-Dissolved (mg/L)	<0.00050	0.0729	0.114	0.0247	0.0558
	Magnesium (Mg)-Dissolved (mg/L)	<0.10	225	193	236	62.3
	Manganese (Mn)-Dissolved (mg/L)	<0.000050	6.52	3.03	0.00062	1.41
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	<0.000050	0.00019	0.00018	0.00088 ^{DLA}	0.000099
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	0.0183	0.0249	<0.0010 ^{DLA}	0.0168
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	<0.10	5.59	5.77	5.85	5.20
	Selenium (Se)-Dissolved (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00037	<0.00010
	Silicon (Si)-Dissolved (mg/L)	<0.050	13.3 ^{DLA}	14.2 ^{DLA}	6.23 ^{DLA}	12.5
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Dissolved (mg/L)	<0.050	21.3	27.0	22.2	8.39

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-26 Water 10-SEP-14 15:35 SRK05-SP-3A	L1516957-27 Water 10-SEP-14 14:30 S1A	L1516957-28 Water 10-SEP-14 13:21 SRK08-SBR4	L1516957-29 Water 10-SEP-14 12:27 S2A	L1516957-30 Water 10-SEP-14 11:28 S2B
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.974	1.03	2.23	1.01	2.22
	Sulfur (S)-Total (mg/L)	232	636	2740	355	2780
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.00010 ^{DLA}	<0.00050 ^{DLA}	0.000036 ^{DLA}	<0.0010 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.00010	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020	<0.010 ^{DLA}
	Titanium (Ti)-Total (mg/L)	<0.010	<0.10 ^{DLA}	<0.50 ^{DLA}	0.038	<1.0 ^{DLA}
	Uranium (U)-Total (mg/L)	0.00231	0.00361 ^{DLA}	0.00141 ^{DLA}	0.00455	<0.0010 ^{DLA}
	Vanadium (V)-Total (mg/L)	<0.0010	<0.010	<0.050	0.0023	<0.10
	Zinc (Zn)-Total (mg/L)	1.57	63.8 ^{DLA}	550 ^{DLA}	6.58 ^{DLA}	609 ^{DLA}
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.0080	<0.040	<0.0016	<0.080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0313	0.027 ^{DLA}	<0.050 ^{DLA}	0.0080 ^{DLA}	<0.10 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020 ^{DLA}	<0.010 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00269	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020	<0.010 ^{DLA}
	Barium (Ba)-Dissolved (mg/L)	0.0160	0.0150 ^{DLA}	0.0149 ^{DLA}	0.0153 ^{DLA}	0.0294 ^{DLA}
	Beryllium (Be)-Dissolved (mg/L)	0.00124	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020 ^{DLA}	<0.010 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.0050 ^{DLA}	<0.025 ^{DLA}	<0.0010 ^{DLA}	<0.050 ^{DLA}
	Boron (B)-Dissolved (mg/L)	0.010	<0.10 ^{DLA}	<0.50 ^{DLA}	<0.020 ^{DLA}	<1.0 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.000053	0.00620	0.142	0.00114	0.125
	Calcium (Ca)-Dissolved (mg/L)	237	352 ^{DLA}	451 ^{DLA}	306 ^{DLA}	549 ^{DLA}
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020 ^{DLA}	<0.010 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	0.00563	0.168 ^{DLA}	1.88	0.0291	1.76 ^{DLA}
	Copper (Cu)-Dissolved (mg/L)	<0.00020	<0.0020 ^{DLA}	0.010	0.00042	<0.020 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	31.0	23.3 ^{DLA}	1.79 ^{DLA}	23.8	9.09 ^{DLA}
	Lead (Pb)-Dissolved (mg/L)	0.000211	<0.00050 ^{DLA}	<0.0025 ^{DLA}	0.00043	<0.0050 ^{DLA}
	Lithium (Li)-Dissolved (mg/L)	0.0644	0.0786	0.220	0.0561	0.157
	Magnesium (Mg)-Dissolved (mg/L)	89.4	307	1540	145	1570
	Manganese (Mn)-Dissolved (mg/L)	1.45	22.1	118	5.55	148
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}
	Molybdenum (Mo)-Dissolved (mg/L)	0.000145	<0.00050 ^{DLA}	<0.0025 ^{DLA}	<0.00010	<0.0050
	Nickel (Ni)-Dissolved (mg/L)	0.0178	0.292	2.72 ^{DLA}	0.0574	2.77 ^{DLA}
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.25 ^{DLA}	<0.050	<0.25 ^{DLA}
	Potassium (K)-Dissolved (mg/L)	5.23	7.75 ^{DLA}	16.0 ^{DLA}	5.96 ^{DLA}	14.2 ^{DLA}
	Selenium (Se)-Dissolved (mg/L)	<0.00010	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020 ^{DLA}	<0.010 ^{DLA}
	Silicon (Si)-Dissolved (mg/L)	12.7	14.7 ^{DLA}	12.5 ^{DLA}	13.6 ^{DLA}	11.5 ^{DLA}
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.00010 ^{DLA}	<0.00050 ^{DLA}	<0.000020	<0.0010
	Sodium (Na)-Dissolved (mg/L)	9.64	16.2	69.7	14.0	51.2

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-31 Water 10-SEP-14 17:40 MW14-11	L1516957-32 Water 10-SEP-14 17:00 MW14-08	L1516957-33 Water 10-SEP-14 16:22 SRK05-SP-1A	L1516957-34 Water 10-SEP-14 08:42 DUP4	L1516957-35 Water 10-SEP-14 17:17 SRK08-11A
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.542	0.386	1.48	0.614	0.840
	Sulfur (S)-Total (mg/L)	5.41	7.99	432	601	184
	Thallium (Tl)-Total (mg/L)	<0.000010	0.000130	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Total (mg/L)	0.00026	0.00035	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Total (mg/L)	0.011	0.253	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Total (mg/L)	0.00314	0.00230	0.000589	0.0253	0.00243
	Vanadium (V)-Total (mg/L)	<0.0010	0.0183	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Total (mg/L)	0.0110	0.0846	2.35	<0.0060 ^{DLA}	0.0410
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0039	0.0154	0.110	<0.0020 ^{DLA}	0.0014
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00566	0.00384	0.00537	<0.00020 ^{DLA}	0.00012
	Barium (Ba)-Dissolved (mg/L)	0.132	0.214	0.0134	0.0118	0.127
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	0.00277	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Dissolved (mg/L)	0.021	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	<0.000010	<0.000010	0.000054	0.000047	0.000049
	Calcium (Ca)-Dissolved (mg/L)	79.5	86.5	342	453	222
	Chromium (Cr)-Dissolved (mg/L)	0.00016	0.00018	<0.00020 ^{DLA}	0.00047 ^{DLA}	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00242	0.00149	0.00769	<0.00020 ^{DLA}	<0.00010
	Copper (Cu)-Dissolved (mg/L)	<0.00020	<0.00020	<0.00040 ^{DLA}	0.00041	0.00131
	Iron (Fe)-Dissolved (mg/L)	6.04	9.97	84.3	<0.010	<0.010
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	0.00017	<0.00010 ^{DLA}	0.000120
	Lithium (Li)-Dissolved (mg/L)	0.0113	0.00638	0.0987	0.0301	0.0151
	Magnesium (Mg)-Dissolved (mg/L)	48.9	12.5	142	194	51.9
	Manganese (Mn)-Dissolved (mg/L)	0.950	2.58	2.73	0.00069	0.000436
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00272	0.000223	0.00014	0.00090	0.000176
	Nickel (Ni)-Dissolved (mg/L)	0.00305	0.00060	0.0301	<0.0010 ^{DLA}	0.00250
	Phosphorus (P)-Dissolved (mg/L)	<0.050	0.139	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	3.10	1.42	6.06	4.50	3.80
	Selenium (Se)-Dissolved (mg/L)	0.00015	0.00019	<0.00020 ^{DLA}	0.00042	0.00016
	Silicon (Si)-Dissolved (mg/L)	7.19	8.20	14.7	5.24	6.84
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Dissolved (mg/L)	4.64	10.5	17.9	20.0	7.85

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-36 Water 10-SEP-14 16:48 SRK08-11B	L1516957-37 Water 10-SEP-14 15:59 SRK08-10A	L1516957-38 Water 10-SEP-14 14:53 P05-01-03	L1516957-39 Water 10-SEP-14 14:22 P05-01-05	L1516957-40 Water 10-SEP-14 13:02 P03-09-9
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	1.19	1.67	1.64	1.83	0.843
	Sulfur (S)-Total (mg/L)	326	576	642	596	313
	Thallium (Tl)-Total (mg/L)	0.000036 ^{DLA}	0.000070 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}	0.000088 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.00020 ^{DLA}	0.00066 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	0.00035 ^{DLA}
	Titanium (Ti)-Total (mg/L)	<0.020 ^{DLA}	0.351 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	0.200 ^{DLA}
	Uranium (U)-Total (mg/L)	0.00142 ^{DLA}	0.0407 ^{DLA}	0.00108 ^{DLA}	0.00581 ^{DLA}	0.00994 ^{DLA}
	Vanadium (V)-Total (mg/L)	<0.0020 ^{DLA}	0.0114 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}	0.0136 ^{DLA}
	Zinc (Zn)-Total (mg/L)	1.53 ^{DLA}	1.20 ^{DLA}	<0.015 ^{DLA}	<0.015 ^{DLA}	0.0718 ^{DLA}
	Zirconium (Zr)-Total (mg/L)	<0.0016 ^{DLA}	<0.0040 ^{DLA}	<0.0040 ^{DLA}	<0.0040 ^{DLA}	<0.0016 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.0020 ^{DLA}	0.0068 ^{DLA}	0.0312 ^{DLA}	<0.0050 ^{DLA}	<0.0020 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	0.00562 ^{DLA}	<0.00020 ^{DLA}
	Barium (Ba)-Dissolved (mg/L)	0.0654 ^{DLA}	0.0207 ^{DLA}	0.0259 ^{DLA}	0.0190 ^{DLA}	0.0278 ^{DLA}
	Beryllium (Be)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0025 ^{DLA}	<0.0025 ^{DLA}	<0.0025 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.00223 ^{DLA}	0.000377 ^{DLA}	<0.000050 ^{DLA}	0.000401 ^{DLA}	0.000467 ^{DLA}
	Calcium (Ca)-Dissolved (mg/L)	310 ^{DLA}	759 ^{DLA}	684 ^{DLA}	633 ^{DLA}	393 ^{DLA}
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	0.00056 ^{DLA}	0.00083 ^{DLA}	<0.00050 ^{DLA}	0.0216 ^{DLA}	0.00507 ^{DLA}
	Copper (Cu)-Dissolved (mg/L)	0.00164 ^{DLA}	0.0022 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00040 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	32.8 ^{DLA}	31.1 ^{DLA}	0.096 ^{DLA}
	Lead (Pb)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.00025 ^{DLA}	<0.00025 ^{DLA}	<0.00025 ^{DLA}	<0.00010 ^{DLA}
	Lithium (Li)-Dissolved (mg/L)	0.0196 ^{DLA}	0.0090 ^{DLA}	0.0319 ^{DLA}	0.0294 ^{DLA}	0.0146 ^{DLA}
	Magnesium (Mg)-Dissolved (mg/L)	110 ^{DLA}	97.0 ^{DLA}	152 ^{DLA}	147 ^{DLA}	78.7 ^{DLA}
	Manganese (Mn)-Dissolved (mg/L)	1.11 ^{DLA}	0.0132 ^{DLA}	48.1 ^{DLA}	43.8 ^{DLA}	17.4 ^{DLA}
	Mercury (Hg)-Dissolved (mg/L)	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010 ^{DLA}
	Molybdenum (Mo)-Dissolved (mg/L)	0.00017 ^{DLA}	0.00028 ^{DLA}	0.00062 ^{DLA}	0.00079 ^{DLA}	0.00096 ^{DLA}
	Nickel (Ni)-Dissolved (mg/L)	0.0371 ^{DLA}	0.0109 ^{DLA}	<0.0025 ^{DLA}	0.0199 ^{DLA}	0.0292 ^{DLA}
	Phosphorus (P)-Dissolved (mg/L)	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}
	Potassium (K)-Dissolved (mg/L)	4.88 ^{DLA}	14.0 ^{DLA}	7.67 ^{DLA}	8.04 ^{DLA}	5.26 ^{DLA}
	Selenium (Se)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}
	Silicon (Si)-Dissolved (mg/L)	8.36 ^{DLA}	9.52 ^{DLA}	11.4 ^{DLA}	11.0 ^{DLA}	8.53 ^{DLA}
	Silver (Ag)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000020 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	14.8 ^{DLA}	158 ^{DLA}	41.7 ^{DLA}	35.6 ^{DLA}	30.3 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-41 Water 10-SEP-14 12:43 P03-09-6	L1516957-42 Water 10-SEP-14 10:50 P01-11	L1516957-43 Water 10-SEP-14 10:50 DUP3	L1516957-44 Water 10-SEP-14 09:58 P09-C2	L1516957-45 Water 10-SEP-14 09:07 P09-C3
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.809	1.56	1.69	4.33	2.32
	Sulfur (S)-Total (mg/L)	267	630	673	3.38	75.1
	Thallium (Tl)-Total (mg/L)	0.000064	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}	0.00011
	Titanium (Ti)-Total (mg/L)	<0.020 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Total (mg/L)	0.00875	0.0107	0.0112	0.000604	0.000952
	Vanadium (V)-Total (mg/L)	<0.0020 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Total (mg/L)	0.0197	<0.015 ^{DLA}	<0.015 ^{DLA}	<0.0060 ^{DLA}	0.0033
	Zirconium (Zr)-Total (mg/L)	<0.0016 ^{DLA}	<0.0040 ^{DLA}	<0.0040 ^{DLA}	0.0826	0.0355
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0035	<0.0050 ^{DLA}	<0.0050 ^{DLA}	0.0132	0.0014
	Antimony (Sb)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Dissolved (mg/L)	<0.00020	0.0459	0.0456	<0.00020	0.00100
	Barium (Ba)-Dissolved (mg/L)	0.0350	0.0282	0.0271	0.708	0.100
	Beryllium (Be)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	0.00262	0.00017
	Bismuth (Bi)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0025 ^{DLA}	<0.0025 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	0.092	0.017
	Cadmium (Cd)-Dissolved (mg/L)	0.000047	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Calcium (Ca)-Dissolved (mg/L)	353	623	720	216	180
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00184	0.0138	0.0138	<0.00020 ^{DLA}	<0.00010
	Copper (Cu)-Dissolved (mg/L)	<0.00040 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00040 ^{DLA}	<0.00020
	Iron (Fe)-Dissolved (mg/L)	0.128	70.2	82.7	3.25	2.71
	Lead (Pb)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.00025 ^{DLA}	<0.00025 ^{DLA}	<0.00010 ^{DLA}	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.0195	0.0223	0.0231	0.856	0.0941
	Magnesium (Mg)-Dissolved (mg/L)	75.8	135	164	108	69.3
	Manganese (Mn)-Dissolved (mg/L)	12.9	45.3	46.2	0.120	0.370
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00110	0.00085	0.00080	<0.00010 ^{DLA}	0.000161
	Nickel (Ni)-Dissolved (mg/L)	0.0199	0.0293	0.0295	<0.0010 ^{DLA}	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	4.94	6.90	8.89	11.6	3.79
	Selenium (Se)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Silicon (Si)-Dissolved (mg/L)	8.12	11.1	13.1	10.2	8.58
	Silver (Ag)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}	0.000295	0.000048
	Sodium (Na)-Dissolved (mg/L)	30.2	42.5	42.1	311	58.9

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-1 Water 09-SEP-14 14:42 P09-SIS2	L1516957-2 Water 09-SEP-14 15:17 P09-SIS3	L1516957-3 Water 09-SEP-14 18:20 SRK05-SP-4A	L1516957-4 Water 09-SEP-14 17:40 SRK05-SP-4B	L1516957-5 Water 09-SEP-14 16:50 P09-SIS1
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	2.45	2.68	0.594	2.60	2.73
	Sulfur (S)-Dissolved (mg/L)	3850	3790	190	2200	2840
	Thallium (Tl)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.000050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<1.0 ^{DLA}	<1.0 ^{DLA}	<0.050 ^{DLA}	<0.50 ^{DLA}	<0.50 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.0016	0.0019	0.00184	0.00344	0.00267
	Vanadium (V)-Dissolved (mg/L)	<0.10 ^{DLA}	<0.10 ^{DLA}	<0.0050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	897	999	21.8	373	411
	Zirconium (Zr)-Dissolved (mg/L)	<0.080 ^{DLA}	<0.080 ^{DLA}	<0.0040 ^{DLA}	<0.040 ^{DLA}	<0.040 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-6 Water 09-SEP-14 16:32 P09-SIS4	L1516957-7 Water 09-SEP-14 16:22 P09-SIS5	L1516957-8 Water 09-SEP-14 13:40 SRK05-SP-5	L1516957-9 Water 09-SEP-14 11:20 SRK08-SP-7B	L1516957-10 Water 09-SEP-14 11:54 SRK08-SP-7A
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	2.34	1.89	2.18	0.117	0.440
	Sulfur (S)-Dissolved (mg/L)	1560	1180	3230	20.6	119
	Thallium (Tl)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.000050 ^{DLA}	<0.0010 ^{DLA}	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.00050 ^{DLA}	<0.010 ^{DLA}	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.10 ^{DLA}	<0.050 ^{DLA}	<1.0 ^{DLA}	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)	0.0171	0.0139	0.0023	0.000148	0.000323
	Vanadium (V)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.0050 ^{DLA}	<0.10 ^{DLA}	<0.0010	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	82.8	15.0	787	2.17	0.423
	Zirconium (Zr)-Dissolved (mg/L)	<0.0080 ^{DLA}	<0.0040 ^{DLA}	<0.080 ^{DLA}	<0.00080	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-11 Water 09-SEP-14 11:20 DUP2	L1516957-12 Water 09-SEP-14 18:16 P01-04A	L1516957-13 Water 09-SEP-14 16:46 P01-04B	L1516957-14 Water 09-SEP-14 16:00 X25-96B	L1516957-15 Water 09-SEP-14 15:28 X25-96A
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.115	1.76 ^{DTC}	1.37	0.587	0.758
	Sulfur (S)-Dissolved (mg/L)	20.5	20.5	444 ^{DLA}	244 ^{DLA}	259 ^{DLA}
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.000147	0.000269	0.00678 ^{DLA}	0.00605 ^{DLA}	0.0114 ^{DLA}
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	2.13	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	0.0030 ^{DLA}
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	0.0620	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.0016 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-16 Water 09-SEP-14 14:23 P01-03	L1516957-17 Water 09-SEP-14 18:32 X24-96D	L1516957-18 Water 09-SEP-14 11:12 P01-01A	L1516957-19 Water 09-SEP-14 12:04 P01-01B	L1516957-20 Water 09-SEP-14 12:04 DUP1
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	2.45	2.00	1.04	0.868	0.896
	Sulfur (S)-Dissolved (mg/L)	799	664	286	199	191
	Thallium (Tl)-Dissolved (mg/L)	<0.00010 ^{DLA}	0.00023 ^{DLA}	<0.000020 ^{DLA}	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.10 ^{DLA}	<0.10 ^{DLA}	<0.020 ^{DLA}	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00470	0.00339	0.00862	0.00913	0.0102
	Vanadium (V)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.010 ^{DLA}	<0.0020 ^{DLA}	<0.0010	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	0.339	0.259	0.0034	0.0011	<0.0010
	Zirconium (Zr)-Dissolved (mg/L)	<0.0080 ^{DLA}	<0.0080 ^{DLA}	<0.0016 ^{DLA}	0.00099	0.00107

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-21 Water 09-SEP-14 14:30 FB2	L1516957-22 Water 10-SEP-14 10:23 SRK08-SP-8B	L1516957-23 Water 10-SEP-14 09:52 SRK08-SP-8A	L1516957-24 Water 10-SEP-14 08:42 P96-7	L1516957-25 Water 10-SEP-14 15:06 SRK05-SP-3B
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	<0.00020	1.36	1.89	0.598	0.675
	Sulfur (S)-Dissolved (mg/L)	<0.50	499 ^{DLA}	492 ^{DLA}	645 ^{DLA}	129
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Dissolved (mg/L)	<0.000010	0.00323 ^{DLA}	0.00183 ^{DLA}	0.0250 ^{DLA}	0.00190
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	<0.0010	0.632 ^{DLA}	0.458 ^{DLA}	0.0023 ^{DLA}	0.993
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-26 Water 10-SEP-14 15:35 SRK05-SP-3A	L1516957-27 Water 10-SEP-14 14:30 S1A	L1516957-28 Water 10-SEP-14 13:21 SRK08-SBR4	L1516957-29 Water 10-SEP-14 12:27 S2A	L1516957-30 Water 10-SEP-14 11:28 S2B
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.955	1.11	2.17	1.04	2.36
	Sulfur (S)-Dissolved (mg/L)	219	654	2700	351	2830
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.00010 ^{DLA}	<0.00050 ^{DLA}	<0.000020 ^{DLA}	<0.0010 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.0010 ^{DLA}	<0.0050 ^{DLA}	<0.00020 ^{DLA}	<0.010 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.10 ^{DLA}	<0.50 ^{DLA}	<0.020 ^{DLA}	<1.0 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.00223	0.00340 ^{DLA}	0.00141 ^{DLA}	0.00467 ^{DLA}	<0.0010 ^{DLA}
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.010 ^{DLA}	<0.050 ^{DLA}	<0.0020 ^{DLA}	<0.10 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	1.53	68.5 ^{DLA}	543 ^{DLA}	6.79 ^{DLA}	616 ^{DLA}
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.0080 ^{DLA}	<0.040 ^{DLA}	<0.0016 ^{DLA}	<0.080 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-31 Water 10-SEP-14 17:40 MW14-11	L1516957-32 Water 10-SEP-14 17:00 MW14-08	L1516957-33 Water 10-SEP-14 16:22 SRK05-SP-1A	L1516957-34 Water 10-SEP-14 08:42 DUP4	L1516957-35 Water 10-SEP-14 17:17 SRK08-11A
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.533	0.373	1.50	0.624	0.820
	Sulfur (S)-Dissolved (mg/L)	5.92	8.81	404	549	189
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00326	0.000919	0.000591	0.0259	0.00237
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	0.0053	0.0029	2.29	0.0031	0.0418
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-36 Water 10-SEP-14 16:48 SRK08-11B	L1516957-37 Water 10-SEP-14 15:59 SRK08-10A	L1516957-38 Water 10-SEP-14 14:53 P05-01-03	L1516957-39 Water 10-SEP-14 14:22 P05-01-05	L1516957-40 Water 10-SEP-14 13:02 P03-09-9
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	1.11	1.72	1.64	1.76	0.898
	Sulfur (S)-Dissolved (mg/L)	339	551	639	613	322
	Thallium (Tl)-Dissolved (mg/L)	0.000038	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000020 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.020 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.00139	0.0387	0.00101	0.00553	0.0101
	Vanadium (V)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}	<0.0020 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	1.58	0.305	<0.0050 ^{DLA}	0.0052	0.0033
	Zirconium (Zr)-Dissolved (mg/L)	<0.0016 ^{DLA}	<0.0040 ^{DLA}	<0.0040 ^{DLA}	<0.0040 ^{DLA}	<0.0016 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1516957-41 Water 10-SEP-14 12:43 P03-09-6	L1516957-42 Water 10-SEP-14 10:50 P01-11	L1516957-43 Water 10-SEP-14 10:50 DUP3	L1516957-44 Water 10-SEP-14 09:58 P09-C2	L1516957-45 Water 10-SEP-14 09:07 P09-C3
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.852	1.59	1.68	4.55	2.25
	Sulfur (S)-Dissolved (mg/L)	289 ^{DLA}	618 ^{DLA}	703 ^{DLA}	3.25 ^{DLA}	78.7
	Thallium (Tl)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00912 ^{DLA}	0.0115 ^{DLA}	0.0112 ^{DLA}	0.000428 ^{DLA}	0.000864
	Vanadium (V)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	<0.0020 ^{DLA}	0.0065 ^{DLA}	0.0058 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zirconium (Zr)-Dissolved (mg/L)	<0.0016 ^{DLA}	<0.0040 ^{DLA}	<0.0040 ^{DLA}	0.185 ^{DTC}	0.0329

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Sample Submission Listed:

Qualifier	Description
WSMT	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
WSMD	Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

Qualifiers for Individual Samples Listed:

Sample Number	Client Sample ID	Qualifier	Description
L1516957-1	P09-SIS2	WSMT	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Antimony (Sb)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Arsenic (As)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Beryllium (Be)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Bismuth (Bi)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Boron (B)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Chromium (Cr)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Selenium (Se)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Silver (Ag)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Tin (Sn)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Titanium (Ti)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Vanadium (V)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Zirconium (Zr)-Total	DLA	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Duplicate	Antimony (Sb)-Dissolved	DLA	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Duplicate	Lead (Pb)-Dissolved	DLA	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Duplicate	Selenium (Se)-Dissolved	DLA	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Duplicate	Silver (Ag)-Dissolved	DLA	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Duplicate	Thallium (Tl)-Dissolved	DLA	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Duplicate	Tin (Sn)-Dissolved	DLA	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9

Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Titanium (Ti)-Dissolved	DLA	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Method Blank	Manganese (Mn)-Total	MB-LOR	L1516957-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Calcium (Ca)-Total	MS-B	L1516957-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Silicon (Si)-Total	MS-B	L1516957-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sulfur (S)-Total	MS-B	L1516957-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Calcium (Ca)-Total	MS-B	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Matrix Spike	Magnesium (Mg)-Total	MS-B	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Matrix Spike	Silicon (Si)-Total	MS-B	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Matrix Spike	Sulfur (S)-Total	MS-B	L1516957-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Uranium (U)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -

Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Sodium (Na)-Dissolved	MS-B	43, -44, -45, -5, -6, -7, -8, -9 L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1516957-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -5, -6, -7, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ACY-PCT-VA	Water	Acidity by Automatic Titration	APHA 2310 "Acidity"
This analysis is carried out using procedures adapted from APHA Method 2310 "Acidity". Acidity is determined by potentiometric titration to a specified endpoint.			
Samples of industrial wastes, acid mine drainage, or other solutions that contain appreciable amounts of hydrolyzable metal ions such as aluminum, iron, and manganese may require hot peroxide treatment to ensure oxidation and hydrolysis of reduced forms of polyvalent cations. Acidity results may be highly variable if this procedure is not followed. Results in this report for 'Acidity (as CaCO3)' have not been peroxide treated.			
ACY-PCT-VA	Water	Acidity by Automatic Titration	APHA 2310 Acidity
This analysis is carried out using procedures adapted from APHA Method 2310 "Acidity". Acidity is determined by potentiometric titration to a specified endpoint.			
Samples of industrial wastes, acid mine drainage, or other solutions that contain appreciable amounts of hydrolyzable metal ions such as aluminum, iron, and manganese may require hot peroxide treatment to ensure oxidation and hydrolysis of reduced forms of polyvalent cations. Acidity results may be highly variable if this procedure is not followed. Results in this report for 'Acidity (as CaCO3)' have not been peroxide treated.			
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-WR	Water	Chloride by Ion Chromatography	EPA 300.1
This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19,			

Reference Information

Dionex 2003.

ANIONS-SO4-IC-WR Water Sulphate by Ion Chromatography EPA 300.1

This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003.

EC-PCT-VA Water Conductivity (Automated) APHA 2510 Auto. Conduc.

This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.

HARDNESS-CALC-VA Water Hardness APHA 2340B

Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.

HG-DIS-LOW-CVAFS-VA Water Dissolved Mercury in Water by CVAFS(Low) EPA SW-846 3005A & EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry or atomic absorption spectrophotometry (EPA Method 245.7).

HG-TOT-LOW-CVAFS-VA Water Total Mercury in Water by CVAFS(Low) EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry or atomic absorption spectrophotometry (EPA Method 245.7).

IONBALANCE-VA Water Ion Balance Calculation APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

$$\text{Ion Balance (\%)} = [\text{Cation Sum} - \text{Anion Sum}] / [\text{Cation Sum} + \text{Anion Sum}]$$

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030 B&E / EPA SW-846 6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS APHA 3030 B&E / EPA SW-846 6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

Reference Information

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

TSS-LOW-WR Water Total Suspended Solids by Grav. (1 mg/L) APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

ZR-D-MS-VA Water Dissolved Zr in Water by ICPMS EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

ZR-T-MS-VA Water Total Zr in Water by ICPMS EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WR	ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1	2	3	4
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Reference Information

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg ww - milligrams per kilogram based on wet weight of sample.

mg/kg lw - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Report To					Report Format					(Rush Turnaround Time (TAT) is not available for all tests)														
Company: Hemmera Environchem Inc.					Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)					R ☒ Regular (Standard TAT if received by 3 pm - business days)														
Contact: Natasha Sandys					Quality Control (QC) Report with Report ☒ Yes ☐ No					P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT														
Address: 230 - 2237 2nd Avenue Whitehorse, YT					☐ Criteria on Report - provide details below if box checked					E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT														
Phone: 867-456-4865					Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX					E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge														
					Email 1 or Fax nsandys@hemmera.com, rmartinka@hemmera.com					Specify Date Required for E2,E or P:														
					Email 2 chris@elr.ca																			
Invoice To Same as Report To ☒ Yes ☐ No					Invoice Distribution					Analysis Request														
Copy of Invoice with Report ☐ Yes ☒ No					Select Invoice Distribution: ☒ EMAIL ☒ MAIL ☐ FAX					Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below														
Company: Hemmera Environchem Inc.					Email 1 or Fax nsandys@hemmera.com																			
Contact: Natasha Sandys					Email 2 chris@elr.ca																			
Project Information					Oil and Gas Required Fields (client use)																			
ALS Quote #: Q45291					Approver ID: Cost Center:																			
Job #: 1343-005.02					GL Account: Routing Code:																			
PO / AFE:					Activity Code:																			
LSD:					Location:																			
ALS Lab Work Order # (lab use only)					ALS Contact:					Sampler: RM,AB,AN,GR														
ALS Sample # (lab use only)					Sample Identification and/or Coordinates (This description will appear on the report)					Date (dd-mm-yy)					Time (hh:mm)					Sample Type				
					P09-SIS2					09-Sep-14					14:42					Water				
					P09-SIS3					09-Sep-14					15:17					Water				
					SRK05-SP-4A					09-Sep-14					18:20					Water				
					SRK05-SP-4B					09-Sep-14					17:40					Water				
					P09-SIS1					09-Sep-14					16:50					Water				
					P09-SIS4					09-Sep-14					16:32					Water				
					P09-SIS5					09-Sep-14					16:22					Water				
					SRK05-SP-5					09-Sep-14					13:40					Water				
					SRK08-SP-7B					09-Sep-14					11:20					Water				
					SRK08-SP-7A					09-Sep-14					11:54					Water				
					Dup2					09-Sep-14					11:20					Water				
					P01-04A					09-Sep-14					18:16					Water				
Drinking Water (DW) Samples ¹ (client use)					Special Instructions / Specify Criteria to add on report (client use)					SAMPLE CONDITION AS RECEIVED (lab use only)														
Are samples taken from a Regulated DW System? ☐ Yes ☒ No					- EDD must be in EQuS format common to Faro Mine Remediation Project. Contact client if clarification is required. - See attached parameter sheet for required detection limits.					Frozen ☐ SIF Observations Yes ☐ No ☐														
Are samples for human drinking water use? ☐ Yes ☒ No										Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐														
										Cooling Initiated ☐														
										INITIAL COOLER TEMPERATURES °C FINAL COOLER TEMPERATURES °C														
										25.2.1 23.0 0.8														
SHIPMENT RELEASE (client use)					INITIAL SHIPMENT RECEPTION (lab use only)					FINAL SHIPMENT RECEPTION (lab use only)														
Released by: C. J. Strehle					Date: Sep 10/14 Time: 11:30					Received by: Date: 12-Sep/14 Time: 11:45														

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY

YELLOW - CLIENT COPY

NA-EM-0326a v09 Final (M) - July 2011

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.



ALS Environmental

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Chain of Custody (COC) / Analytical Request Form

Canada Toll Free: 1 800 668 9878



L1516957-COFC

COC Number: 1 -

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Report To			Report Format			Analysis Request												
Company: Hemmera Environchem Inc.			Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)			R ☒ Regular (Standard TAT received by 3 pm - business days)												
Contact: Natasha Sandys			Quality Control (QC) Report with Report ☒ Yes ☐ No			P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT												
Address: 230 - 2237 2nd Avenue Whitehorse, YT			Criteria on Report - provide details below if box checked			E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT												
Phone: 867-456-4865			Select Distribution: ☒ MAIL ☐ MAIL ☐ FAX			E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge												
			Email 1 or Fax nsandys@hemmera.com, rmartinka@hemmera.com			Specify Date Required for E2, E or P:												
			Email 2 chris@elr.ca															
Invoice To			Invoice Distribution			Analysis Request												
Same as Report To ☒ Yes ☐ No			Select Invoice Distribution: ☒ MAIL ☒ MAIL ☐ FAX			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												
Copy of Invoice with Report ☐ Yes ☒ No			Email 1 or Fax nsandys@hemmera.com															
Company: Hemmera Environchem Inc.			Email 2 chris@elr.ca															
Contact: Natasha Sandys																		
Project Information			Oil and Gas Required Fields (client use)															
ALS Quote #: Q45291			Approver ID:															
Job #: 1343-005.02			GL Account:															
PO / AFE:			Routing Code:															
LSD:			Activity Code:															
Location:																		
ALS Lab Work Order # (lab use only)			ALS Contact:			Sampler: RM, AB, AN, GR												
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	Time (hh:mm)	Sample Type	acidity (to pH 8.3)	alkalinity	chloride	conductivity	pH	sulphate	suspended solids, total (TSS)	dissolved metals	total metals	Number of Containers			
	P01-04B		09-Sep-14	16:46	Water	R	R	R	R	R	R	R	R	R	3			
	X25-96B		09-Sep-14	16:00	Water	R	R	R	R	R	R	R	R	R	3			
	X25-96A		09-Sep-14	15:28	Water	R	R	R	R	R	R	R	R	R	3			
	P01-03		09-Sep-14	14:23	Water	R	R	R	R	R	R	R	R	R	3			
	X24-96D		09-Sep-14	18:32	Water	R	R	R	R	R	R	R	R	R	3			
	P01-01A		09-Sep-14	11:12	Water	R	R	R	R	R	R	R	R	R	3			
	P01-01B		09-Sep-14	12:04	Water	R	R	R	R	R	R	R	R	R	3			
	Dup1		09-Sep-14	12:04	Water	R	R	R	R	R	R	R	R	R	3			
	FB2		09-Sep-14	14:30	Water	R	R	R	R	R	R	R	R	R	3			
	SRK08-SP-8B		10-Sep-14	10:23	Water	R	R	R	R	R	R	R	R	R	3			
	SRK08-SP-8A		10-Sep-14	9:52	Water	R	R	R	R	R	R	R	R	R	3			
	P96-7		10-Sep-14	8:42	Water	R	R	R	R	R	R	R	R	R	3			
Drinking Water (DW) Samples¹ (client use)			Special Instructions / Specify Criteria to add on report (client use)			SAMPLE CONDITION AS RECEIVED (lab use only)												
Are samples taken from a Regulated DW System? ☐ Yes ☒ No			- EDD must be in EQuIS format common to Faro Mine Remediation Project. Contact client if clarification is required. - See attached parameter sheet for required detection limits.			Frozen ☐ SIF Observations Yes ☐ No ☐												
Are samples for human drinking water use? ☐ Yes ☒ No						Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐												
						Cooling Initiated ☐												
						INITIAL COOLER TEMPERATURES °C												
						FINAL COOLER TEMPERATURES °C												
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)												
Released by:			Received by:			Received by:												
Date:			Date:			Date:												
Time:			Time:			Time:												

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[illegible]

COC Number: 1 -

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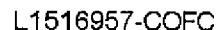
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HEMMERA ENVIROCHEM INC.
ATTN: Natasha Sandys
Suite 230 - 2237 2nd Avenue
Whitehorse Yukon Y1A 0K7

Date Received: 16-SEP-14
Report Date: 29-OCT-14 13:36 (MT)
Version: FINAL REV. 2

Client Phone: --

Certificate of Analysis

Lab Work Order #: L1518297
Project P.O. #: NOT SUBMITTED
Job Reference: 1343-005.02
C of C Numbers: 1, 2, 3, 4, 5, 6, 7
Legal Site Desc:

Comments:

29-OCT-2014 This report replaces the previous version and contains updated Sample Dates for certain samples.

Brent Mack, B.Sc.
Account Manager

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ADDRESS: 8081 Lougheed Hwy, Suite 100, Burnaby, BC V5A 1W9 Canada | Phone: +1 604 253 4188 | Fax: +1 604 253 6700
ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-1 Water TRAVEL BLANK	L1518297-2 Water 12-SEP-14 DUP 8	L1518297-3 Water 15-SEP-14 09:33 P03-06-6	L1518297-4 Water 13-SEP-14 DUP 7	L1518297-5 Water 11-SEP-14 DUP 5
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	<2.0	519	20000	2590	2110
	Hardness (as CaCO3) (mg/L)	<0.50	262	15700	1740	1540
	pH (pH)	5.84	6.49	4.09	6.55	7.58
	Total Suspended Solids (mg/L)	<1.0	7.6	3690	40.8	10.4
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	1.9	72.5	10300	71.6	59.2
	Alkalinity, Total (as CaCO3) (mg/L)	<2.0	106	<2.0	138 ^{DLA}	929 ^{DLA}
	Chloride (Cl) (mg/L)	<0.50	<0.50	38	<10	<10
	Sulfate (SO4) (mg/L)	<0.50	174	25300	1730	565
	Anion Sum (meq/L)	<0.10	5.74	529	38.8	30.3
	Cation Sum (meq/L)	<0.10	6.07	536	38.7	31.3
	Cation - Anion Balance (%)	0.0	2.7	0.7	0.0 ^{DLA}	1.6
Total Metals	Aluminum (Al)-Total (mg/L)	<0.0030	0.213	16.1	<0.0060 ^{DLA}	0.839
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	0.099	<0.00020 ^{DLA}	0.00013
	Arsenic (As)-Total (mg/L)	<0.00010	0.00031	0.807	0.00032	0.00220
	Barium (Ba)-Total (mg/L)	<0.000050	0.0300	0.886	0.0382	0.0537
	Beryllium (Be)-Total (mg/L)	<0.00010	0.00011	<0.050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.25 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<5.0 ^{DLA}	<0.020 ^{DLA}	0.025
	Cadmium (Cd)-Total (mg/L)	<0.000010	0.00205	0.250	0.000250	0.000025
	Calcium (Ca)-Total (mg/L)	<0.050	70.4	380	522 ^{DLA}	215
	Chromium (Cr)-Total (mg/L)	<0.00010	0.00066	0.119	<0.00020	0.00340
	Cobalt (Co)-Total (mg/L)	<0.00010	0.0478	1.79	0.0477	0.00240
	Copper (Cu)-Total (mg/L)	<0.00050	0.00091	2.94	<0.0010 ^{DLA}	0.00199
	Iron (Fe)-Total (mg/L)	<0.010	5.92	2490	31.6	3.25
	Lead (Pb)-Total (mg/L)	<0.000050	0.00618	16.4	0.00014	0.00110
	Lithium (Li)-Total (mg/L)	<0.00050	0.0285	0.47	0.0145	0.0282
	Magnesium (Mg)-Total (mg/L)	<0.10	19.2	3490	105	243
	Manganese (Mn)-Total (mg/L)	<0.000050	1.66	652	5.41	0.0744
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.000050	0.000142	<0.025 ^{DLA}	0.00016	0.00155
	Nickel (Ni)-Total (mg/L)	<0.00050	0.0515	1.83 ^{DLA}	0.0401	0.00615
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.50 ^{DLA}	0.170	<0.050
	Potassium (K)-Total (mg/L)	<0.10	2.18	12.3	3.91 ^{DLA}	4.95
	Selenium (Se)-Total (mg/L)	<0.00010	<0.00010	<0.050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Silicon (Si)-Total (mg/L)	<0.050	8.23	27.9	8.70	8.63
	Silver (Ag)-Total (mg/L)	<0.000010	0.000014	0.0366	0.000029	0.000025
	Sodium (Na)-Total (mg/L)	<0.050	5.90	120	32.7	8.11

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-6 Water 14-SEP-14 DUP 9	L1518297-7 Water 11-SEP-14 DUP 6	L1518297-8 Water 15-SEP-14 09:48 MW14-02S	L1518297-9 Water 15-SEP-14 11:06 MW14-02D	L1518297-10 Water 11-SEP-14 17:21 P96-8B
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	1990	1080	164	495	9430
	Hardness (as CaCO3) (mg/L)	1440	643	84.4	232	7100
	pH (pH)	7.71	6.91	7.85	6.45	5.44
	Total Suspended Solids (mg/L)	6.6	8.4	31.0	4.6	12.8
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	19.0	89.4	3.6	153	2330
	Alkalinity, Total (as CaCO3) (mg/L)	280	379	70.5	195	36.9
	Chloride (Cl) (mg/L)	<5.0 ^{DLA}	<5.0 ^{DLA}	<0.50	<0.50	31
	Sulfate (SO4) (mg/L)	1060	277	11.2	74.7	9560
	Anion Sum (meq/L)	27.6	13.3	1.64	5.46	201
	Cation Sum (meq/L)	29.1	14.2	1.79	5.94	201
	Cation - Anion Balance (%)	2.7	3.0	4.4	4.2	0.0
Total Metals	Aluminum (Al)-Total (mg/L)	0.366	0.148	0.478	0.180	3.11
	Antimony (Sb)-Total (mg/L)	0.00026	<0.00010	0.00011	<0.00010	<0.020 ^{DLA}
	Arsenic (As)-Total (mg/L)	0.00054	0.0246	0.00066	0.00208	<0.020 ^{DLA}
	Barium (Ba)-Total (mg/L)	0.0618	0.0479	0.0524	0.0339	0.016
	Beryllium (Be)-Total (mg/L)	<0.00020 ^{DLA}	0.00020	<0.00010	0.00102	<0.020 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.0010 ^{DLA}	<0.00050	<0.00050	<0.00050	<0.10 ^{DLA}
	Boron (B)-Total (mg/L)	<0.020 ^{DLA}	0.014	<0.010	<0.010	<2.0 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.000056	0.000202	0.000043	0.000081	0.297
	Calcium (Ca)-Total (mg/L)	401	154	25.9	60.5	436
	Chromium (Cr)-Total (mg/L)	0.00365	0.00052	0.00335	0.00121	<0.020 ^{DLA}
	Cobalt (Co)-Total (mg/L)	0.00055	0.00314	0.00032	0.00442	2.21
	Copper (Cu)-Total (mg/L)	0.0050	0.00051	0.00181	0.00107	<0.10 ^{DLA}
	Iron (Fe)-Total (mg/L)	0.724	14.7	0.960	15.1	401
	Lead (Pb)-Total (mg/L)	0.00094	0.000178	0.000848	0.000356	0.106
	Lithium (Li)-Total (mg/L)	0.0099	0.0329	0.00386	0.0414	0.30
	Magnesium (Mg)-Total (mg/L)	104	62.0	5.31	20.1	1470
	Manganese (Mn)-Total (mg/L)	0.00918	0.772	0.0366	0.904	156
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	0.000011	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00099	0.000608	0.000839	0.000180	<0.010 ^{DLA}
	Nickel (Ni)-Total (mg/L)	0.0033	0.00819	0.00288	0.0129	2.44
	Phosphorus (P)-Total (mg/L)	<0.050	0.217	<0.050	<0.050	<0.25 ^{DLA}
	Potassium (K)-Total (mg/L)	1.25	5.02	0.76	2.76	20.1
	Selenium (Se)-Total (mg/L)	0.00116	0.00026	0.00024	<0.00010	<0.020 ^{DLA}
	Silicon (Si)-Total (mg/L)	6.72	13.7	5.91	11.2	17.6
	Silver (Ag)-Total (mg/L)	<0.000020 ^{DLA}	<0.000010	0.000012	<0.000010	<0.0020 ^{DLA}
	Sodium (Na)-Total (mg/L)	5.76	9.55	2.05	8.99	68

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-11 Water 11-SEP-14 16:46 P96-8A	L1518297-12 Water 11-SEP-14 15:34 SRK08-P9	L1518297-13 Water 11-SEP-14 14:35 SRK08-SBR2	L1518297-14 Water 11-SEP-14 13:18 SRK08-SBR3	L1518297-15 Water 11-SEP-14 12:18 SRK05-SP-1B
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	9270	2290	3530	3340	1070
	Hardness (as CaCO3) (mg/L)	6590	1590	2590	2510	646
	pH (pH)	3.61	7.74	6.63	7.39	6.93
	Total Suspended Solids (mg/L)	7.8	55.2	579	20.0	10.6
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	2890	16.2	299	74.7	102
	Alkalinity, Total (as CaCO3) (mg/L)	<2.0	232	284	765	378
	Chloride (Cl) (mg/L)	<25 ^{DLA}	<10 ^{DLA}	<10 ^{DLA}	<10 ^{DLA}	<5.0 ^{DLA}
	Sulfate (SO4) (mg/L)	9530	1370	2530	1850	277
	Anion Sum (meq/L)	198	33.1	58.3	53.7	13.3
	Cation Sum (meq/L)	191	32.8	58.1	52.6	14.2
	Cation - Anion Balance (%)	-1.9	-0.5	-0.2	-1.1	3.3
Total Metals	Aluminum (Al)-Total (mg/L)	22.9	1.71	8.87	0.390	0.142
	Antimony (Sb)-Total (mg/L)	<0.020 ^{DLA}	<0.00020 ^{DLA}	0.0021	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Total (mg/L)	<0.020 ^{DLA}	0.00214	0.0288	0.00039	0.0255
	Barium (Ba)-Total (mg/L)	0.013	0.0433	0.174	0.0213	0.0495
	Beryllium (Be)-Total (mg/L)	<0.020 ^{DLA}	<0.00020 ^{DLA}	<0.0020 ^{DLA}	<0.00020 ^{DLA}	0.00019
	Bismuth (Bi)-Total (mg/L)	<0.10 ^{DLA}	<0.0010 ^{DLA}	<0.010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Total (mg/L)	<2.0 ^{DLA}	<0.020 ^{DLA}	<0.20 ^{DLA}	<0.020 ^{DLA}	0.014
	Cadmium (Cd)-Total (mg/L)	0.398	0.000044	0.0660	<0.000020 ^{DLA}	0.000206
	Calcium (Ca)-Total (mg/L)	423	424	308	416	154
	Chromium (Cr)-Total (mg/L)	<0.020 ^{DLA}	0.0116	0.0366	0.00165	0.00050
	Cobalt (Co)-Total (mg/L)	2.45	0.00637	0.312	0.00243	0.00324
	Copper (Cu)-Total (mg/L)	0.28	0.0079	0.062	0.0017	0.00051
	Iron (Fe)-Total (mg/L)	307	4.55	49.4	1.27	14.3
	Lead (Pb)-Total (mg/L)	0.209	0.00244	0.354	0.00069	0.000171
	Lithium (Li)-Total (mg/L)	0.33	0.0167	0.090	0.0798	0.0323
	Magnesium (Mg)-Total (mg/L)	1370	132	413	355	63.0
	Manganese (Mn)-Total (mg/L)	160	0.768	31.2	0.0352	0.815
	Mercury (Hg)-Total (mg/L)	<0.000010 ^{DLA}	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	<0.010 ^{DLA}	0.00345	0.0020	0.00012	0.000604
	Nickel (Ni)-Total (mg/L)	2.79	0.0178	0.663	0.0367	0.00864
	Phosphorus (P)-Total (mg/L)	<0.25 ^{DLA}	0.110	0.384	<0.050	0.226
	Potassium (K)-Total (mg/L)	18.5	2.20	9.21	7.57	4.86
	Selenium (Se)-Total (mg/L)	<0.020 ^{DLA}	<0.00020 ^{DLA}	<0.0020 ^{DLA}	0.00074	0.00020
	Silicon (Si)-Total (mg/L)	35.6	10.3	29.1	5.62	13.3
	Silver (Ag)-Total (mg/L)	<0.0020 ^{DLA}	0.000024	0.00545	0.000321	<0.000010
	Sodium (Na)-Total (mg/L)	71	19.2	20.1	52.8	9.84

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-16 Water 11-SEP-14 09:35 MW14-09	L1518297-17 Water 11-SEP-14 10:13 MW14-10	L1518297-18 Water 11-SEP-14 08:52 SRK05-SP-2	L1518297-19 Water 11-SEP-14 10:30 S1B	L1518297-20 Water 11-SEP-14 16:48 FB1
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	720	1040	513	772	<2.0
	Hardness (as CaCO3) (mg/L)	374	325	270	417	<0.50
	pH (pH)	7.29	8.06	7.28	7.27	6.08
	Total Suspended Solids (mg/L)	16.6	39.2	<1.0	1.8	<1.0
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	21.3	4.7	32.3	39.0	2.0
	Alkalinity, Total (as CaCO3) (mg/L)	249	372	131	266	<1.0
	Chloride (Cl) (mg/L)	1.39	<5.0 ^{DLA}	<0.50	<0.50	<0.50
	Sulfate (SO4) (mg/L)	175	240	150	187	<0.50
	Anion Sum (meq/L)	8.67	12.4	5.75	9.20	<0.10
	Cation Sum (meq/L)	9.01	12.6	5.95	9.45	<0.10
	Cation - Anion Balance (%)	1.9	0.5	1.7	1.3	0.0
Total Metals	Aluminum (Al)-Total (mg/L)	0.564	1.53	0.0187	0.0449	<0.0030
	Antimony (Sb)-Total (mg/L)	0.00013	0.00020	<0.00010	0.00020	<0.00010
	Arsenic (As)-Total (mg/L)	0.00210	0.00112	<0.00010	0.00030	<0.00010
	Barium (Ba)-Total (mg/L)	0.0653	0.0602	0.0867	0.0473	<0.000050
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	0.023	0.012	<0.010	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000129	0.000087	0.000205	0.000168	<0.000010
	Calcium (Ca)-Total (mg/L)	94.5	85.8	75.4	113	<0.050
	Chromium (Cr)-Total (mg/L)	0.00126	0.00441	0.00011	0.00024	<0.00010
	Cobalt (Co)-Total (mg/L)	0.00530	0.00129	0.00779	0.00010	<0.00010
	Copper (Cu)-Total (mg/L)	0.00256	0.00387	0.00098	0.00378	<0.00050
	Iron (Fe)-Total (mg/L)	1.49	2.16	0.034	0.083	<0.010
	Lead (Pb)-Total (mg/L)	0.00124	0.00102	0.000055	0.000140	<0.000050
	Lithium (Li)-Total (mg/L)	0.0137	0.0251	0.0124	0.0130	<0.00050
	Magnesium (Mg)-Total (mg/L)	32.1	22.2	18.7	31.1	<0.10
	Manganese (Mn)-Total (mg/L)	2.09	0.0384	1.97	0.0129	<0.000050
	Mercury (Hg)-Total (mg/L)	<0.000010	0.000018	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00191	0.000944	0.000140	0.000197	<0.000050
	Nickel (Ni)-Total (mg/L)	0.0134	0.00501	0.00695	0.00418	<0.00050
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	3.00	4.05	2.05	2.63	<0.10
	Selenium (Se)-Total (mg/L)	0.00023	0.00265	<0.00010	0.00014	<0.00010
	Silicon (Si)-Total (mg/L)	7.96	7.48	7.03	6.14	<0.050
	Silver (Ag)-Total (mg/L)	0.000016	0.000019	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Total (mg/L)	33.1	133	10.2	27.4	<0.050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-21 Water 11-SEP-14 14:25 P2001-2B	L1518297-22 Water 11-SEP-14 09:37 V34	L1518297-23 Water 11-SEP-14 10:46 V35	L1518297-24 Water 11-SEP-14 15:44 V36	L1518297-25 Water 11-SEP-14 12:10 P2001-3
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	2900	2080	2630	3250	936
	Hardness (as CaCO3) (mg/L)	2150	1450	1920	2460	507
	pH (pH)	7.32	7.53	7.57	7.69	8.12
	Total Suspended Solids (mg/L)	23.2	10.2	2.6	14.0	107
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	72.9	58.1	47.4	43.0	4.9
	Alkalinity, Total (as CaCO3) (mg/L)	741	928	544	622	450
	Chloride (Cl) (mg/L)	<10 ^{DLA}	<5.0 ^{DLA}	<10 ^{DLA}	<10 ^{DLA}	<2.5 ^{DLA}
	Sulfate (SO4) (mg/L)	1500	553	1440	2010	124
	Anion Sum (meq/L)	46.1	30.1	40.8	54.2	11.6
	Cation Sum (meq/L)	43.6	29.5	38.8	49.6	11.7
	Cation - Anion Balance (%)	-2.8	-1.0	-2.6	-4.4	0.6
Total Metals	Aluminum (Al)-Total (mg/L)	0.464	0.831	0.0595	0.259	2.66
	Antimony (Sb)-Total (mg/L)	<0.00020 ^{DLA}	0.00010	0.00028	0.00033	0.00031
	Arsenic (As)-Total (mg/L)	0.0135	0.00228	0.00053	0.00672	0.00680
	Barium (Ba)-Total (mg/L)	0.0182	0.0572	0.0119	0.0148	0.108
	Beryllium (Be)-Total (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00012
	Bismuth (Bi)-Total (mg/L)	<0.0010 ^{DLA}	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Total (mg/L)	<0.020 ^{DLA}	0.025	<0.020 ^{DLA}	0.022	0.026
	Cadmium (Cd)-Total (mg/L)	<0.000020 ^{DLA}	0.000033	0.000147	0.000520	0.000792
	Calcium (Ca)-Total (mg/L)	438	217	417	457	97.2
	Chromium (Cr)-Total (mg/L)	0.00071	0.00337	0.00108	0.00195	0.00779
	Cobalt (Co)-Total (mg/L)	0.00045	0.00265	<0.00020 ^{DLA}	0.00230	0.00245
	Copper (Cu)-Total (mg/L)	0.0010	0.00209	0.0011	0.0037	0.0101
	Iron (Fe)-Total (mg/L)	3.20	3.18	0.083	0.545	4.05
	Lead (Pb)-Total (mg/L)	0.00388	0.00105	0.00064	0.0114	0.00344
	Lithium (Li)-Total (mg/L)	0.0379	0.0279	0.0232	0.0451	0.0123
	Magnesium (Mg)-Total (mg/L)	255	230	223	335	65.1
	Manganese (Mn)-Total (mg/L)	0.117	0.0815	0.00384	0.128	0.786
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00049	0.00158	0.00103	0.00135	0.0134
	Nickel (Ni)-Total (mg/L)	0.0033	0.00676	0.0047	0.0153	0.0103
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	0.111
	Potassium (K)-Total (mg/L)	5.09	4.98	4.09	5.87	3.87
	Selenium (Se)-Total (mg/L)	<0.00020 ^{DLA}	<0.00010	0.00176	0.00058	0.00013
	Silicon (Si)-Total (mg/L)	8.02	8.51	6.16	7.60	12.4
	Silver (Ag)-Total (mg/L)	<0.000020 ^{DLA}	0.000012	<0.000020 ^{DLA}	<0.000020 ^{DLA}	0.000050
	Sodium (Na)-Total (mg/L)	9.25	8.57	8.24	9.28	33.3

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-26 Water 12-SEP-14 15:49 SRK05-5C	L1518297-27 Water 12-SEP-14 14:39 BH05-9B-R	L1518297-28 Water 12-SEP-14 13:56 P96-9A	L1518297-29 Water 12-SEP-14 12:00 SRK05-07	L1518297-30 Water 12-SEP-14 09:29 P09-VC2
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	647	599	3140	3230	390
	Hardness (as CaCO3) (mg/L)	332	226	2540	2610	212
	pH (pH)	8.10	8.19	7.83	7.61	8.02
	Total Suspended Solids (mg/L)	15.6	8.6	<1.0	<1.0	7.4
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	3.2	1.8	28.6	54.8	3.8
	Alkalinity, Total (as CaCO3) (mg/L)	169	147	569	692	175
	Chloride (Cl) (mg/L)	<0.50	1.12	<10 ^{DLA}	<10 ^{DLA}	<0.50
	Sulfate (SO4) (mg/L)	189	168	1900	1910	41.1
	Anion Sum (meq/L)	7.32	6.46	51.0	53.6	4.36
	Cation Sum (meq/L)	7.49	6.64	51.5	52.9	4.64
	Cation - Anion Balance (%)	1.2	1.4	0.4	-0.7	3.2
Total Metals	Aluminum (Al)-Total (mg/L)	0.616	0.192	0.0101	0.0311	0.0832
	Antimony (Sb)-Total (mg/L)	0.00017	<0.00010	<0.00020 ^{DLA}	0.00060	0.00070
	Arsenic (As)-Total (mg/L)	0.00533	0.0319	0.00110	0.00341	0.125
	Barium (Ba)-Total (mg/L)	0.102	0.0211	0.0560	0.0471	0.0438
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Total (mg/L)	0.015	0.043	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000124	0.000021	0.000710	0.000109	0.000017
	Calcium (Ca)-Total (mg/L)	82.4	50.1	369	493	62.7
	Chromium (Cr)-Total (mg/L)	0.00189	0.00059	0.00043 ^{DLA}	0.00085	0.00023
	Cobalt (Co)-Total (mg/L)	0.00102	0.00017	<0.00020 ^{DLA}	0.00230	0.00031
	Copper (Cu)-Total (mg/L)	0.00182	0.00114	0.0029	0.0012	0.00063
	Iron (Fe)-Total (mg/L)	0.999	1.93	0.142	0.085	2.27
	Lead (Pb)-Total (mg/L)	0.00535	0.00734	0.00039	0.00064	0.00669
	Lithium (Li)-Total (mg/L)	0.00903	0.0222	0.0140	0.0108	0.00813
	Magnesium (Mg)-Total (mg/L)	25.4	23.2	330	332	12.3
	Manganese (Mn)-Total (mg/L)	0.997	0.0953	0.0535	0.0645	0.0957
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.0218	0.0114	0.00091	0.00058	0.0109
	Nickel (Ni)-Total (mg/L)	0.00345	0.00077	0.0146	0.0541	0.00051
	Phosphorus (P)-Total (mg/L)	<0.050	0.061	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	1.91	1.91	5.65	2.66	1.18
	Selenium (Se)-Total (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Silicon (Si)-Total (mg/L)	6.47	6.94	6.00	7.37	6.71
	Silver (Ag)-Total (mg/L)	0.000017	0.000017	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Total (mg/L)	18.6	47.5	14.1	14.5	6.16

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-31 Water 12-SEP-14 10:40 P09-VC1	L1518297-32 Water 12-SEP-14 12:56 SRK05-8	L1518297-33 Water 12-SEP-14 14:59 BH14B	L1518297-34 Water 12-SEP-14 18:16 P96-6	L1518297-35 Water 12-SEP-14 15:04 BH13B
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	345	2610	3780	2160	1160
	Hardness (as CaCO3) (mg/L)	151	1920	2790	1470	681
	pH (pH)	8.19	7.60	7.37	7.23	7.53
	Total Suspended Solids (mg/L)	23.0	1.0	33.8	1.8	<1.0
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	1.6	41.8	55.9	50.3	8.1
	Alkalinity, Total (as CaCO3) (mg/L)	133	605	476	289	99.5
	Chloride (Cl) (mg/L)	<0.50	<10 ^{DLA}	<10 ^{DLA}	<10 ^{DLA}	<5.0 ^{DLA}
	Sulfate (SO4) (mg/L)	51.3	1400	2440	1260	603
	Anion Sum (meq/L)	3.72	41.2	60.3	32.1	14.5
	Cation Sum (meq/L)	3.91	38.8	56.6	29.8	14.0
	Cation - Anion Balance (%)	2.4	-3.0	-3.2	-3.7	-1.9
Total Metals	Aluminum (Al)-Total (mg/L)	0.630	0.0419	0.0377	0.0314	0.0310
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Total (mg/L)	0.00256	0.00042	0.00031	0.00060	<0.00010
	Barium (Ba)-Total (mg/L)	0.0249	0.0127	0.0260	0.0226	0.0308
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Cadmium (Cd)-Total (mg/L)	0.000132	0.000037	0.000254	0.000336	0.000047
	Calcium (Ca)-Total (mg/L)	44.5	394	551	343	159
	Chromium (Cr)-Total (mg/L)	0.00071	0.00071	0.00038	<0.00020 ^{DLA}	0.00014
	Cobalt (Co)-Total (mg/L)	0.00028	0.00044	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00144
	Copper (Cu)-Total (mg/L)	0.00143	0.0029	0.0011	<0.0010 ^{DLA}	0.00511
	Iron (Fe)-Total (mg/L)	1.02	0.081	0.135	0.136	0.072
	Lead (Pb)-Total (mg/L)	0.00493	0.00045	0.0265	0.00025	0.000084
	Lithium (Li)-Total (mg/L)	0.00377	0.0185	0.0760	0.0331	0.0162
	Magnesium (Mg)-Total (mg/L)	8.83	221	349	153	70.2
	Manganese (Mn)-Total (mg/L)	0.0188	0.00172	0.0100	0.00279	0.00138
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.000547	0.00047	0.00023	0.00010	0.00375
	Nickel (Ni)-Total (mg/L)	0.00090	0.0017	0.0147	0.0132	0.00787
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	1.01	1.91	4.38	4.57	3.01
	Selenium (Se)-Total (mg/L)	<0.00010	0.00031	0.00069	0.00393	0.00990
	Silicon (Si)-Total (mg/L)	7.09	6.19	9.23	8.69	3.93
	Silver (Ag)-Total (mg/L)	0.000147	<0.000020 ^{DLA}	0.000027	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Total (mg/L)	19.2	10.7	18.3	6.03	7.16

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-36 Water 12-SEP-14 16:00 BH14A	L1518297-37 Water 12-SEP-14 13:20 BH5	L1518297-38 Water 12-SEP-14 12:18 SRK08-P12A	L1518297-39 Water 12-SEP-14 11:45 SRK08-P12B	L1518297-40 Water 12-SEP-14 10:49 BH10A
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	4190	681	1250	857	452
	Hardness (as CaCO3) (mg/L)	3220	324	727	477	251
	pH (pH)	7.45	6.66	6.53	6.31	7.12
	Total Suspended Solids (mg/L)	8.8	3.0	83.4	6.8	3.6
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	81.8	210	220	210	33.9
	Alkalinity, Total (as CaCO3) (mg/L)	587	258	647	415	161
	Chloride (Cl) (mg/L)	<10 ^{DLA}	0.61	<5.0 ^{DLA}	<2.5 ^{DLA}	<0.50
	Sulfate (SO4) (mg/L)	2800	127	170	107	86.3
	Anion Sum (meq/L)	70.0	7.81	16.5	10.5	5.02
	Cation Sum (meq/L)	66.1	8.55	16.7	10.7	5.29
	Cation - Anion Balance (%)	-2.8	4.5	0.6	0.8	2.6
Total Metals	Aluminum (Al)-Total (mg/L)	0.197	0.101	1.76	0.175	0.0736
	Antimony (Sb)-Total (mg/L)	<0.00050 ^{DLA}	<0.00010	0.00066	<0.00010	<0.00010
	Arsenic (As)-Total (mg/L)	0.00101	0.00088	0.00652	0.00035	0.00026
	Barium (Ba)-Total (mg/L)	0.0369	0.0438	0.0575	0.127	0.0234
	Beryllium (Be)-Total (mg/L)	<0.00050 ^{DLA}	0.00030	0.00100	0.00056	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.0025 ^{DLA}	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.050 ^{DLA}	<0.010	0.011	<0.010	<0.010
	Cadmium (Cd)-Total (mg/L)	0.00302	0.00103	0.000099	0.000092	0.00454
	Calcium (Ca)-Total (mg/L)	513	81.3	197	136	70.8
	Chromium (Cr)-Total (mg/L)	0.00074	0.00047	0.00752	0.00055	0.00036
	Cobalt (Co)-Total (mg/L)	0.00096	0.0187	0.00974	0.00428	0.00021
	Copper (Cu)-Total (mg/L)	0.0048	0.00081	0.00622	0.00065	0.00223
	Iron (Fe)-Total (mg/L)	0.588	23.3	18.5	4.45	0.331
	Lead (Pb)-Total (mg/L)	0.0832	0.00301	0.0166	0.00162	0.00230
	Lithium (Li)-Total (mg/L)	0.109	0.0355	0.110	0.0968	0.00955
	Magnesium (Mg)-Total (mg/L)	461	30.1	59.7	37.0	16.6
	Manganese (Mn)-Total (mg/L)	0.0797	1.92	0.934	0.736	0.00600
	Mercury (Hg)-Total (mg/L)	0.000084	<0.000010	<0.000050 ^{DLM}	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00046	0.000052	0.000376	0.000059	<0.000050
	Nickel (Ni)-Total (mg/L)	0.304	0.0248	0.0232	0.00827	0.00265
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	0.110	<0.050	<0.050
	Potassium (K)-Total (mg/L)	4.42	3.47	3.84	3.74	1.35
	Selenium (Se)-Total (mg/L)	0.00096	<0.00010	<0.00010	<0.00010	0.00049
	Silicon (Si)-Total (mg/L)	10.8	12.1	13.8	10.8	6.40
	Silver (Ag)-Total (mg/L)	0.000260	<0.000010	0.000088	0.000011	<0.000010
	Sodium (Na)-Total (mg/L)	21.6	13.4	28.4	19.3	5.24

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-41 Water 12-SEP-14 09:59 BH10B	L1518297-42 Water 12-SEP-14 08:56 P05-04	L1518297-43 Water 12-SEP-14 08:21 BH6	L1518297-44 Water 13-SEP-14 10:10 MW14-13	L1518297-45 Water 13-SEP-14 10:10 DUP10
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	410	554	519	1640	1640
	Hardness (as CaCO3) (mg/L)	220	310	254	1060	1060
	pH (pH)	7.18	6.93	6.81	6.48	6.49
	Total Suspended Solids (mg/L)	57.2	<1.0	7.0	<1.0	<1.0
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	34.1	49.4	67.8	178	208
	Alkalinity, Total (as CaCO3) (mg/L)	155	155	107	407	402
	Chloride (Cl) (mg/L)	<0.50	<0.50	<0.50	<5.0 ^{DLA}	<5.0 ^{DLA}
	Sulfate (SO4) (mg/L)	69.5	150	171	687	686
	Anion Sum (meq/L)	4.55	6.22	5.70	22.4	22.3
	Cation Sum (meq/L)	4.71	6.57	5.90	22.1	22.2
	Cation - Anion Balance (%)	1.7	2.7	1.7	-0.8	-0.3
Total Metals	Aluminum (Al)-Total (mg/L)	5.47	0.0933	0.228	0.0766	0.0888
	Antimony (Sb)-Total (mg/L)	0.00030	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Total (mg/L)	0.00308	<0.00010	0.00033	<0.00020 ^{DLA}	0.00026
	Barium (Ba)-Total (mg/L)	0.0559	0.0359	0.0302	0.0625	0.0604
	Beryllium (Be)-Total (mg/L)	0.00048	<0.00010	0.00013	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Total (mg/L)	0.00053	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.020 ^{DLA}	0.010
	Cadmium (Cd)-Total (mg/L)	0.00150	0.00411	0.00215	0.00375	0.00353
	Calcium (Ca)-Total (mg/L)	58.7	84.1	73.3	284	280
	Chromium (Cr)-Total (mg/L)	0.00278	0.00017	0.00069	0.00036	0.00035
	Cobalt (Co)-Total (mg/L)	0.00098	0.00119	0.0486	0.00055	0.00050
	Copper (Cu)-Total (mg/L)	0.0116	0.00090	0.00096	0.0031	0.00320
	Iron (Fe)-Total (mg/L)	2.93	0.223	6.23	0.028	0.028
	Lead (Pb)-Total (mg/L)	0.143	0.000270	0.00635	<0.00010 ^{DLA}	0.000075
	Lithium (Li)-Total (mg/L)	0.0144	0.0139	0.0288	0.0360	0.0362
	Magnesium (Mg)-Total (mg/L)	16.0	21.7	19.6	84.6	82.3
	Manganese (Mn)-Total (mg/L)	0.0242	0.0203	1.69	0.471	0.447
	Mercury (Hg)-Total (mg/L)	0.000063	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000050 ^{DLM}
	Molybdenum (Mo)-Total (mg/L)	0.000164	0.000062	0.000153	<0.00010 ^{DLA}	0.000084
	Nickel (Ni)-Total (mg/L)	0.00606	0.0171	0.0528	0.134	0.121
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	1.75	1.59	2.26	4.99	5.17
	Selenium (Se)-Total (mg/L)	0.00034	0.00032	<0.00010	0.00036	0.00038
	Silicon (Si)-Total (mg/L)	7.90	6.32	8.54	13.6	13.5
	Silver (Ag)-Total (mg/L)	0.000270	<0.000010	0.000016	<0.000020 ^{DLA}	0.000020
	Sodium (Na)-Total (mg/L)	5.37	6.01	6.09	13.0	11.8

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-46 Water 13-SEP-14 09:33 MW14-16	L1518297-47 Water 13-SEP-14 13:34 MW14-12S	L1518297-48 Water 13-SEP-14 11:52 MW14-12D	L1518297-49 Water 13-SEP-14 08:30 BH8	L1518297-50 Water 13-SEP-14 18:20 P2001-2A
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	1620	616	817	3320	2930
	Hardness (as CaCO3) (mg/L)	1060	330	479	1540	2170
	pH (pH)	6.85	7.58	7.17	5.13	7.55
	Total Suspended Solids (mg/L)	1.2	69.8	<1.0	98.7	42.8
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	121	13.8	51.7	991	58.2
	Alkalinity, Total (as CaCO3) (mg/L)	490	35.0	211	<1.0	756
	Chloride (Cl) (mg/L)	<5.0 ^{DLA}	<0.50	2.7	<10 ^{DLA}	<10 ^{DLA}
	Sulfate (SO4) (mg/L)	582	284	267	2770	1550
	Anion Sum (meq/L)	21.9	6.62	9.85	57.7	47.3
	Cation Sum (meq/L)	21.9	6.96	10.0	63.3	44.2
	Cation - Anion Balance (%)	0.0	2.5	0.9	4.6	-3.4
Total Metals	Aluminum (Al)-Total (mg/L)	0.0443	0.865	0.0472	2.26 ^{DLA}	0.713
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.0020	0.00037
	Arsenic (As)-Total (mg/L)	0.00032	0.00073	0.00023	0.0020	0.0181
	Barium (Ba)-Total (mg/L)	0.0739	0.131	0.115	0.0141	0.0647
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.00010	0.0028	<0.00020 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.00050	<0.010 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Total (mg/L)	<0.010	<0.010	<0.010	<0.20 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.00222	0.00102	0.00101	0.509	0.000024
	Calcium (Ca)-Total (mg/L)	300	70.7	130	270 ^{DLA}	453
	Chromium (Cr)-Total (mg/L)	0.00024	0.00170	0.00022	<0.0020	0.00214
	Cobalt (Co)-Total (mg/L)	0.00056	0.00059	0.00014	0.490	0.00087
	Copper (Cu)-Total (mg/L)	0.00250	0.00262	0.00123	1.58	0.0019
	Iron (Fe)-Total (mg/L)	0.037	1.08	0.076	487	5.90
	Lead (Pb)-Total (mg/L)	0.000081	0.00102	0.000088	0.501	0.00659
	Lithium (Li)-Total (mg/L)	0.0302	0.0109	0.0174	0.092	0.0397
	Magnesium (Mg)-Total (mg/L)	76.2	36.3	37.4	205	261
	Manganese (Mn)-Total (mg/L)	0.0577	0.224	0.0620	10.4	0.172
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.000159	0.000089	0.000121	<0.0010	0.00190
	Nickel (Ni)-Total (mg/L)	0.0833	0.0168	0.0475	0.469	0.0079
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Total (mg/L)	4.97	2.74	3.72	7.19	5.73
	Selenium (Se)-Total (mg/L)	0.00169	0.00015	0.00034	<0.0020 ^{DLA}	<0.00020 ^{DLA}
	Silicon (Si)-Total (mg/L)	11.4	12.2	9.31	4.88 ^{DLA}	8.58
	Silver (Ag)-Total (mg/L)	<0.000010	0.000025	<0.000010	<0.00020	0.000021
	Sodium (Na)-Total (mg/L)	9.40	5.12	6.74	23.3	9.20

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-51 Water 13-SEP-14 17:55 SRK05-9	L1518297-52 Water 13-SEP-14 16:13 P09-ETA-1	L1518297-53 Water 13-SEP-14 15:07 P09-ETA-2	L1518297-54 Water 13-SEP-14 13:53 SRK04-3A	L1518297-55 Water 13-SEP-14 13:02 SRK05-ETA-BR2
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	2110	412	6360	9500	2520
	Hardness (as CaCO3) (mg/L)	1430	201	4510	6550	1680
	pH (pH)	7.99	8.25	6.05	5.65	7.28
	Total Suspended Solids (mg/L)	67.4	59.3	105	32.4	56.0
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	11.7	1.3	1510	4080	46.2
	Alkalinity, Total (as CaCO3) (mg/L)	400	196	121	37.2	124
	Chloride (Cl) (mg/L)	<10 ^{DLA}	<0.50	17	43	10
	Sulfate (SO4) (mg/L)	1160	30.9	5900	10500	1870
	Anion Sum (meq/L)	32.1	4.56	126	220	41.7
	Cation Sum (meq/L)	29.1	4.76	125	216	37.3
	Cation - Anion Balance (%)	-4.8	2.2	-0.1	-1.0	-5.5
				^{DLA}		
Total Metals	Aluminum (Al)-Total (mg/L)	1.01	1.19	<0.15 ^{DLA}	4.57 ^{DLA}	0.332 ^{DLA}
	Antimony (Sb)-Total (mg/L)	0.00048	0.00023	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Arsenic (As)-Total (mg/L)	0.00579	0.00077	0.195	0.216	0.00031
	Barium (Ba)-Total (mg/L)	0.109	0.0162	0.0190	0.0133	0.0390
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.00010	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.025 ^{DLA}	<0.050 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Total (mg/L)	<0.010	0.015	<0.50 ^{DLA}	<1.0 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.000334	0.000013	<0.00050 ^{DLA}	0.0716	0.000561
	Calcium (Ca)-Total (mg/L)	267	59.4	527	403	503
	Chromium (Cr)-Total (mg/L)	0.00484	0.00039	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Cobalt (Co)-Total (mg/L)	0.00150	0.00011	0.707	2.27	0.0445
	Copper (Cu)-Total (mg/L)	0.0103	0.00229	<0.025 ^{DLA}	<0.050 ^{DLA}	<0.0010 ^{DLA}
	Iron (Fe)-Total (mg/L)	2.08	0.862	438	1030	34.2
	Lead (Pb)-Total (mg/L)	0.0347	0.0485	0.0079	0.0133	0.00399
	Lithium (Li)-Total (mg/L)	0.00858	<0.00050	0.127	0.141	0.0151
	Magnesium (Mg)-Total (mg/L)	196	10.1	841	1380	108
	Manganese (Mn)-Total (mg/L)	0.0428	0.00848	74.6	144	4.77
	Mercury (Hg)-Total (mg/L)	0.000022	0.000046	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00163	0.000165	<0.0025 ^{DLA}	<0.0050 ^{DLA}	0.00014
	Nickel (Ni)-Total (mg/L)	0.00616	<0.00050	0.682 ^{DLA}	1.79 ^{DLA}	0.0374
	Phosphorus (P)-Total (mg/L)	0.060	<0.050	<0.10 ^{DLA}	<0.25 ^{DLA}	0.224
	Potassium (K)-Total (mg/L)	3.89	0.32	9.52	16.9	3.76
	Selenium (Se)-Total (mg/L)	0.00052	<0.00010	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Silicon (Si)-Total (mg/L)	5.97	12.1	13.7	19.8	9.45
	Silver (Ag)-Total (mg/L)	0.000100	0.000126	<0.00050 ^{DLA}	<0.0010 ^{DLA}	0.000020
	Sodium (Na)-Total (mg/L)	9.57	17.2	49.9	59.7	29.6

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-56 Water 13-SEP-14 08:27 V37	L1518297-57 Water 13-SEP-14 12:13 SRK05-ETA-BR1	L1518297-58 Water 13-SEP-14 10:40 P09-LCD6	L1518297-59 Water 13-SEP-14 09:32 P09-LCD1	L1518297-60 Water 14-SEP-14 12:40 MW14-15
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	1180	9210	980	907	621
	Hardness (as CaCO3) (mg/L)	714	5540	610	536	1000
	pH (pH)	8.10	5.55	7.74	7.86	7.52
	Total Suspended Solids (mg/L)	74.4	64.7	34.7	12.4	337
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	6.2	4250	11.4	8.9	7.6
	Alkalinity, Total (as CaCO3) (mg/L)	473	29.5	268	295	69.0
	Chloride (Cl) (mg/L)	<5.0 ^{DLA}	36	<5.0 ^{DLA}	<5.0 ^{DLA}	<0.50
	Sulfate (SO4) (mg/L)	261	10800	333	253	269
	Anion Sum (meq/L)	14.9	226	12.3	11.1	6.98
	Cation Sum (meq/L)	15.4	214	13.0	11.7	21.0
	Cation - Anion Balance (%)	1.6	-2.6	2.8	2.5	50.1
Total Metals	Aluminum (Al)-Total (mg/L)	1.46	1.90	0.264	0.0221	4.20
	Antimony (Sb)-Total (mg/L)	0.00032	<0.010 ^{DLA}	0.00012	0.00025	0.00031
	Arsenic (As)-Total (mg/L)	0.00315	0.012	0.127	0.106	0.00302
	Barium (Ba)-Total (mg/L)	0.115	0.0099	0.0550	0.0433	0.106
	Beryllium (Be)-Total (mg/L)	<0.00010	<0.010 ^{DLA}	<0.00010	<0.00010	0.00021
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.050 ^{DLA}	<0.00050	<0.00050	<0.0010 ^{DLA}
	Boron (B)-Total (mg/L)	0.040	<1.0 ^{DLA}	0.015	0.015	<0.020 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.000085	0.0731	0.000033	0.000045	0.00210
	Calcium (Ca)-Total (mg/L)	95.4	426	157	139	132
	Chromium (Cr)-Total (mg/L)	0.00457	<0.010 ^{DLA}	0.00122	0.00013	0.0101
	Cobalt (Co)-Total (mg/L)	0.00125	2.19	0.00154	0.00055	0.00410
	Copper (Cu)-Total (mg/L)	0.00387	<0.050 ^{DLA}	0.00114	<0.00050	0.0098
	Iron (Fe)-Total (mg/L)	2.98	1310	8.44	4.82	6.19
	Lead (Pb)-Total (mg/L)	0.00253	0.0832	0.0162	0.0304	0.00381
	Lithium (Li)-Total (mg/L)	0.0292	0.099	0.00871	0.0103	0.0508
	Magnesium (Mg)-Total (mg/L)	115	1140	50.9	42.0	151
	Manganese (Mn)-Total (mg/L)	0.173	140	0.599	0.683	0.369
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010 ^{DLA}	<0.000010	<0.000010	0.000011
	Molybdenum (Mo)-Total (mg/L)	0.0224	<0.0050 ^{DLA}	0.00246	0.00521	0.00096
	Nickel (Ni)-Total (mg/L)	0.00438	1.78	0.00221	0.00085	0.119
	Phosphorus (P)-Total (mg/L)	0.129	<0.25 ^{DLA}	0.077	0.051	0.159
	Potassium (K)-Total (mg/L)	5.92	14.2	2.48	2.85	3.28
	Selenium (Se)-Total (mg/L)	0.00010	<0.010 ^{DLA}	<0.00010	<0.00010	0.00040
	Silicon (Si)-Total (mg/L)	5.79	18.3	7.91	7.33	14.7
	Silver (Ag)-Total (mg/L)	0.000037	<0.0010 ^{DLA}	<0.000010	0.000027	0.000056
	Sodium (Na)-Total (mg/L)	22.4	51.1	7.02	15.3	9.89

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-61 Water 14-SEP-14 18:00 PW14-01	L1518297-62 Water 14-SEP-14 15:08 PW14-07	L1518297-63 Water 14-SEP-14 12:21 PW14-06	L1518297-64 Water 14-SEP-14 10:17 MW14-03	L1518297-65 Water 14-SEP-14 10:17 DUP12
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	504	781	19700	791	1960
	Hardness (as CaCO3) (mg/L)	261	406	17900	462	462
	pH (pH)	6.69	6.41	4.47	7.78	7.67
	Total Suspended Solids (mg/L)	17.6	4.4	14.6	48.8	45.6
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	56.3	139	4890	16.6	19.5
	Alkalinity, Total (as CaCO3) (mg/L)	217	222	<2.0	403	412
	Chloride (Cl) (mg/L)	<0.50	0.65	30	5.33	5.35
	Sulfate (SO4) (mg/L)	68.1	223	25300	67.1	67.3
	Anion Sum (meq/L)	5.76	9.10	528	9.61	9.79
	Cation Sum (meq/L)	6.37	9.94	530	10.2	10.2
	Cation - Anion Balance (%)	5.1	4.4	0.2	3.1	2.2
Total Metals	Aluminum (Al)-Total (mg/L)	0.0399	0.196	80.4	0.754	0.645
	Antimony (Sb)-Total (mg/L)	<0.00010	<0.00010	<0.050 ^{DLA}	0.00028	0.00026
	Arsenic (As)-Total (mg/L)	0.00088	0.00261	<0.050 ^{DLA}	0.00991	0.0101
	Barium (Ba)-Total (mg/L)	0.0737	0.0657	0.034	0.159	0.158
	Beryllium (Be)-Total (mg/L)	0.00027	0.00078	<0.050 ^{DLA}	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.00050	<0.00050	<0.25 ^{DLA}	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.010	<0.010	<5.0 ^{DLA}	0.012	0.013
	Cadmium (Cd)-Total (mg/L)	0.000068	0.000151	2.08	0.000029	0.000027
	Calcium (Ca)-Total (mg/L)	76.0	99.1	475	127	129
	Chromium (Cr)-Total (mg/L)	0.00042	0.00093	<0.050 ^{DLA}	0.00511	0.00474
	Cobalt (Co)-Total (mg/L)	0.00655	0.00544	6.26	0.00186	0.00185
	Copper (Cu)-Total (mg/L)	0.00106	0.00063	<0.25 ^{DLA}	0.00405	0.00364
	Iron (Fe)-Total (mg/L)	14.3	23.5	1030	10.1	9.96
	Lead (Pb)-Total (mg/L)	0.000257	0.00302	1.82	0.00163	0.00161
	Lithium (Li)-Total (mg/L)	0.0183	0.0467	0.72	0.0389	0.0390
	Magnesium (Mg)-Total (mg/L)	17.9	38.8	4220	35.7	36.2
	Manganese (Mn)-Total (mg/L)	2.76	1.18	482	0.910	0.930
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.000149	0.000245	<0.025 ^{DLA}	0.00367	0.00349
	Nickel (Ni)-Total (mg/L)	0.00998	0.0157	10.2	0.00648	0.00639
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.50 ^{DLA}	0.104	0.111
	Potassium (K)-Total (mg/L)	2.20	3.43	12.4	7.33	7.40
	Selenium (Se)-Total (mg/L)	<0.00010	<0.00010	<0.050 ^{DLA}	<0.00010	<0.00010
	Silicon (Si)-Total (mg/L)	9.78	13.1	15.5	10.1	9.92
	Silver (Ag)-Total (mg/L)	<0.000010	<0.000010	<0.0050 ^{DLA}	0.000016	<0.000010
	Sodium (Na)-Total (mg/L)	5.26	9.44	34	7.40	7.47

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-66 Water 14-SEP-14 15:13 SRK08-P14	L1518297-67 Water 14-SEP-14 14:00 SRK08-P15	L1518297-68 Water 14-SEP-14 P09-GS1A	L1518297-69 Water 14-SEP-14 10:26 P09-GS1B	L1518297-70 Water 15-SEP-14 13:22 P03-03-9
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	1960	2010	1200	1530	28400
	Hardness (as CaCO3) (mg/L)	1360	1430	739	976	3850
	pH (pH)	7.67	7.81	7.54	7.64	3.20
	Total Suspended Solids (mg/L)	6.6	1.6	4.0	9.6	354
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	18.4	16.8	20.9	16.4	43200
	Alkalinity, Total (as CaCO3) (mg/L)	280	361	265	256	<2.0
	Chloride (Cl) (mg/L)	<5.0 ^{DLA}	<5.0 ^{DLA}	<5.0 ^{DLA}	<5.0 ^{DLA}	<50 ^{DLA}
	Sulfate (SO4) (mg/L)	1040	996	491	750	44200
	Anion Sum (meq/L)	27.2	27.9	15.5	20.7	921
	Cation Sum (meq/L)	27.5	28.9	15.6	20.6	1410
	Cation - Anion Balance (%)	0.5	1.8	0.2	-0.4	20.8
						^{DLA}
Total Metals	Aluminum (Al)-Total (mg/L)	0.355	0.0416	0.0562	0.0286	<0.60 ^{DLA}
	Antimony (Sb)-Total (mg/L)	0.00024	0.00024	0.0183	0.00065	<0.020 ^{DLA}
	Arsenic (As)-Total (mg/L)	0.00054	0.00033	0.131	1.80	<0.020 ^{DLA}
	Barium (Ba)-Total (mg/L)	0.0634	0.0356	0.0141	0.0264	0.018
	Beryllium (Be)-Total (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010	<0.020 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050	<0.00050	<0.10 ^{DLA}
	Boron (B)-Total (mg/L)	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010	0.015	<2.0 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.000058	0.000087	0.00219	0.000056	<0.0020 ^{DLA}
	Calcium (Ca)-Total (mg/L)	382	340	169	234	442
	Chromium (Cr)-Total (mg/L)	0.00368	0.00166	0.00023	0.00010	<0.020 ^{DLA}
	Cobalt (Co)-Total (mg/L)	0.00053	0.00030	0.0621	0.00285	<0.020 ^{DLA}
	Copper (Cu)-Total (mg/L)	0.0068	0.0012	0.00084	<0.00050	<0.10 ^{DLA}
	Iron (Fe)-Total (mg/L)	0.723	0.077	1.20	4.80	23100
	Lead (Pb)-Total (mg/L)	0.00109	0.00038	0.0790	0.000583	0.052
	Lithium (Li)-Total (mg/L)	0.0100	0.0119	0.00981	0.0124	0.26
	Magnesium (Mg)-Total (mg/L)	103	131	72.5	93.6	643
	Manganese (Mn)-Total (mg/L)	0.0103	0.00259	1.84	0.671	151
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00104	0.00070	0.00211	0.00368	<0.010 ^{DLA}
	Nickel (Ni)-Total (mg/L)	0.0033	0.0111	0.140	0.0135	<0.10 ^{DLA}
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<0.050	0.083	<2.5 ^{DLA}
	Potassium (K)-Total (mg/L)	1.29	2.04	4.20	2.59	61.2
	Selenium (Se)-Total (mg/L)	0.00115	0.00155	<0.00010	<0.00010	<0.020 ^{DLA}
	Silicon (Si)-Total (mg/L)	6.82	5.74	2.17	7.42	8.4
	Silver (Ag)-Total (mg/L)	<0.000020 ^{DLA}	<0.000020 ^{DLA}	0.000025	<0.000010	<0.0020 ^{DLA}
	Sodium (Na)-Total (mg/L)	5.67	4.82	10.4	17.7	284

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-71 Water 15-SEP-14 13:50 P03-03-4	L1518297-72 Water 15-SEP-14 14:36 P03-03-2	L1518297-73 Water 15-SEP-14 11:42 P03-05-4	L1518297-74 Water 15-SEP-14 10:45 P03-06-1	L1518297-75 Water 15-SEP-14 10:05 P03-06-2
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	2270	3350	1730	4590	4730
	Hardness (as CaCO3) (mg/L)	704	529	1040	2000	1940
	pH (pH)	5.38	4.43	6.76	4.96	5.14
	Total Suspended Solids (mg/L)	12.8	6.6	11.4	91.6	852
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	758	2960	45.4	2110	2450
	Alkalinity, Total (as CaCO3) (mg/L)	12.2	<2.0	83.5	16.5	14.7
	Chloride (Cl) (mg/L)	<10 ^{DLA}	<10 ^{DLA}	<5.0 ^{DLA}	<10 ^{DLA}	<10 ^{DLA}
	Sulfate (SO4) (mg/L)	1680	2830	1070	4060	4010
	Anion Sum (meq/L)	35.3	59.0	24.0	84.9	83.8
	Cation Sum (meq/L)	41.2	75.1	23.9	93.8	97.9
	Cation - Anion Balance (%)	7.8	12.0	-0.1	5.0	7.8
Total Metals	Aluminum (Al)-Total (mg/L)	0.081	2.75	0.266	3.09	26.1
	Antimony (Sb)-Total (mg/L)	0.0020	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}
	Arsenic (As)-Total (mg/L)	0.0047	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	0.0224
	Barium (Ba)-Total (mg/L)	0.0415	0.0111	0.0742	0.0184	0.400
	Beryllium (Be)-Total (mg/L)	<0.0010 ^{DLA}	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.0025 ^{DLA}	<0.025 ^{DLA}	<0.025 ^{DLA}
	Boron (B)-Total (mg/L)	<0.10 ^{DLA}	<0.20 ^{DLA}	<0.050 ^{DLA}	<0.50 ^{DLA}	<0.50 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.0103	0.00891	0.00280	0.0808	0.0636
	Calcium (Ca)-Total (mg/L)	190	141	324	502	481
	Chromium (Cr)-Total (mg/L)	<0.0010 ^{DLA}	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	0.0677
	Cobalt (Co)-Total (mg/L)	0.321	0.0890	0.0967	3.12	2.62
	Copper (Cu)-Total (mg/L)	<0.0050 ^{DLA}	0.021	<0.0025 ^{DLA}	<0.025 ^{DLA}	0.094
	Iron (Fe)-Total (mg/L)	432	1130	14.9	828	980
	Lead (Pb)-Total (mg/L)	0.00165	0.0027	0.00103	0.0172	0.123
	Lithium (Li)-Total (mg/L)	0.0573	0.021	0.0293	0.154	0.173
	Magnesium (Mg)-Total (mg/L)	56.1	45.4	53.8	207	200
	Manganese (Mn)-Total (mg/L)	51.4	12.7	49.8	218	188
	Mercury (Hg)-Total (mg/L)	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010	<0.000010 ^{DLA}	0.000064
	Molybdenum (Mo)-Total (mg/L)	<0.00050 ^{DLA}	<0.0010 ^{DLA}	0.00042	<0.0025 ^{DLA}	0.0026
	Nickel (Ni)-Total (mg/L)	0.352	0.142 ^{DLA}	0.0387	3.53 ^{DLA}	3.14
	Phosphorus (P)-Total (mg/L)	<0.050	<0.10	<0.050	<0.10 ^{DLA}	0.37
	Potassium (K)-Total (mg/L)	5.55	4.46	3.58	8.12	10.9
	Selenium (Se)-Total (mg/L)	<0.0010 ^{DLA}	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}
	Silicon (Si)-Total (mg/L)	17.2	20.4	11.8	39.5	69.7
	Silver (Ag)-Total (mg/L)	<0.00010 ^{DLA}	<0.00020 ^{DLA}	<0.000050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}
	Sodium (Na)-Total (mg/L)	21.7	7.6	15.4	27.8	26.4

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	<2.0				
	Hardness (as CaCO3) (mg/L)	<0.50				
	pH (pH)	5.72				
	Total Suspended Solids (mg/L)	<1.0				
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	1.8				
	Alkalinity, Total (as CaCO3) (mg/L)	<2.0				
	Chloride (Cl) (mg/L)	<0.50				
	Sulfate (SO4) (mg/L)	<0.50				
	Anion Sum (meq/L)	<0.10				
	Cation Sum (meq/L)	<0.10				
	Cation - Anion Balance (%)	0.0				
Total Metals	Aluminum (Al)-Total (mg/L)	<0.0030				
	Antimony (Sb)-Total (mg/L)	<0.00010				
	Arsenic (As)-Total (mg/L)	<0.00010				
	Barium (Ba)-Total (mg/L)	<0.000050				
	Beryllium (Be)-Total (mg/L)	<0.00010				
	Bismuth (Bi)-Total (mg/L)	<0.00050				
	Boron (B)-Total (mg/L)	<0.010				
	Cadmium (Cd)-Total (mg/L)	<0.000010				
	Calcium (Ca)-Total (mg/L)	<0.050				
	Chromium (Cr)-Total (mg/L)	<0.00010				
	Cobalt (Co)-Total (mg/L)	<0.00010				
	Copper (Cu)-Total (mg/L)	<0.00050				
	Iron (Fe)-Total (mg/L)	<0.010				
	Lead (Pb)-Total (mg/L)	<0.000050				
	Lithium (Li)-Total (mg/L)	<0.00050				
	Magnesium (Mg)-Total (mg/L)	<0.10				
	Manganese (Mn)-Total (mg/L)	<0.000050				
	Mercury (Hg)-Total (mg/L)	<0.000010				
	Molybdenum (Mo)-Total (mg/L)	<0.000050				
	Nickel (Ni)-Total (mg/L)	<0.00050				
	Phosphorus (P)-Total (mg/L)	<0.050				
	Potassium (K)-Total (mg/L)	<0.10				
	Selenium (Se)-Total (mg/L)	<0.00010				
	Silicon (Si)-Total (mg/L)	<0.050				
	Silver (Ag)-Total (mg/L)	<0.000010				
	Sodium (Na)-Total (mg/L)	<0.050				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-1 Water TRAVEL BLANK	L1518297-2 Water 12-SEP-14 DUP 8	L1518297-3 Water 15-SEP-14 09:33 P03-06-6	L1518297-4 Water 13-SEP-14 DUP 7	L1518297-5 Water 11-SEP-14 DUP 5
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	<0.00020	0.336	0.14	7.24	1.70
	Sulfur (S)-Total (mg/L)	<0.50	58.5	8360	561 ^{DLA}	186
	Thallium (Tl)-Total (mg/L)	<0.000010	0.000063	0.0110 ^{DLA}	<0.000020 ^{DLA}	0.000014
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.050 ^{DLA}	<0.00020 ^{DLA}	0.00012
	Titanium (Ti)-Total (mg/L)	<0.010	0.011	<5.0 ^{DLA}	<0.020 ^{DLA}	0.019
	Uranium (U)-Total (mg/L)	<0.000010	0.00127	0.0891 ^{DLA}	0.000601 ^{DLA}	0.0213
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.50 ^{DLA}	<0.0020 ^{DLA}	0.0016
	Zinc (Zn)-Total (mg/L)	<0.0030	5.17	2680 ^{DLA}	14.3 ^{DLA}	0.0094
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.40 ^{DLA}	<0.0016 ^{DLA}	0.00195
Dissolved Metals	Dissolved Mercury Filtration Location		FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location		FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)		0.0279	4.57 ^{DLA}	0.510 ^{DTC}	0.0018
	Antimony (Sb)-Dissolved (mg/L)		<0.00010	<0.050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Dissolved (mg/L)		0.00011	0.086 ^{DLA}	0.00033	0.00162
	Barium (Ba)-Dissolved (mg/L)		0.0261	<0.025 ^{DLA}	0.0386 ^{DLA}	0.0407
	Beryllium (Be)-Dissolved (mg/L)		0.00011	<0.050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)		<0.00050	<0.25 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Dissolved (mg/L)		<0.010	<5.0 ^{DLA}	<0.020 ^{DLA}	0.021
	Cadmium (Cd)-Dissolved (mg/L)		0.00199	0.150	0.000579 ^{DTC}	<0.000010
	Calcium (Ca)-Dissolved (mg/L)		72.8	391 ^{DLA}	523 ^{DLA}	213
	Chromium (Cr)-Dissolved (mg/L)		<0.00010	<0.050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Cobalt (Co)-Dissolved (mg/L)		0.0469	1.51 ^{DLA}	0.0479 ^{DLA}	0.00183
	Copper (Cu)-Dissolved (mg/L)		<0.00020	<0.10 ^{DLA}	<0.00040 ^{DLA}	<0.00020
	Iron (Fe)-Dissolved (mg/L)		5.36	2090	33.0	1.93
	Lead (Pb)-Dissolved (mg/L)		0.000886	2.66	0.00404 ^{DTC}	0.000085
	Lithium (Li)-Dissolved (mg/L)		0.0279	0.46	0.0143	0.0273
	Magnesium (Mg)-Dissolved (mg/L)		19.5	3580	105	244
	Manganese (Mn)-Dissolved (mg/L)		1.64	643	5.33	0.0582
	Mercury (Hg)-Dissolved (mg/L)		<0.000010	<0.000010 ^{DLA}	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)		0.000080	<0.025 ^{DLA}	0.00015	0.00131
	Nickel (Ni)-Dissolved (mg/L)		0.0512	1.55 ^{DLA}	0.0402	0.00434
	Phosphorus (P)-Dissolved (mg/L)		<0.050	<0.50 ^{DLA}	0.213	<0.050
	Potassium (K)-Dissolved (mg/L)		2.17	11.3	3.94	4.73
	Selenium (Se)-Dissolved (mg/L)		<0.00010	<0.050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Silicon (Si)-Dissolved (mg/L)		8.06	12.4 ^{DLA}	10.5	7.13
	Silver (Ag)-Dissolved (mg/L)		<0.000010	<0.0050 ^{DLA}	0.000023	0.000011
	Sodium (Na)-Dissolved (mg/L)		5.96	118	31.8	7.97

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-6 Water 14-SEP-14 DUP 9	L1518297-7 Water 11-SEP-14 DUP 6	L1518297-8 Water 15-SEP-14 09:48 MW14-02S	L1518297-9 Water 15-SEP-14 11:06 MW14-02D	L1518297-10 Water 11-SEP-14 17:21 P96-8B
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	1.84	0.711	0.110	0.350	4.21
	Sulfur (S)-Total (mg/L)	352	90.3	4.04	25.1	3190
	Thallium (Tl)-Total (mg/L)	<0.000020 ^{DLA}	<0.000010	0.000019	<0.000010	<0.0020 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.00010	<0.00010	<0.020 ^{DLA}
	Titanium (Ti)-Total (mg/L)	0.036	<0.010	0.022	<0.010	<2.0 ^{DLA}
	Uranium (U)-Total (mg/L)	0.00800	0.00161	0.000961	0.000470	0.0024 ^{DLA}
	Vanadium (V)-Total (mg/L)	<0.0020 ^{DLA}	<0.0010	0.0013	<0.0010	<0.20 ^{DLA}
	Zinc (Zn)-Total (mg/L)	0.0084	0.233	0.0204	0.752	1030 ^{DLA}
	Zirconium (Zr)-Total (mg/L)	<0.0016 ^{DLA}	<0.00080	<0.00080	<0.00080	<0.16 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.0020 ^{DLA}	0.0082	0.0061	0.0473	2.88 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	0.00021	<0.00010	<0.00010	<0.00010	<0.020 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00025	0.0220	0.00043	0.00217	<0.020 ^{DLA}
	Barium (Ba)-Dissolved (mg/L)	0.0569	0.0453	0.0437	0.0326	0.014 ^{DLA}
	Beryllium (Be)-Dissolved (mg/L)	<0.00020 ^{DLA}	0.00015	<0.00010	0.00095	<0.020 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.00050	<0.00050	<0.00050	<0.10 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.020 ^{DLA}	0.011	<0.010	<0.010	<2.0 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.000058	0.000110	0.000028	0.000065	0.263
	Calcium (Ca)-Dissolved (mg/L)	404	157	25.4	59.8	433 ^{DLA}
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	0.00091	0.00069	<0.020 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	<0.00020 ^{DLA}	0.00313	<0.00010	0.00428	1.99 ^{DLA}
	Copper (Cu)-Dissolved (mg/L)	0.00367	<0.00020	0.00085	<0.00020	<0.040 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	<0.010 ^{DLA}	13.6	0.071	14.7	400
	Lead (Pb)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.000050	0.000105	0.000101	0.095
	Lithium (Li)-Dissolved (mg/L)	0.0090	0.0334	0.00296	0.0402	0.27
	Magnesium (Mg)-Dissolved (mg/L)	106	61.1	5.08	20.0	1460
	Manganese (Mn)-Dissolved (mg/L)	0.00022	0.780	0.0287	0.895	143
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}
	Molybdenum (Mo)-Dissolved (mg/L)	0.00085	0.000556	0.000624	0.000140	<0.010 ^{DLA}
	Nickel (Ni)-Dissolved (mg/L)	0.0014	0.00819	0.00119	0.0125	2.21 ^{DLA}
	Phosphorus (P)-Dissolved (mg/L)	<0.050	0.171	<0.050	<0.050	<0.25 ^{DLA}
	Potassium (K)-Dissolved (mg/L)	1.27	4.66	0.60	2.71	20.2 ^{DLA}
	Selenium (Se)-Dissolved (mg/L)	0.00122	0.00010	0.00024	<0.00010	<0.020 ^{DLA}
	Silicon (Si)-Dissolved (mg/L)	6.18	12.9	5.06	10.8	17.5 ^{DLA}
	Silver (Ag)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000010	<0.000010	<0.000010	<0.0020 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	5.56	9.67	1.96	9.00	61

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-11 Water 11-SEP-14 16:46 P96-8A	L1518297-12 Water 11-SEP-14 15:34 SRK08-P9	L1518297-13 Water 11-SEP-14 14:35 SRK08-SBR2	L1518297-14 Water 11-SEP-14 13:18 SRK08-SBR3	L1518297-15 Water 11-SEP-14 12:18 SRK05-SP-1B
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	3.92	10.9	1.18	1.19	0.713
	Sulfur (S)-Total (mg/L)	3120	465	787	594	91.4
	Thallium (Tl)-Total (mg/L)	<0.0020 ^{DLA}	<0.000020 ^{DLA}	<0.00020 ^{DLA}	0.000081 ^{DLA}	<0.000010
	Tin (Sn)-Total (mg/L)	<0.020 ^{DLA}	<0.00020 ^{DLA}	<0.0020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Total (mg/L)	<2.0 ^{DLA}	0.067	0.33	<0.020 ^{DLA}	<0.010
	Uranium (U)-Total (mg/L)	0.0236	0.00429	0.00342	0.0403 ^{DLA}	0.00162
	Vanadium (V)-Total (mg/L)	<0.20 ^{DLA}	0.0061	0.024	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Total (mg/L)	1160	0.0258 ^{DLA}	106	0.0844 ^{DLA}	0.239
	Zirconium (Zr)-Total (mg/L)	<0.16 ^{DLA}	<0.0016 ^{DLA}	<0.016 ^{DLA}	<0.0016 ^{DLA}	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	20.3	<0.0020 ^{DLA}	0.028	0.0022 ^{DLA}	0.0078
	Antimony (Sb)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.00020 ^{DLA}	<0.0020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Dissolved (mg/L)	<0.020 ^{DLA}	0.00042	<0.0020 ^{DLA}	<0.00020 ^{DLA}	0.0224
	Barium (Ba)-Dissolved (mg/L)	0.010	0.0277 ^{DLA}	0.0223 ^{DLA}	0.0126 ^{DLA}	0.0469
	Beryllium (Be)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.00020 ^{DLA}	<0.0020 ^{DLA}	<0.00020 ^{DLA}	0.00015
	Bismuth (Bi)-Dissolved (mg/L)	<0.10 ^{DLA}	<0.0010 ^{DLA}	<0.010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Dissolved (mg/L)	<2.0 ^{DLA}	<0.020 ^{DLA}	<0.20 ^{DLA}	<0.020 ^{DLA}	0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.358	0.000021	0.0648	<0.000020 ^{DLA}	0.000113
	Calcium (Ca)-Dissolved (mg/L)	410	427 ^{DLA}	316 ^{DLA}	416 ^{DLA}	157
	Chromium (Cr)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.00020 ^{DLA}	<0.0020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	2.18	0.00328 ^{DLA}	0.311 ^{DLA}	0.00093	0.00319
	Copper (Cu)-Dissolved (mg/L)	0.255	<0.00040 ^{DLA}	<0.0040 ^{DLA}	0.00049	<0.00020
	Iron (Fe)-Dissolved (mg/L)	300	0.985 ^{DLA}	14.9	0.026 ^{DLA}	13.8
	Lead (Pb)-Dissolved (mg/L)	0.190	<0.00010 ^{DLA}	0.0070	<0.00010 ^{DLA}	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.31	0.0145	0.079	0.0788	0.0325
	Magnesium (Mg)-Dissolved (mg/L)	1350	128	439	358	62.0
	Manganese (Mn)-Dissolved (mg/L)	146	0.576	31.4	0.0157	0.813
	Mercury (Hg)-Dissolved (mg/L)	<0.000010 ^{DLA}	<0.000010	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	<0.010 ^{DLA}	0.00311	<0.0010 ^{DLA}	<0.00010 ^{DLA}	0.000554
	Nickel (Ni)-Dissolved (mg/L)	2.54 ^{DLA}	0.0069	0.636	0.0339	0.00837
	Phosphorus (P)-Dissolved (mg/L)	<0.25 ^{DLA}	<0.050	<0.050	<0.050	0.172
	Potassium (K)-Dissolved (mg/L)	17.9	1.87	7.74	7.88	4.81
	Selenium (Se)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.00020 ^{DLA}	<0.0020 ^{DLA}	0.00080	0.00011
	Silicon (Si)-Dissolved (mg/L)	34.5	7.24 ^{DLA}	13.7 ^{DLA}	4.88 ^{DLA}	12.9
	Silver (Ag)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.000020 ^{DLA}	<0.00020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Dissolved (mg/L)	64	19.0	19.9	51.1	9.80

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-16 Water 11-SEP-14 09:35 MW14-09	L1518297-17 Water 11-SEP-14 10:13 MW14-10	L1518297-18 Water 11-SEP-14 08:52 SRK05-SP-2	L1518297-19 Water 11-SEP-14 10:30 S1B	L1518297-20 Water 11-SEP-14 16:48 FB1
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.456	0.484	0.345	0.348	<0.00020
	Sulfur (S)-Total (mg/L)	58.6	77.5	50.2	62.8	<0.50
	Thallium (Tl)-Total (mg/L)	0.000019	0.000027	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	0.00017	0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	0.036	0.051	<0.010	<0.010	<0.010
	Uranium (U)-Total (mg/L)	0.00762	0.0203	0.00137	0.00183	<0.000010
	Vanadium (V)-Total (mg/L)	0.0018	0.0040	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	0.0859	0.0103	0.193	0.0233	<0.0030
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0126	0.0035	0.0084	0.0070	<0.0010
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	0.00013	<0.00010	0.00017	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00157	0.00027	<0.00010	0.00021	<0.00010
	Barium (Ba)-Dissolved (mg/L)	0.0563	0.0399	0.0849	0.0424	<0.000050
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	0.017	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.000081	0.000045	0.000208	0.000159	<0.000010
	Calcium (Ca)-Dissolved (mg/L)	96.6	90.6	77.1	115	<0.050
	Chromium (Cr)-Dissolved (mg/L)	0.00011	0.00095	<0.00010	0.00013	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00469	0.00016	0.00749	<0.00010	<0.00010
	Copper (Cu)-Dissolved (mg/L)	0.00093	0.00077	0.00088	0.00329	<0.00020
	Iron (Fe)-Dissolved (mg/L)	0.634	<0.010	0.013	<0.010	<0.010
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.0128	0.0243	0.0120	0.0128	<0.00050
	Magnesium (Mg)-Dissolved (mg/L)	32.3	23.9	18.9	31.6	<0.10
	Manganese (Mn)-Dissolved (mg/L)	2.10	0.0171	1.90	0.00919	<0.000050
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00163	0.000879	0.000123	0.000177	<0.000050
	Nickel (Ni)-Dissolved (mg/L)	0.0108	0.00122	0.00681	0.00368	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	2.90	4.11	2.05	2.72	<0.10
	Selenium (Se)-Dissolved (mg/L)	0.00020	0.00309	<0.00010	0.00014	<0.00010
	Silicon (Si)-Dissolved (mg/L)	7.22	5.39	7.06	6.23	<0.050
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	31.0	137	9.86	24.3	<0.050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-21 Water 11-SEP-14 14:25 P2001-2B	L1518297-22 Water 11-SEP-14 09:37 V34	L1518297-23 Water 11-SEP-14 10:46 V35	L1518297-24 Water 11-SEP-14 15:44 V36	L1518297-25 Water 11-SEP-14 12:10 P2001-3
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	2.28	1.75	1.02	2.15	0.654
	Sulfur (S)-Total (mg/L)	465	187	466	647	42.2
	Thallium (Tl)-Total (mg/L)	<0.000020 ^{DLA}	0.000010	0.000022	0.000092	0.000046
	Tin (Sn)-Total (mg/L)	0.00053	<0.00010	<0.00020 ^{DLA}	0.00027	0.00022
	Titanium (Ti)-Total (mg/L)	<0.020 ^{DLA}	0.017	<0.020 ^{DLA}	<0.020 ^{DLA}	0.079
	Uranium (U)-Total (mg/L)	0.0716	0.0217	0.0761	0.0640	0.0127
	Vanadium (V)-Total (mg/L)	<0.0020 ^{DLA}	0.0017	<0.0020 ^{DLA}	<0.0020 ^{DLA}	0.0089
	Zinc (Zn)-Total (mg/L)	0.0075	0.0101	0.0083	0.0845	0.0282
	Zirconium (Zr)-Total (mg/L)	<0.0016 ^{DLA}	0.00227	<0.0016 ^{DLA}	<0.0016 ^{DLA}	0.00147
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.0020 ^{DLA}	0.0035	<0.0020 ^{DLA}	<0.0020 ^{DLA}	0.0019
	Antimony (Sb)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	0.00025	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.0109	0.00175	0.00052	0.00174	0.00274
	Barium (Ba)-Dissolved (mg/L)	0.0125	0.0420	0.0103	0.00693	0.0284
	Beryllium (Be)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.020 ^{DLA}	0.021	<0.020 ^{DLA}	<0.020 ^{DLA}	0.022
	Cadmium (Cd)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000010	0.000113	0.000495	0.000591
	Calcium (Ca)-Dissolved (mg/L)	446	212	412	457	97.1
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	0.00072 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00034	0.00201	<0.00020 ^{DLA}	0.00198	0.00059
	Copper (Cu)-Dissolved (mg/L)	<0.00040 ^{DLA}	<0.00020	0.00051	0.00233	0.00172
	Iron (Fe)-Dissolved (mg/L)	2.42	1.85	<0.010	<0.010	0.015
	Lead (Pb)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.000050	<0.00010 ^{DLA}	0.00264	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.0388	0.0264	0.0223	0.0444	0.0101
	Magnesium (Mg)-Dissolved (mg/L)	251	223	216	319	64.4
	Manganese (Mn)-Dissolved (mg/L)	0.104	0.0609	0.00112	0.118	0.694
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00047	0.00133	0.00102	0.00122	0.0128
	Nickel (Ni)-Dissolved (mg/L)	0.0029	0.00470	0.0043	0.0147	0.00188
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	5.23	4.58	3.86	5.68	3.16
	Selenium (Se)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	0.00176	0.00059	<0.00010
	Silicon (Si)-Dissolved (mg/L)	7.00	6.72	5.82	7.00	6.54
	Silver (Ag)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Dissolved (mg/L)	9.43	8.07	8.00	9.32	34.3

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-26 Water 12-SEP-14 15:49 SRK05-5C	L1518297-27 Water 12-SEP-14 14:39 BH05-9B-R	L1518297-28 Water 12-SEP-14 13:56 P96-9A	L1518297-29 Water 12-SEP-14 12:00 SRK05-07	L1518297-30 Water 12-SEP-14 09:29 P09-VC2
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.866	1.18	1.37	1.52	0.928
	Sulfur (S)-Total (mg/L)	61.1	58.7	602	615	14.0
	Thallium (Tl)-Total (mg/L)	0.000023	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Total (mg/L)	<0.00010	0.00020	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Total (mg/L)	0.012	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Total (mg/L)	0.00241	0.000961	0.0490	0.0356	0.00446
	Vanadium (V)-Total (mg/L)	0.0015	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Total (mg/L)	0.0087	0.0066	0.0876	<0.0060 ^{DLA}	0.0986
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0406	0.0015	0.0040	<0.0020 ^{DLA}	0.0011
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	0.00054	0.00045
	Arsenic (As)-Dissolved (mg/L)	0.00400	0.00593	0.00042	0.00322	0.119
	Barium (Ba)-Dissolved (mg/L)	0.0851	0.0145	0.0541	0.0449	0.0415
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Dissolved (mg/L)	0.011	0.037	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.000021	0.000011	0.000683	0.000091	<0.000010
	Calcium (Ca)-Dissolved (mg/L)	87.8	51.9	393	487	64.8
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	0.00033 ^{DLA}	0.00045	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	0.00052	<0.00010	<0.00020 ^{DLA}	0.00175	0.00021
	Copper (Cu)-Dissolved (mg/L)	<0.00020	0.00031	0.00271	0.00097	<0.00020
	Iron (Fe)-Dissolved (mg/L)	0.125	<0.010	<0.010 ^{DLA}	<0.010	1.96
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.00010 ^{DLA}	0.00011	0.000089
	Lithium (Li)-Dissolved (mg/L)	0.00839	0.0223	0.0137	0.0104	0.00781
	Magnesium (Mg)-Dissolved (mg/L)	27.5	23.5	378	339	12.3
	Manganese (Mn)-Dissolved (mg/L)	0.961	0.00139	0.0484	0.0572	0.0842
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.0202	0.0107	0.00072	0.00055	0.0101
	Nickel (Ni)-Dissolved (mg/L)	0.00144	<0.00050	0.0139	0.0481	<0.00050
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	1.81	1.90	6.19	2.76	1.13
	Selenium (Se)-Dissolved (mg/L)	<0.00010	<0.00010	0.00022	<0.00020 ^{DLA}	<0.00010
	Silicon (Si)-Dissolved (mg/L)	5.35	6.40	6.54	7.38 ^{DLA}	6.50
	Silver (Ag)-Dissolved (mg/L)	<0.000010	0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Dissolved (mg/L)	17.4	47.6	13.3	13.7	5.97

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-31 Water 12-SEP-14 10:40 P09-VC1	L1518297-32 Water 12-SEP-14 12:56 SRK05-8	L1518297-33 Water 12-SEP-14 14:59 BH14B	L1518297-34 Water 12-SEP-14 18:16 P96-6	L1518297-35 Water 12-SEP-14 15:04 BH13B
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.582	1.51	3.73	0.849	0.883
	Sulfur (S)-Total (mg/L)	17.5	430	747	399	199
	Thallium (Tl)-Total (mg/L)	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}	0.000012
	Tin (Sn)-Total (mg/L)	0.00026	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Total (mg/L)	0.00622	0.0279	0.207	0.0621	0.00190
	Vanadium (V)-Total (mg/L)	0.0013	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Total (mg/L)	0.0490	<0.0060 ^{DLA}	1.23	0.389	0.0038
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0015	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}	0.0032
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00200	0.00029	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Barium (Ba)-Dissolved (mg/L)	0.0194	0.0117	0.0196	0.0205	0.0301
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	<0.000010	0.000029	0.000235	0.000297	0.000045
	Calcium (Ca)-Dissolved (mg/L)	45.9	399	544	336	159
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	0.00054	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	0.00039	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00133
	Copper (Cu)-Dissolved (mg/L)	<0.00020	0.00264	0.00075	<0.00040 ^{DLA}	0.00478
	Iron (Fe)-Dissolved (mg/L)	0.375	<0.010 ^{DLA}	<0.010	<0.010	0.026
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.00010 ^{DLA}	0.0155	<0.00010 ^{DLA}	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.00337	0.0182	0.0743	0.0324	0.0158
	Magnesium (Mg)-Dissolved (mg/L)	8.93	223	347	154	68.8
	Manganese (Mn)-Dissolved (mg/L)	0.0115	0.00018	0.00875	0.00239	0.000549
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.000407	0.00042	0.00021	<0.00010	0.00349
	Nickel (Ni)-Dissolved (mg/L)	<0.00050	0.0018	0.0137	0.0124	0.00750
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	0.98	1.91	4.28	4.57	2.96
	Selenium (Se)-Dissolved (mg/L)	<0.00010	0.00032	0.00061	0.00402	0.0101
	Silicon (Si)-Dissolved (mg/L)	5.71	6.13	9.09	8.65	3.83
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Dissolved (mg/L)	19.2	10.4	17.9	5.85	7.07

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-36 Water 12-SEP-14 16:00 BH14A	L1518297-37 Water 12-SEP-14 13:20 BH5	L1518297-38 Water 12-SEP-14 12:18 SRK08-P12A	L1518297-39 Water 12-SEP-14 11:45 SRK08-P12B	L1518297-40 Water 12-SEP-14 10:49 BH10A
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	3.62	0.401	1.27	0.930	0.336
	Sulfur (S)-Total (mg/L)	884	45.0	59.8	38.8	30.3
	Thallium (Tl)-Total (mg/L)	<0.000050 ^{DLA}	0.000065	0.000150	0.000059	0.000072
	Tin (Sn)-Total (mg/L)	<0.000050 ^{DLA}	<0.00010	0.00022	<0.00010	<0.00010
	Titanium (Ti)-Total (mg/L)	<0.050 ^{DLA}	<0.010	0.079	<0.010	<0.010
	Uranium (U)-Total (mg/L)	0.154	0.000347	0.00254	0.00127	0.000132
	Vanadium (V)-Total (mg/L)	<0.0050 ^{DLA}	<0.0010	0.0078	<0.0010	<0.0010
	Zinc (Zn)-Total (mg/L)	23.7	2.84	1.09	0.271	0.647
	Zirconium (Zr)-Total (mg/L)	<0.0040 ^{DLA}	<0.00080	<0.00080	<0.00080	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.0050 ^{DLA}	0.0455	0.0211	0.0352	0.0034
	Antimony (Sb)-Dissolved (mg/L)	<0.00050 ^{DLA}	<0.00010	0.00032	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	<0.00050 ^{DLA}	0.00048	0.00415	0.00016	<0.00010
	Barium (Ba)-Dissolved (mg/L)	0.0159	0.0432	0.0330	0.121	0.0225
	Beryllium (Be)-Dissolved (mg/L)	<0.00050 ^{DLA}	0.00032	0.00075	0.00055	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.0025 ^{DLA}	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.050 ^{DLA}	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.00270	0.00102	0.000027	0.000070	0.00443
	Calcium (Ca)-Dissolved (mg/L)	530	80.7	198	133	72.5
	Chromium (Cr)-Dissolved (mg/L)	<0.00050 ^{DLA}	0.00024	<0.00010	<0.00010	<0.00010
	Cobalt (Co)-Dissolved (mg/L)	<0.00050 ^{DLA}	0.0179	0.00809	0.00396	<0.00010
	Copper (Cu)-Dissolved (mg/L)	0.0019	0.00035	<0.00020	<0.00020	0.00166
	Iron (Fe)-Dissolved (mg/L)	<0.010	23.2	14.7	4.02	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.0185	0.000504	0.000695	0.000101	0.000164
	Lithium (Li)-Dissolved (mg/L)	0.107	0.0364	0.104	0.0952	0.00938
	Magnesium (Mg)-Dissolved (mg/L)	461	29.9	56.2	35.3	16.9
	Manganese (Mn)-Dissolved (mg/L)	0.0511	1.86	0.882	0.702	0.000271
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00038	<0.000050	<0.000050	<0.000050	<0.000050
	Nickel (Ni)-Dissolved (mg/L)	0.299	0.0239	0.0146	0.00756	0.00245
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	4.53	3.47	3.32	3.62	1.36
	Selenium (Se)-Dissolved (mg/L)	0.00093	<0.00010	<0.00010	<0.00010	0.00057
	Silicon (Si)-Dissolved (mg/L)	10.8	11.9	10.4	10.3	6.32
	Silver (Ag)-Dissolved (mg/L)	<0.000050 ^{DLA}	<0.000010	<0.000010	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	21.1	13.1	27.7	18.4	5.15

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-41 Water 12-SEP-14 09:59 BH10B	L1518297-42 Water 12-SEP-14 08:56 P05-04	L1518297-43 Water 12-SEP-14 08:21 BH6	L1518297-44 Water 13-SEP-14 10:10 MW14-13	L1518297-45 Water 13-SEP-14 10:10 DUP10
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.271	0.419	0.349	1.07	1.04
	Sulfur (S)-Total (mg/L)	23.8	52.0	62.1	236	227
	Thallium (Tl)-Total (mg/L)	0.000358	0.000012	0.000065	<0.000020 ^{DLA}	0.000017
	Tin (Sn)-Total (mg/L)	0.00014	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Total (mg/L)	0.039	<0.010	0.011	<0.020 ^{DLA}	<0.010
	Uranium (U)-Total (mg/L)	0.000903	0.00171	0.00130	0.00519	0.00504
	Vanadium (V)-Total (mg/L)	0.0027	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Total (mg/L)	0.872	2.12	5.43	9.48	9.26
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.00080	<0.0016 ^{DLA}	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0496	0.0666	0.0271	0.0635	0.0706
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00010
	Arsenic (As)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00020 ^{DLA}	0.00014
	Barium (Ba)-Dissolved (mg/L)	0.0122	0.0348	0.0265	0.0599	0.0557
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.0010 ^{DLA}	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.020 ^{DLA}	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.00149	0.00422	0.00203	0.00357	0.00333
	Calcium (Ca)-Dissolved (mg/L)	61.5	87.5	70.8	287	288
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00020 ^{DLA}	0.00029
	Cobalt (Co)-Dissolved (mg/L)	0.00015	0.00120	0.0464	0.00058	0.00053
	Copper (Cu)-Dissolved (mg/L)	0.00131	0.00073	<0.00020	0.00284	0.00275
	Iron (Fe)-Dissolved (mg/L)	<0.010	<0.010	5.24	<0.010	<0.010
	Lead (Pb)-Dissolved (mg/L)	0.00348	<0.000050	0.000893	<0.00010 ^{DLA}	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.0130	0.0137	0.0282	0.0349	0.0361
	Magnesium (Mg)-Dissolved (mg/L)	16.1	22.3	18.8	82.2	83.7
	Manganese (Mn)-Dissolved (mg/L)	0.00310	0.0203	1.62	0.456	0.432
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	<0.000050	0.000053	0.000075	<0.00010	0.000078
	Nickel (Ni)-Dissolved (mg/L)	0.00450	0.0168	0.0504	0.128	0.115
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	1.56	1.62	2.14	4.93	5.31
	Selenium (Se)-Dissolved (mg/L)	0.00029	0.00036	<0.00010	0.00049	0.00045
	Silicon (Si)-Dissolved (mg/L)	5.54	6.42	7.86	13.4	13.7
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000020 ^{DLA}	<0.000010
	Sodium (Na)-Dissolved (mg/L)	5.52	5.93	5.95	12.5	11.3

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-46 Water 13-SEP-14 09:33 MW14-16	L1518297-47 Water 13-SEP-14 13:34 MW14-12S	L1518297-48 Water 13-SEP-14 11:52 MW14-12D	L1518297-49 Water 13-SEP-14 08:30 BH8	L1518297-50 Water 13-SEP-14 18:20 P2001-2A
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.995	0.336	0.431	1.20	2.33
	Sulfur (S)-Total (mg/L)	194	99.5	92.8	871	501
	Thallium (Tl)-Total (mg/L)	0.000013	0.000015	<0.000010	0.00598 ^{DLA}	<0.000020 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.00010	<0.0020 ^{DLA}	0.00021 ^{DLA}
	Titanium (Ti)-Total (mg/L)	<0.010	0.033	<0.010	<0.20 ^{DLA}	<0.020 ^{DLA}
	Uranium (U)-Total (mg/L)	0.00993	0.000123	0.00167	0.00488 ^{DLA}	0.0771
	Vanadium (V)-Total (mg/L)	<0.0010	0.0024	<0.0010	<0.020 ^{DLA}	0.0024
	Zinc (Zn)-Total (mg/L)	4.48	2.39	2.19	163 ^{DLA}	0.0114 ^{DLA}
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.00080	<0.016 ^{DLA}	<0.0016 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0216	0.0187	0.0118	1.58 ^{DLA}	<0.0020 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.0020 ^{DLA}	0.00026 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00021	0.00015	0.00012	<0.0020 ^{DLA}	0.0157
	Barium (Ba)-Dissolved (mg/L)	0.0730	0.113	0.114	0.0096	0.0452 ^{DLA}
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	0.0026 ^{DLA}	<0.00020 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.00050	<0.010 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.20 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.00222	0.000952	0.00101	0.477	<0.000020 ^{DLA}
	Calcium (Ca)-Dissolved (mg/L)	301	72.1	131	276 ^{DLA}	455 ^{DLA}
	Chromium (Cr)-Dissolved (mg/L)	0.00020	0.00015	0.00012	<0.0020 ^{DLA}	<0.00020 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	0.00053	0.00011	0.00012	0.459	0.00042 ^{DLA}
	Copper (Cu)-Dissolved (mg/L)	0.00231	0.00114	0.00092	1.43	<0.00040 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	<0.010	<0.010	<0.010	489	5.16
	Lead (Pb)-Dissolved (mg/L)	<0.000050	<0.000050	<0.000050	0.220	0.00018
	Lithium (Li)-Dissolved (mg/L)	0.0292	0.00961	0.0173	0.084	0.0357
	Magnesium (Mg)-Dissolved (mg/L)	75.6	36.4	36.8	206	252
	Manganese (Mn)-Dissolved (mg/L)	0.0527	0.205	0.0588	9.75	0.145
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010 ^{DLA}
	Molybdenum (Mo)-Dissolved (mg/L)	0.000139	<0.000050	0.000104	<0.0010 ^{DLA}	0.00175
	Nickel (Ni)-Dissolved (mg/L)	0.0813	0.0149	0.0470	0.441	0.0058
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	4.96	2.64	3.68	7.24	5.59 ^{DLA}
	Selenium (Se)-Dissolved (mg/L)	0.00201	0.00014	0.00038	<0.0020 ^{DLA}	<0.00020 ^{DLA}
	Silicon (Si)-Dissolved (mg/L)	11.2	10.9	8.96	4.75 ^{DLA}	7.21 ^{DLA}
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.00020 ^{DLA}	<0.000020 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	9.11	4.92	6.54	21.9	8.51

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-51 Water 13-SEP-14 17:55 SRK05-9	L1518297-52 Water 13-SEP-14 16:13 P09-ETA-1	L1518297-53 Water 13-SEP-14 15:07 P09-ETA-2	L1518297-54 Water 13-SEP-14 13:53 SRK04-3A	L1518297-55 Water 13-SEP-14 13:02 SRK05-ETA-BR2
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.921	0.497	4.03	3.70	7.20
	Sulfur (S)-Total (mg/L)	367	10.6	1940	3270	584
	Thallium (Tl)-Total (mg/L)	0.000035	0.000034	<0.00050 ^{DLA}	<0.0010 ^{DLA}	<0.000020 ^{DLA}
	Tin (Sn)-Total (mg/L)	0.00039	0.00073	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Titanium (Ti)-Total (mg/L)	0.026	0.012	<0.50 ^{DLA}	<1.0 ^{DLA}	<0.020 ^{DLA}
	Uranium (U)-Total (mg/L)	0.0321	0.000549	0.00522	0.0088	0.000676
	Vanadium (V)-Total (mg/L)	0.0029	<0.0010	<0.050 ^{DLA}	<0.10 ^{DLA}	<0.0020 ^{DLA}
	Zinc (Zn)-Total (mg/L)	0.0252	0.0156	286	726	14.8
	Zirconium (Zr)-Total (mg/L)	<0.00080	0.00130	<0.040 ^{DLA}	<0.080 ^{DLA}	<0.0016 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0025	0.0012	0.093	4.40	<0.0020 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	0.00029	<0.00010	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00087	<0.00010	0.178	0.199	0.00022
	Barium (Ba)-Dissolved (mg/L)	0.0553	0.00999	0.0092	0.0124	0.0353
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.00010	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.025 ^{DLA}	<0.050 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.010	0.012	<0.50 ^{DLA}	<1.0 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.000250	<0.000010	<0.00050 ^{DLA}	0.0715	0.000249
	Calcium (Ca)-Dissolved (mg/L)	272	63.1	494	394	499
	Chromium (Cr)-Dissolved (mg/L)	0.00039	<0.00010	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	<0.00010	<0.00010	0.671	2.21	0.0424
	Copper (Cu)-Dissolved (mg/L)	0.00210	<0.00020	<0.010 ^{DLA}	<0.020 ^{DLA}	<0.00040 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	<0.010	0.152	413	1010	33.5
	Lead (Pb)-Dissolved (mg/L)	0.000546	0.000079	<0.0025 ^{DLA}	0.0112	0.00014
	Lithium (Li)-Dissolved (mg/L)	0.00748	<0.00050	0.118	0.142	0.0144
	Magnesium (Mg)-Dissolved (mg/L)	183	10.5	796	1350	105
	Manganese (Mn)-Dissolved (mg/L)	0.000956	0.00694	70.8	141	4.61
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00150	0.000077	<0.0025 ^{DLA}	<0.0050 ^{DLA}	0.00011
	Nickel (Ni)-Dissolved (mg/L)	0.00161	<0.00050	0.651	1.72	0.0350
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.10 ^{DLA}	<0.25 ^{DLA}	0.173
	Potassium (K)-Dissolved (mg/L)	3.80	0.28	8.84	16.6	3.86
	Selenium (Se)-Dissolved (mg/L)	0.00054	<0.00010	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Silicon (Si)-Dissolved (mg/L)	4.54	8.96	12.9	19.2	8.63
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.00050 ^{DLA}	<0.0010 ^{DLA}	<0.000020 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	9.30	16.8	47.5	56.3	28.9

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-56 Water 13-SEP-14 08:27 V37	L1518297-57 Water 13-SEP-14 12:13 SRK05-ETA-BR1	L1518297-58 Water 13-SEP-14 10:40 P09-LCD6	L1518297-59 Water 13-SEP-14 09:32 P09-LCD1	L1518297-60 Water 14-SEP-14 12:40 MW14-15
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.702	4.30	0.840	0.873	0.647
	Sulfur (S)-Total (mg/L)	96.6	3150	121	89.3	315
	Thallium (Tl)-Total (mg/L)	0.000021	<0.0010 ^{DLA}	<0.000010	0.000018	0.000075
	Tin (Sn)-Total (mg/L)	0.00021	<0.010 ^{DLA}	<0.00010	<0.00010	0.00100
	Titanium (Ti)-Total (mg/L)	0.045	<1.0 ^{DLA}	0.026	<0.010	0.158
	Uranium (U)-Total (mg/L)	0.00335	0.0067	0.00362	0.00777	0.000582
	Vanadium (V)-Total (mg/L)	0.0052	<0.10 ^{DLA}	<0.0010	<0.0010	0.0117
	Zinc (Zn)-Total (mg/L)	0.0282	813	0.0066	0.0087	16.6
	Zirconium (Zr)-Total (mg/L)	0.00089	<0.080 ^{DLA}	<0.00080	<0.00080	<0.0016 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0016	2.13	<0.0010	<0.0010	0.0081
	Antimony (Sb)-Dissolved (mg/L)	0.00010	<0.010 ^{DLA}	<0.00010	0.00016	<0.00020 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00139	0.013	0.123	0.104	<0.00020 ^{DLA}
	Barium (Ba)-Dissolved (mg/L)	0.0628	0.0120	0.0455	0.0403	0.0282
	Beryllium (Be)-Dissolved (mg/L)	<0.00010	<0.010 ^{DLA}	<0.00010	<0.00010	<0.00020 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.050 ^{DLA}	<0.00050	<0.00050	<0.0010 ^{DLA}
	Boron (B)-Dissolved (mg/L)	0.036	<1.0 ^{DLA}	0.011	0.013	<0.020 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	<0.000010	0.0816	0.000020	0.000039	0.00195
	Calcium (Ca)-Dissolved (mg/L)	96.2	405	161	144	140
	Chromium (Cr)-Dissolved (mg/L)	<0.00010	<0.010 ^{DLA}	<0.00010	<0.00010	<0.00020 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	0.00040	2.44	0.00120	0.00053	0.00109
	Copper (Cu)-Dissolved (mg/L)	<0.00020	<0.020 ^{DLA}	<0.00020	<0.00020	0.00152
	Iron (Fe)-Dissolved (mg/L)	0.091	1250	8.19	4.75	0.014
	Lead (Pb)-Dissolved (mg/L)	<0.000050	0.0797	0.00851	0.0250	<0.00010 ^{DLA}
	Lithium (Li)-Dissolved (mg/L)	0.0279	0.100	0.00806	0.0100	0.0460
	Magnesium (Mg)-Dissolved (mg/L)	115	1100	50.3	43.0	158
	Manganese (Mn)-Dissolved (mg/L)	0.129	153	0.576	0.666	0.293
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010 ^{DLA}	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.0219	<0.0050 ^{DLA}	0.00227	0.00489	0.00047
	Nickel (Ni)-Dissolved (mg/L)	0.00127	1.99	0.00125	0.00071	0.109
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.25 ^{DLA}	0.061	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	5.68	13.4	2.52	2.93	2.58
	Selenium (Se)-Dissolved (mg/L)	<0.00010	<0.010 ^{DLA}	<0.00010	<0.00010	0.00037
	Silicon (Si)-Dissolved (mg/L)	3.31	17.6	7.59	7.39	8.99
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.0010 ^{DLA}	<0.000010	<0.000010	<0.000020 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	22.2	57.7	6.73	15.2	9.87

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-61 Water 14-SEP-14 18:00 PW14-01	L1518297-62 Water 14-SEP-14 15:08 PW14-07	L1518297-63 Water 14-SEP-14 12:21 PW14-06	L1518297-64 Water 14-SEP-14 10:17 MW14-03	L1518297-65 Water 14-SEP-14 10:17 DUP12
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.347	0.491	2.34	0.647	0.629
	Sulfur (S)-Total (mg/L)	23.6	80.8	8670	24.0	24.2
	Thallium (Tl)-Total (mg/L)	0.000011	<0.000010	0.0200	0.000016	0.000014
	Tin (Sn)-Total (mg/L)	<0.00010	<0.00010	<0.050 ^{DLA}	0.00013	0.00045
	Titanium (Ti)-Total (mg/L)	<0.010	<0.010	<5.0 ^{DLA}	0.028	0.023
	Uranium (U)-Total (mg/L)	0.00151	0.00105	0.305	0.0170	0.0164
	Vanadium (V)-Total (mg/L)	<0.0010	<0.0010	<0.50 ^{DLA}	0.0023	0.0021
	Zinc (Zn)-Total (mg/L)	0.661	1.16	2720	0.131	0.133
	Zirconium (Zr)-Total (mg/L)	<0.00080	<0.00080	<0.40 ^{DLA}	0.00151	0.00145
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0283	0.0871	86.3	0.0027	0.0025
	Antimony (Sb)-Dissolved (mg/L)	<0.00010	<0.00010	<0.050 ^{DLA}	0.00023	0.00021
	Arsenic (As)-Dissolved (mg/L)	0.00059	0.00273	<0.050 ^{DLA}	0.00880	0.00890
	Barium (Ba)-Dissolved (mg/L)	0.0700	0.0607	0.030	0.142	0.137
	Beryllium (Be)-Dissolved (mg/L)	0.00023	0.00073	<0.050 ^{DLA}	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.00050	<0.00050	<0.25 ^{DLA}	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.010	<0.010	<5.0 ^{DLA}	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.000060	0.000105	2.22	<0.000010	<0.000010
	Calcium (Ca)-Dissolved (mg/L)	75.4	98.4	462	128	128
	Chromium (Cr)-Dissolved (mg/L)	0.00016	0.00036	<0.050 ^{DLA}	0.00029	0.00029
	Cobalt (Co)-Dissolved (mg/L)	0.00636	0.00545	6.73	0.00111	0.00111
	Copper (Cu)-Dissolved (mg/L)	0.00077	0.00026	<0.10 ^{DLA}	<0.00020	0.00023
	Iron (Fe)-Dissolved (mg/L)	14.0	23.3	992	8.61	8.56
	Lead (Pb)-Dissolved (mg/L)	0.000128	0.000757	1.91	<0.000050	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.0155	0.0459	0.84	0.0374	0.0375
	Magnesium (Mg)-Dissolved (mg/L)	17.7	38.8	4070	34.8	35.0
	Manganese (Mn)-Dissolved (mg/L)	2.66	1.20	519	0.865	0.883
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010 ^{DLA}	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.000101	0.000188	<0.025	0.00400	0.00383
	Nickel (Ni)-Dissolved (mg/L)	0.00959	0.0159	10.9	0.00336	0.00333
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.50 ^{DLA}	0.057	0.071
	Potassium (K)-Dissolved (mg/L)	2.17	3.42	11.9	7.09	7.03
	Selenium (Se)-Dissolved (mg/L)	<0.00010	<0.00010	<0.050 ^{DLA}	<0.00010	<0.00010
	Silicon (Si)-Dissolved (mg/L)	9.59	12.6	14.9	8.80	8.89
	Silver (Ag)-Dissolved (mg/L)	<0.000010	<0.000010	<0.0050 ^{DLA}	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	5.25	9.45	36	7.17	7.26

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-66 Water 14-SEP-14 15:13 SRK08-P14	L1518297-67 Water 14-SEP-14 14:00 SRK08-P15	L1518297-68 Water 14-SEP-14 P09-GS1A	L1518297-69 Water 14-SEP-14 10:26 P09-GS1B	L1518297-70 Water 15-SEP-14 13:22 P03-03-9
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	1.85	1.11	0.659	1.76	0.887
	Sulfur (S)-Total (mg/L)	369	345	170	258	15300
	Thallium (Tl)-Total (mg/L)	<0.000020 ^{DLA}	<0.000020 ^{DLA}	0.00573	0.000056	<0.0020 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010	<0.020 ^{DLA}
	Titanium (Ti)-Total (mg/L)	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010	<0.010	<2.0 ^{DLA}
	Uranium (U)-Total (mg/L)	0.00801	0.0240	0.0175	0.00213	<0.0020 ^{DLA}
	Vanadium (V)-Total (mg/L)	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010	<0.0010	<0.20 ^{DLA}
	Zinc (Zn)-Total (mg/L)	0.0100	<0.0060 ^{DLA}	4.75	0.205	1110 ^{DLA}
	Zirconium (Zr)-Total (mg/L)	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080	<0.00080	<0.16 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.0020 ^{DLA}	0.0011	0.0016	<0.20 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	0.00020	0.00023	0.0156	0.00042	<0.020 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00021	0.00024	0.123	1.70	<0.020 ^{DLA}
	Barium (Ba)-Dissolved (mg/L)	0.0557	0.0384	0.0126	0.0250	<0.010 ^{DLA}
	Beryllium (Be)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010	<0.020 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050	<0.00050	<0.10 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.020	<0.020 ^{DLA}	<0.010	0.013	<2.0 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.000049	0.000091	0.00173	0.000041	<0.0020 ^{DLA}
	Calcium (Ca)-Dissolved (mg/L)	381	350	175	239	453 ^{DLA}
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 ^{DLA}	0.00093 ^{DLA}	<0.00010	<0.00010	<0.020 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.0597	0.00250	<0.020 ^{DLA}
	Copper (Cu)-Dissolved (mg/L)	0.00365	0.00088	<0.00020	<0.00020	<0.040 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.010	1.03	4.63	23800 ^{DLA}
	Lead (Pb)-Dissolved (mg/L)	<0.00010 ^{DLA}	0.00017	0.0439	<0.000050	<0.010 ^{DLA}
	Lithium (Li)-Dissolved (mg/L)	0.0086	0.0114	0.00976	0.0126	0.20
	Magnesium (Mg)-Dissolved (mg/L)	100	136	73.2	91.8	661
	Manganese (Mn)-Dissolved (mg/L)	0.00021	0.00013	1.79	0.641	147
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010 ^{DLA}
	Molybdenum (Mo)-Dissolved (mg/L)	0.00086	0.00065	0.00197	0.00341	<0.010 ^{DLA}
	Nickel (Ni)-Dissolved (mg/L)	0.0012	0.0120	0.138	0.0128	<0.10 ^{DLA}
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	0.071	<2.5 ^{DLA}
	Potassium (K)-Dissolved (mg/L)	1.23	2.10	4.23	2.61	62.6 ^{DLA}
	Selenium (Se)-Dissolved (mg/L)	0.00100	0.00151	<0.00010	<0.00010	<0.020 ^{DLA}
	Silicon (Si)-Dissolved (mg/L)	5.90	5.75 ^{DLA}	2.12	7.45	8.3 ^{DLA}
	Silver (Ag)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010	<0.000010	<0.0020 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	5.29	5.18	9.96	16.9	280

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-71 Water 15-SEP-14 13:50 P03-03-4	L1518297-72 Water 15-SEP-14 14:36 P03-03-2	L1518297-73 Water 15-SEP-14 11:42 P03-05-4	L1518297-74 Water 15-SEP-14 10:45 P03-06-1	L1518297-75 Water 15-SEP-14 10:05 P03-06-2
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	0.657	0.511	0.847	2.19	1.96
	Sulfur (S)-Total (mg/L)	542	920	357	1340	1320
	Thallium (Tl)-Total (mg/L)	0.00012	<0.00020 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}	<0.000050 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.0010 ^{DLA}	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Titanium (Ti)-Total (mg/L)	<0.10 ^{DLA}	<0.20 ^{DLA}	<0.050 ^{DLA}	<0.50 ^{DLA}	0.88
	Uranium (U)-Total (mg/L)	0.00017	0.00161	0.00109	0.00286	0.00375
	Vanadium (V)-Total (mg/L)	<0.010 ^{DLA}	<0.020 ^{DLA}	<0.0050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}
	Zinc (Zn)-Total (mg/L)	17.1	121	0.136	31.8	35.7
	Zirconium (Zr)-Total (mg/L)	<0.0080 ^{DLA}	<0.016 ^{DLA}	<0.0040 ^{DLA}	<0.040 ^{DLA}	<0.040 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.067	2.71	<0.0050 ^{DLA}	2.81	1.67
	Antimony (Sb)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.0041	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Barium (Ba)-Dissolved (mg/L)	0.0376	0.0083	0.0289	0.0142	0.0122
	Beryllium (Be)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.0025 ^{DLA}	<0.025 ^{DLA}	<0.025 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.10 ^{DLA}	<0.20 ^{DLA}	<0.050 ^{DLA}	<0.50 ^{DLA}	<0.50 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.00994	0.00863	0.000684	0.0793	0.0588
	Calcium (Ca)-Dissolved (mg/L)	192	139	322	474	472
	Chromium (Cr)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	0.316	0.0887	0.0907	3.05	2.56
	Copper (Cu)-Dissolved (mg/L)	<0.0020 ^{DLA}	0.0198	<0.0010 ^{DLA}	<0.010 ^{DLA}	<0.010 ^{DLA}
	Iron (Fe)-Dissolved (mg/L)	441	1110	15.0	808	926
	Lead (Pb)-Dissolved (mg/L)	0.00075	0.0019	<0.00025 ^{DLA}	0.0129	0.0135
	Lithium (Li)-Dissolved (mg/L)	0.0566	0.021	0.0275	0.143	0.129
	Magnesium (Mg)-Dissolved (mg/L)	54.8	44.3	56.5	198	185
	Manganese (Mn)-Dissolved (mg/L)	50.7	12.5	45.9	214	188
	Mercury (Hg)-Dissolved (mg/L)	<0.000010 ^{DLA}	<0.000010 ^{DLA}	<0.000010	<0.000010 ^{DLA}	<0.000010 ^{DLA}
	Molybdenum (Mo)-Dissolved (mg/L)	<0.00050 ^{DLA}	<0.0010 ^{DLA}	0.00039	<0.0025	<0.0025
	Nickel (Ni)-Dissolved (mg/L)	0.350	0.142 ^{DLA}	0.0357	3.44 ^{DLA}	3.03 ^{DLA}
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.10 ^{DLA}	<0.050	<0.10 ^{DLA}	<0.10 ^{DLA}
	Potassium (K)-Dissolved (mg/L)	5.69	4.30	3.64	7.89	7.36
	Selenium (Se)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Silicon (Si)-Dissolved (mg/L)	17.6	19.8	11.5	38.4	33.2
	Silver (Ag)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.00020 ^{DLA}	<0.000050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	21.1	7.5	14.5	28.5	25.3

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID				
		Description				
		Sampled Date				
		Sampled Time				
		Client ID				
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	<0.00020				
	Sulfur (S)-Total (mg/L)	<0.50				
	Thallium (Tl)-Total (mg/L)	<0.000010				
	Tin (Sn)-Total (mg/L)	<0.00010				
	Titanium (Ti)-Total (mg/L)	<0.010				
	Uranium (U)-Total (mg/L)	<0.000010				
	Vanadium (V)-Total (mg/L)	<0.0010				
	Zinc (Zn)-Total (mg/L)	<0.0030				
	Zirconium (Zr)-Total (mg/L)	<0.00080				
Dissolved Metals	Dissolved Mercury Filtration Location					
	Dissolved Metals Filtration Location					
	Aluminum (Al)-Dissolved (mg/L)					
	Antimony (Sb)-Dissolved (mg/L)					
	Arsenic (As)-Dissolved (mg/L)					
	Barium (Ba)-Dissolved (mg/L)					
	Beryllium (Be)-Dissolved (mg/L)					
	Bismuth (Bi)-Dissolved (mg/L)					
	Boron (B)-Dissolved (mg/L)					
	Cadmium (Cd)-Dissolved (mg/L)					
	Calcium (Ca)-Dissolved (mg/L)					
	Chromium (Cr)-Dissolved (mg/L)					
	Cobalt (Co)-Dissolved (mg/L)					
	Copper (Cu)-Dissolved (mg/L)					
	Iron (Fe)-Dissolved (mg/L)					
	Lead (Pb)-Dissolved (mg/L)					
	Lithium (Li)-Dissolved (mg/L)					
	Magnesium (Mg)-Dissolved (mg/L)					
	Manganese (Mn)-Dissolved (mg/L)					
	Mercury (Hg)-Dissolved (mg/L)					
	Molybdenum (Mo)-Dissolved (mg/L)					
	Nickel (Ni)-Dissolved (mg/L)					
	Phosphorus (P)-Dissolved (mg/L)					
	Potassium (K)-Dissolved (mg/L)					
	Selenium (Se)-Dissolved (mg/L)					
	Silicon (Si)-Dissolved (mg/L)					
	Silver (Ag)-Dissolved (mg/L)					
	Sodium (Na)-Dissolved (mg/L)					

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-1 Water TRAVEL BLANK	L1518297-2 Water 12-SEP-14 DUP 8	L1518297-3 Water 15-SEP-14 09:33 P03-06-6	L1518297-4 Water 13-SEP-14 DUP 7	L1518297-5 Water 11-SEP-14 DUP 5
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)		0.334	0.12	7.00	1.63
	Sulfur (S)-Dissolved (mg/L)		58.2	8200 ^{DLA}	554 ^{DLA}	176
	Thallium (Tl)-Dissolved (mg/L)		0.000054	<0.0050 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Dissolved (mg/L)		<0.00010	<0.050 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Dissolved (mg/L)		<0.010	<5.0 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Dissolved (mg/L)		0.00111	0.0687 ^{DLA}	0.000649 ^{DLA}	0.0201
	Vanadium (V)-Dissolved (mg/L)		<0.0010	<0.50 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)		5.31	2640 ^{DLA}	14.7	0.0072
	Zirconium (Zr)-Dissolved (mg/L)		<0.00080	<0.40 ^{DLA}	0.0022	0.00144

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-6 Water 14-SEP-14 DUP 9	L1518297-7 Water 11-SEP-14 DUP 6	L1518297-8 Water 15-SEP-14 09:48 MW14-02S	L1518297-9 Water 15-SEP-14 11:06 MW14-02D	L1518297-10 Water 11-SEP-14 17:21 P96-8B
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	1.70	0.701	0.102	0.338	3.74
	Sulfur (S)-Dissolved (mg/L)	347 ^{DLA}	90.3	3.89	24.0	3150 ^{DLA}
	Thallium (Tl)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000010	<0.000010	<0.000010	<0.0020 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.00010	<0.00010	<0.020 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.010	<0.010	<0.010	<2.0 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.00714 ^{DLA}	0.00162	0.000845	0.000446	<0.0020 ^{DLA}
	Vanadium (V)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.0010	<0.0010	<0.0010	<0.20 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	0.0050 ^{DLA}	0.240	0.0117	0.765	936 ^{DLA}
	Zirconium (Zr)-Dissolved (mg/L)	<0.0016 ^{DLA}	<0.00080	<0.00080	<0.00080	<0.16 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-11 Water 11-SEP-14 16:46 P96-8A	L1518297-12 Water 11-SEP-14 15:34 SRK08-P9	L1518297-13 Water 11-SEP-14 14:35 SRK08-SBR2	L1518297-14 Water 11-SEP-14 13:18 SRK08-SBR3	L1518297-15 Water 11-SEP-14 12:18 SRK05-SP-1B
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	3.54	10.9	1.19	1.15	0.700
	Sulfur (S)-Dissolved (mg/L)	3070	458	821	578	91.2
	Thallium (Tl)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.000020 ^{DLA}	<0.00020 ^{DLA}	0.000072 ^{DLA}	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.00020 ^{DLA}	<0.0020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<2.0 ^{DLA}	<0.020 ^{DLA}	<0.20 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Dissolved (mg/L)	0.0217	0.00442	0.00202	0.0382	0.00161
	Vanadium (V)-Dissolved (mg/L)	<0.20 ^{DLA}	<0.0020 ^{DLA}	<0.020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	1050	0.0129	106	0.0692	0.244
	Zirconium (Zr)-Dissolved (mg/L)	<0.16 ^{DLA}	<0.0016 ^{DLA}	<0.016 ^{DLA}	<0.0016 ^{DLA}	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-16 Water 11-SEP-14 09:35 MW14-09	L1518297-17 Water 11-SEP-14 10:13 MW14-10	L1518297-18 Water 11-SEP-14 08:52 SRK05-SP-2	L1518297-19 Water 11-SEP-14 10:30 S1B	L1518297-20 Water 11-SEP-14 16:48 FB1
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.458	0.483	0.331	0.340	<0.00020
	Sulfur (S)-Dissolved (mg/L)	58.8	79.0	50.7	61.8	<0.50
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00701	0.0202	0.00131	0.00172	<0.000010
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	0.0727	<0.0010	0.194	0.0195	<0.0010
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-21 Water 11-SEP-14 14:25 P2001-2B	L1518297-22 Water 11-SEP-14 09:37 V34	L1518297-23 Water 11-SEP-14 10:46 V35	L1518297-24 Water 11-SEP-14 15:44 V36	L1518297-25 Water 11-SEP-14 12:10 P2001-3
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	2.29	1.66	0.981	2.07	0.637
	Sulfur (S)-Dissolved (mg/L)	469	176	444	615	42.3
	Thallium (Tl)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000010	0.000021 ^{DLA}	0.000084 ^{DLA}	0.000011
	Tin (Sn)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Dissolved (mg/L)	0.0726	0.0203	0.0727	0.0624	0.0121
	Vanadium (V)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	0.0043	0.0051	0.0062	0.0800	0.0052
	Zirconium (Zr)-Dissolved (mg/L)	<0.0016 ^{DLA}	0.00144	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-26 Water 12-SEP-14 15:49 SRK05-5C	L1518297-27 Water 12-SEP-14 14:39 BH05-9B-R	L1518297-28 Water 12-SEP-14 13:56 P96-9A	L1518297-29 Water 12-SEP-14 12:00 SRK05-07	L1518297-30 Water 12-SEP-14 09:29 P09-VC2
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.880	1.15	1.33	1.46	0.886
	Sulfur (S)-Dissolved (mg/L)	65.2	58.4	620	600	13.9
	Thallium (Tl)-Dissolved (mg/L)	0.000010	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00239	0.000925	0.0473	0.0341	0.00415
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	<0.0010	0.0010	0.0825	0.0043	0.0885
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-31 Water 12-SEP-14 10:40 P09-VC1	L1518297-32 Water 12-SEP-14 12:56 SRK05-8	L1518297-33 Water 12-SEP-14 14:59 BH14B	L1518297-34 Water 12-SEP-14 18:16 P96-6	L1518297-35 Water 12-SEP-14 15:04 BH13B
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.564	1.47	3.54	0.824	0.854
	Sulfur (S)-Dissolved (mg/L)	17.2	432	731	391	194
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000020 ^{DLA}	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00588	0.0274 ^{DLA}	0.200 ^{DLA}	0.0599 ^{DLA}	0.00179
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	<0.0010	<0.0020 ^{DLA}	1.17 ^{DLA}	0.377 ^{DLA}	0.0025
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-36 Water 12-SEP-14 16:00 BH14A	L1518297-37 Water 12-SEP-14 13:20 BH5	L1518297-38 Water 12-SEP-14 12:18 SRK08-P12A	L1518297-39 Water 12-SEP-14 11:45 SRK08-P12B	L1518297-40 Water 12-SEP-14 10:49 BH10A
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	3.52	0.387	1.21	0.878	0.328
	Sulfur (S)-Dissolved (mg/L)	877	42.6	52.8	34.6	30.2
	Thallium (Tl)-Dissolved (mg/L)	<0.000050 ^{DLA}	0.000069	0.000093	0.000048	0.000064
	Tin (Sn)-Dissolved (mg/L)	<0.00050 ^{DLA}	<0.00010	<0.00010	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.050 ^{DLA}	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)	0.149	0.000317	0.00219	0.00117	0.000106
	Vanadium (V)-Dissolved (mg/L)	<0.0050 ^{DLA}	<0.0010	<0.0010	<0.0010	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	23.3	2.88	1.07	0.262	0.648
	Zirconium (Zr)-Dissolved (mg/L)	<0.0040 ^{DLA}	<0.00080	0.00124	<0.00080	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-41 Water 12-SEP-14 09:59 BH10B	L1518297-42 Water 12-SEP-14 08:56 P05-04	L1518297-43 Water 12-SEP-14 08:21 BH6	L1518297-44 Water 13-SEP-14 10:10 MW14-13	L1518297-45 Water 13-SEP-14 10:10 DUP10
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.264	0.404	0.333	1.03	1.03
	Sulfur (S)-Dissolved (mg/L)	23.6	52.7	59.5	218	218
	Thallium (Tl)-Dissolved (mg/L)	0.000249	0.000012	0.000054	<0.000020 ^{DLA}	0.000014
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.00020 ^{DLA}	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.020 ^{DLA}	<0.010
	Uranium (U)-Dissolved (mg/L)	0.000065	0.00161	0.00111	0.00489 ^{DLA}	0.00494
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.0020	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	0.848	2.21	5.40	9.27	9.27
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	<0.0016 ^{DLA}	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-46 Water 13-SEP-14 09:33 MW14-16	L1518297-47 Water 13-SEP-14 13:34 MW14-12S	L1518297-48 Water 13-SEP-14 11:52 MW14-12D	L1518297-49 Water 13-SEP-14 08:30 BH8	L1518297-50 Water 13-SEP-14 18:20 P2001-2A
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.958	0.320	0.423	1.13	2.22
	Sulfur (S)-Dissolved (mg/L)	182	99.3	89.6	866	482
	Thallium (Tl)-Dissolved (mg/L)	0.000013	<0.000010	<0.000010	0.00587 ^{DLA}	<0.000020 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.00010	<0.0020 ^{DLA}	<0.00020 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.010	<0.20 ^{DLA}	<0.020 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.00958	0.000031	0.00163	0.00324 ^{DLA}	0.0733 ^{DLA}
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.0010	<0.020 ^{DLA}	<0.0020 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	4.40	2.39	2.21	153 ^{DLA}	0.0032 ^{DLA}
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.00080	<0.016 ^{DLA}	<0.0016 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-51 Water 13-SEP-14 17:55 SRK05-9	L1518297-52 Water 13-SEP-14 16:13 P09-ETA-1	L1518297-53 Water 13-SEP-14 15:07 P09-ETA-2	L1518297-54 Water 13-SEP-14 13:53 SRK04-3A	L1518297-55 Water 13-SEP-14 13:02 SRK05-ETA-BR2
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.901	0.497	3.76	3.68	7.09
	Sulfur (S)-Dissolved (mg/L)	345	10.7	1830	3180	565
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	<0.00050 ^{DLA}	<0.0010 ^{DLA}	<0.000020 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.0050 ^{DLA}	<0.010 ^{DLA}	<0.00020 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<0.50 ^{DLA}	<1.0 ^{DLA}	<0.020 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.0317	0.000069	0.00490	0.0090	0.000589
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.050 ^{DLA}	<0.10 ^{DLA}	<0.0020 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	0.0083	0.0034	271	726	14.4
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.040 ^{DLA}	<0.080 ^{DLA}	<0.0016 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-56 Water 13-SEP-14 08:27 V37	L1518297-57 Water 13-SEP-14 12:13 SRK05-ETA-BR1	L1518297-58 Water 13-SEP-14 10:40 P09-LCD6	L1518297-59 Water 13-SEP-14 09:32 P09-LCD1	L1518297-60 Water 14-SEP-14 12:40 MW14-15
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.686	4.32	0.833	0.851	0.656
	Sulfur (S)-Dissolved (mg/L)	95.0	3040	115	90.4	331
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.0010 ^{DLA}	<0.000010	0.000012	<0.000020 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.010 ^{DLA}	<0.00010	<0.00010	0.00025 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<1.0 ^{DLA}	<0.010	<0.010	<0.020 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.00312	0.0067 ^{DLA}	0.00368	0.00751	0.000206 ^{DLA}
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.10 ^{DLA}	<0.0010	<0.0010	<0.0020 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	0.0055	911 ^{DLA}	0.0022	0.0065	16.9 ^{DLA}
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.080 ^{DLA}	<0.00080	<0.00080	<0.0016 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-61 Water 14-SEP-14 18:00 PW14-01	L1518297-62 Water 14-SEP-14 15:08 PW14-07	L1518297-63 Water 14-SEP-14 12:21 PW14-06	L1518297-64 Water 14-SEP-14 10:17 MW14-03	L1518297-65 Water 14-SEP-14 10:17 DUP12
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.295	0.492	2.44	0.603	0.627
	Sulfur (S)-Dissolved (mg/L)	22.6	76.5	8360	22.8	22.8
	Thallium (Tl)-Dissolved (mg/L)	<0.000010	<0.000010	0.0205	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	<0.00010	<0.00010	<0.050 ^{DLA}	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.010	<0.010	<5.0 ^{DLA}	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)	0.00133	0.00119	0.327	0.0169	0.0166
	Vanadium (V)-Dissolved (mg/L)	<0.0010	<0.0010	<0.50 ^{DLA}	<0.0010	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	0.648	1.19	2890	0.0063	0.0057
	Zirconium (Zr)-Dissolved (mg/L)	<0.00080	<0.00080	<0.40 ^{DLA}	<0.00080	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-66 Water 14-SEP-14 15:13 SRK08-P14	L1518297-67 Water 14-SEP-14 14:00 SRK08-P15	L1518297-68 Water 14-SEP-14 P09-GS1A	L1518297-69 Water 14-SEP-14 10:26 P09-GS1B	L1518297-70 Water 15-SEP-14 13:22 P03-03-9
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	1.70	1.07	0.654	1.74	0.758
	Sulfur (S)-Dissolved (mg/L)	355	353	168	255	15400
	Thallium (Tl)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000020 ^{DLA}	0.00562	0.000055	<0.0020 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00010	<0.020 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010	<0.010	<2.0 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.00721	0.0235	0.0168	0.00207	<0.0020 ^{DLA}
	Vanadium (V)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010	<0.0010	<0.20 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	0.0052	0.0042	4.67	0.196	1070
	Zirconium (Zr)-Dissolved (mg/L)	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080	<0.00080	<0.16 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-71 Water 15-SEP-14 13:50 P03-03-4	L1518297-72 Water 15-SEP-14 14:36 P03-03-2	L1518297-73 Water 15-SEP-14 11:42 P03-05-4	L1518297-74 Water 15-SEP-14 10:45 P03-06-1	L1518297-75 Water 15-SEP-14 10:05 P03-06-2
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	0.626	0.495	0.805	2.05	1.87
	Sulfur (S)-Dissolved (mg/L)	532 ^{DLA}	898 ^{DLA}	370 ^{DLA}	1260 ^{DLA}	1310 ^{DLA}
	Thallium (Tl)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.00020 ^{DLA}	<0.000050 ^{DLA}	<0.00050 ^{DLA}	<0.00050 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0020 ^{DLA}	<0.00050 ^{DLA}	<0.0050 ^{DLA}	<0.0050 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.10 ^{DLA}	<0.20 ^{DLA}	<0.050 ^{DLA}	<0.50 ^{DLA}	<0.50 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.00016 ^{DLA}	0.00149 ^{DLA}	0.000977 ^{DLA}	0.00240 ^{DLA}	0.00153 ^{DLA}
	Vanadium (V)-Dissolved (mg/L)	<0.010 ^{DLA}	<0.020 ^{DLA}	<0.0050 ^{DLA}	<0.050 ^{DLA}	<0.050 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	16.8 ^{DLA}	122 ^{DLA}	0.127 ^{DLA}	30.3 ^{DLA}	35.0 ^{DLA}
	Zirconium (Zr)-Dissolved (mg/L)	<0.0080 ^{DLA}	<0.016 ^{DLA}	<0.0040 ^{DLA}	<0.040 ^{DLA}	<0.040 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1518297-76 Water				
Grouping						
Analyte						
WATER						
Dissolved Metals						
Strontium (Sr)-Dissolved (mg/L)						
Sulfur (S)-Dissolved (mg/L)						
Thallium (Tl)-Dissolved (mg/L)						
Tin (Sn)-Dissolved (mg/L)						
Titanium (Ti)-Dissolved (mg/L)						
Uranium (U)-Dissolved (mg/L)						
Vanadium (V)-Dissolved (mg/L)						
Zinc (Zn)-Dissolved (mg/L)						
Zirconium (Zr)-Dissolved (mg/L)						

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Sample Submission Listed:

Qualifier	Description
WSMT	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.
WSMD	Water sample(s) for dissolved mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Duplicate	Aluminum (Al)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Beryllium (Be)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Chromium (Cr)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Lead (Pb)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Silver (Ag)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Tin (Sn)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Titanium (Ti)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Zinc (Zn)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Beryllium (Be)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Bismuth (Bi)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2,

Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
			-20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Chromium (Cr)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Lead (Pb)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Titanium (Ti)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Vanadium (V)-Dissolved	DLA	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Duplicate	Cadmium (Cd)-Dissolved	DLM	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1518297-1, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1518297-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -71, -72, -73, -74, -75, -76
Matrix Spike	Sulfate (SO4)	MS-B	L1518297-22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -50, -51, -52, -53, -54, -55, -56, -

Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
			57, -58, -59, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -71, -72, -73, -74, -75, -76
Matrix Spike	Calcium (Ca)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Magnesium (Mg)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Silicon (Si)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Sulfur (S)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Arsenic (As)-Total	MS-B	L1518297-17, -18, -19, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35
Matrix Spike	Barium (Ba)-Total	MS-B	L1518297-17, -18, -19, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35
Matrix Spike	Manganese (Mn)-Total	MS-B	L1518297-17, -18, -19, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35
Matrix Spike	Sodium (Na)-Total	MS-B	L1518297-17, -18, -19, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35
Matrix Spike	Strontium (Sr)-Total	MS-B	L1518297-17, -18, -19, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35
Matrix Spike	Barium (Ba)-Total	MS-B	L1518297-45, -46, -47, -48, -49, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -60, -61, -62
Matrix Spike	Strontium (Sr)-Total	MS-B	L1518297-45, -46, -47, -48, -49, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -60, -61, -62
Matrix Spike	Barium (Ba)-Total	MS-B	L1518297-63, -64, -65, -66, -67, -68, -69, -70, -71, -72, -73, -74, -75, -76
Matrix Spike	Manganese (Mn)-Total	MS-B	L1518297-63, -64, -65, -66, -67, -68, -69, -70, -71, -72, -73, -74, -75, -76
Matrix Spike	Strontium (Sr)-Total	MS-B	L1518297-63, -64, -65, -66, -67, -68, -69, -70, -71, -72, -73, -74, -75, -76
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43,

Reference Information

	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	-44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9 L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Barium (Ba)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Manganese (Mn)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Sodium (Na)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1518297-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -2, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -3, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -4, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -5, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -6, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -7, -70, -71, -72, -73, -74, -75, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
DLM	Detection Limit Adjusted due to sample matrix effects.
DTC	Dissolved concentration exceeds total. Results were confirmed by re-analysis.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ACY-PCT-VA	Water	Acidity by Automatic Titration	APHA 2310 "Acidity"
This analysis is carried out using procedures adapted from APHA Method 2310 "Acidity". Acidity is determined by potentiometric titration to a specified endpoint.			
Samples of industrial wastes, acid mine drainage, or other solutions that contain appreciable amounts of hydrolyzable metal ions such as aluminum, iron, and manganese may require hot peroxide treatment to ensure oxidation and hydrolysis of reduced forms of polyvalent cations. Acidity results may be highly variable if this procedure is not followed. Results in this report for 'Acidity (as CaCO3)' have not been peroxide treated.			
ACY-PCT-VA	Water	Acidity by Automatic Titration	APHA 2310 Acidity
This analysis is carried out using procedures adapted from APHA Method 2310 "Acidity". Acidity is determined by potentiometric titration to a specified endpoint.			
Samples of industrial wastes, acid mine drainage, or other solutions that contain appreciable amounts of hydrolyzable metal ions such as aluminum, iron, and manganese may require hot peroxide treatment to ensure oxidation and hydrolysis of reduced forms of polyvalent cations. Acidity results may be highly variable if this procedure is not followed. Results in this report for 'Acidity (as CaCO3)' have not been peroxide treated.			
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 "Alkalinity"
This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			

Reference Information

ALK-PCT-VA	Water	Alkalinity by Auto. Titration	APHA 2320 Alkalinity
This analysis is carried out using procedures adapted from APHA Method 2320 "Alkalinity". Total alkalinity is determined by potentiometric titration to a pH 4.5 endpoint. Bicarbonate, carbonate and hydroxide alkalinity are calculated from phenolphthalein alkalinity and total alkalinity values.			
ANIONS-CL-IC-WR	Water	Chloride by Ion Chromatography	EPA 300.1
This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003.			
ANIONS-SO4-IC-WR	Water	Sulphate by Ion Chromatography	EPA 300.1
This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO ₃ equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry or atomic absorption spectrophotometry (EPA Method 245.7).			
HG-TOT-LOW-CVAFS-VA	Water	Total Mercury in Water by CVAFS(Low)	EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry or atomic absorption spectrophotometry (EPA Method 245.7).			
IONBALANCE-VA	Water	Ion Balance Calculation	APHA 1030E
Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.			
Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:			
Ion Balance (%) = [Cation Sum-Anion Sum] / [Cation Sum+Anion Sum]			
MET-D-CCMS-VA	Water	Dissolved Metals in Water by CRC ICPMS	APHA 3030 B&E / EPA SW-846 6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).			
MET-DIS-LOW-ICP-VA	Water	Dissolved Metals in Water by ICPOES	EPA 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			
MET-T-CCMS-VA	Water	Total Metals in Water by CRC ICPMS	APHA 3030 B&E / EPA SW-846 6020A
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).			
MET-TOT-LOW-ICP-VA	Water	Total Metals in Water by ICPOES	EPA 3005A/6010B
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).			

Reference Information

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

TSS-LOW-WR Water Total Suspended Solids by Grav. (1 mg/L) APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

ZR-D-MS-VA Water Dissolved Zr in Water by ICPMS EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

ZR-T-MS-VA Water Total Zr in Water by ICPMS EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
----------------------------	---------------------

WR	ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA
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VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA
----	---

Chain of Custody Numbers:

1	2	3	4	5
6	7			

Reference Information

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg ww - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

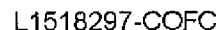
Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



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Report To			Report Format / Distribution			Select Service Level Below (Rush Turnaround Time (TAT) is not available for all tests)													
Company: Hemmera Environchem Inc.			Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)			R ☒ Regular (Standard TAT if received by 3 pm - business days)													
Contact: Natasha Sandys			Quality Control (QC) Report with Report ☒ Yes ☐ No			P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT													
Address: 230 - 2237 2nd Avenue Whitehorse, YT			☐ Criteria on Report - provide details below if box checked			E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT													
Phone: 867-456-4865			Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge													
			Email 1 or Fax nsandys@hemmera.com, rmartinka@hemmera.com			Specify Date Required for E2,E or P:													
			Email 2 chris@elr.ca																
Invoice To			Invoice Distribution			Analysis Request													
Same as Report To ☒ Yes ☐ No			Select Invoice Distribution: ☒ EMAIL ☒ MAIL ☐ FAX			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below													
Copy of Invoice with Report ☐ Yes ☒ No			Email 1 or Fax nsandys@hemmera.com																
Company: Hemmera Environchem Inc.			Email 2 chris@elr.ca																
Contact: Natasha Sandys																			
Project Information			Oil and Gas Required Fields (client use)																
ALS Quote #: Q45291			Approver ID:			Cost Center:													
Job #: 1343-005.02			GL Account:			Routing Code:													
PO / AFE:			Activity Code:																
LSD:			Location:																
ALS Lab Work Order # (lab use only)			ALS Contact:			Sampler: RM,GR,AN,AB													
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mm-yy)	Time (hh:mm)	Sample Type	acidity (to pH 8.3)	alkalinity	chloride	conductivity	pH	sulphate	suspended solids, total (TSS)	dissolved metals	total metals				Number of Containers	
	Travel Blank				Water	R	R	R	R	R	R	R	R	R					3
	Dup 8		12-Sep-14		Water	R	R	R	R	R	R	R	R	R					3
	P03-06-6		15-Sep-14	9:33	Water	R	R	R	R	R	R	R	R	R					3
	Dup 7		13-Sep-14		Water	R	R	R	R	R	R	R	R	R					3
	Dup 5		11-Sep-14		Water	R	R	R	R	R	R	R	R	R					3
	Dup 9		14-Sep-14		Water	R	R	R	R	R	R	R	R	R					3
	Dup 6		11-Sep-14		Water	R	R	R	R	R	R	R	R	R					3
	MW14-02S		15-Sep-14	9:48	Water	R	R	R	R	R	R	R	R	R					3
	MW14-02D		15-Sep-14	11:06	Water	R	R	R	R	R	R	R	R	R					3
	P96-8B		11-Sep-14	17:21	Water	R	R	R	R	R	R	R	R	R					3
	P96-8A		11-Sep-14	16:46	Water	R	R	R	R	R	R	R	R	R					3
	SRK08-P9		11-Sep-14	15:34	Water	R	R	R	R	R	R	R	R	R					3
Drinking Water (DW) Samples¹ (client use)			Special Instructions / Specify Criteria to add on report (client use)			SAMPLE CONDITION AS RECEIVED (lab use only)													
Are samples taken from a Regulated DW System? ☐ Yes ☒ No			- EDD must be in EQUIS format common to Faro Mine Remediation Project. Contact client if clarification is required. - See attached parameter sheet for required detection limits.			Frozen ☐ SIF Observations Yes ☐ No ☐													
Are samples for human drinking water use? ☐ Yes ☒ No						Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐													
						Cooling Initiated ☐													
						INITIAL COOLER TEMPERATURES °C						FINAL COOLER TEMPERATURES °C							
						2.6													
SHIPMENT RELEASE (client use)			INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)													
Released by: C. J. Smith			Received by: [Signature]			Received by: [Signature]													
Date: Sept 16/14			Date: Sept 16/14			Date: Sept 16/14													
Time: 10:00 AM			Time: 9:20 AM			Time: 9:20 AM													

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NA-FM-00254 v03 Front04 January 2014

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L1518297-COFC

COC Number: 1 -

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Report To				Report Format				Analysis Request															
Company: Hemmera Environchem Inc.				Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)				R ☒ Regular (Standard TAT if received by 3 pm - business days)															
Contact: Natasha Sandys				Quality Control (QC) Report with Report ☒ Yes ☐ No				P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT															
Address: 230 - 2237 2nd Avenue Whitehorse, YT				Criteria on Report - provide details below if box checked				E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT															
Phone: 867-456-4865				Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX				E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge															
				Email 1 or Fax nsandys@hemmera.com, rmartinka@hemmera.com				Specify Date Required for E2,E or P:															
				Email 2 chris@elr.ca																			
Invoice To				Invoice Distribution				Analysis Request															
Same as Report To ☒ Yes ☐ No				Select Invoice Distribution: ☒ EMAIL ☒ MAIL ☐ FAX				Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below															
Copy of Invoice with Report ☐ Yes ☒ No				Email 1 or Fax nsandys@hemmera.com																			
Company: Hemmera Environchem Inc.				Email 2 chris@elr.ca																			
Project Information				Oil and Gas Required Fields (client use)																			
ALS Quote #: Q45291				Approver ID:								Cost Center:											
Job #: 1343-005.02				GL Account:								Routing Code:											
PO / AFE:				Activity Code:																			
LSD:				Location:																			
ALS Lab Work Order # (lab use only)				ALS Contact:				Sampler: RM,GR,AN,AB															
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)			Date (dd-mm-yy)	Time (hh:mm)	Sample Type	acidity (to pH 8.3)	alkalinity	chloride	conductivity	pH	sulphate	suspended solids, total (TSS)	dissolved metals	total metals	Number of Containers							
	SRK08-SBR2			11-Sep-14	14:35	Water	R	R	R	R	R	R	R	R	R		3						
	SRK08-SBR3			11-Sep-14	13:18	Water	R	R	R	R	R	R	R	R	R		3						
	SRK05-SP-1B			11-Sep-14	12:18	Water	R	R	R	R	R	R	R	R	R		3						
	MW14-09			11-Sep-14	9:35	Water	R	R	R	R	R	R	R	R	R		3						
	MW14-10			11-Sep-14	10:13	Water	R	R	R	R	R	R	R	R	R		3						
	SRK05-SP-2			11-Sep-14	8:52	Water	R	R	R	R	R	R	R	R	R		3						
	S1B			11-Sep-14	10:30	Water	R	R	R	R	R	R	R	R	R		3						
	FB1			11-Sep-14	16:48	Water	R	R	R	R	R	R	R	R	R		3						
	P2001-2B			11-Sep-14	14:25	Water	R	R	R	R	R	R	R	R	R		3						
	V34			11-Sep-14	9:37	Water	R	R	R	R	R	R	R	R	R		3						
	V35			11-Sep-14	10:46	Water	R	R	R	R	R	R	R	R	R		3						
	V36			11-Sep-14	15:44	Water	R	R	R	R	R	R	R	R	R		3						
Drinking Water (DW) Samples¹ (client use)				Special Instructions / Specify Criteria to add on report (client Use)				SAMPLE CONDITION AS RECEIVED (lab use only)															
Are samples taken from a Regulated DW System? ☐ Yes ☒ No				- EDD must be in EQUIS format common to Faro Mine Remediation Project. Contact client if clarification is required. - See attached parameter sheet for required detection limits.				Frozen ☐ SIF Observations Yes ☐ No ☐															
Are samples for human drinking water use? ☐ Yes ☒ No								Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐															
								Cooling Initiated ☐															
								INITIAL COOLER TEMPERATURES °C															
								5.6															
								FINAL COOLER TEMPERATURES °C															
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)															
Released by:		Date:		Time:		Received by:		Date:		Time:		Received by:		Date:		Time:							
						<i>Joselyn Miley</i>		Sept 16 2014		9:21 AM													

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UAFM-0326e v05 From 04 January 2014

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L1518297-COFC

COC Number: 1 -

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Report To		Report Format		(Rush Turnaround Time (TAT) is not available for all tests)													
Company: Hemmera Environchem Inc.		Select Report Format: ☒ PDF ☒ EXCEL ☐ EDD (DIGITAL)		R ☒ Regular (Standard TAT if received by 3 pm - business days)													
Contact: Natasha Sandys		Quality Control (QC) Report with Report ☒ Yes ☐ No		P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT													
Address: 230 - 2237 2nd Avenue Whitehorse, YT		☐ Criteria on Report - provide details below if box checked		E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT													
Phone: 867-456-4865		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		E2 ☒ Same day or weekend emergency - contact ALS to confirm TAT and surcharge													
		Email 1 or Fax nsandys@hemmera.com, rmartinka@hemmera.com		Specify Date Required for E2,E or P:													
		Email 2 chris@elr.ca															
Invoice To		Invoice Distribution		Analysis Request													
Same as Report To ☒ Yes ☐ No		Select Invoice Distribution: ☒ EMAIL ☐ MAIL ☐ FAX		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below													
Copy of Invoice with Report ☐ Yes ☒ No		Email 1 or Fax nsandys@hemmera.com															
Company: Hemmera Environchem Inc.		Email 2 chris@elr.ca															
Project Information		Oil and Gas Required Fields (client use)															
ALS Quote #: Q45291		Approver ID:		Cost Center:													
Job #: 1343-005.02		GL Account:		Routing Code:													
PO / AFE:		Activity Code:															
LSD:		Location:															
ALS Lab Work Order # (lab use only)		ALS Contact:		Sampler: RM,GR,AN,AB													
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mm-yy)	Time (hh:mm)	Sample Type	acidity (to pH 8.3)	alkalinity	chloride	conductivity	pH	sulphate	suspended solids, total (TSS)	dissolved metals	total metals	Number of Containers			
P2001-3		11-Sep-14	12:10	Water	R	R	R	R	R	R	R	R	R		3		
SRK05-5C		12-Sep-14	15:49	Water	R	R	R	R	R	R	R	R	R		3		
BH05-9B-R		12-Sep-14	14:39	Water	R	R	R	R	R	R	R	R	R		3		
P96-9A		12-Sep-14	13:56	Water	R	R	R	R	R	R	R	R	R		3		
SRK05-07		12-Sep-14	12:00	Water	R	R	R	R	R	R	R	R	R		3		
P09-VC2		12-Sep-14	9:29	Water	R	R	R	R	R	R	R	R	R		3		
P09-VC1		12-Sep-14	10:40	Water	R	R	R	R	R	R	R	R	R		3		
SRK05-8		12-Sep-14	12:56	Water	R	R	R	R	R	R	R	R	R		3		
BH14B		12-Sep-14	14:59	Water	R	R	R	R	R	R	R	R	R		3		
P96-6		12-Sep-14	18:16	Water	R	R	R	R	R	R	R	R	R		3		
BH13B		12-Sep-14	15:04	Water	R	R	R	R	R	R	R	R	R		3		
BH14A		12-Sep-14	16:00	Water	R	R	R	R	R	R	R	R	R		3		
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report (client use)		SAMPLE CONDITION AS RECEIVED (lab use only)													
Are samples taken from a Regulated DW System? ☐ Yes ☒ No		- EDD must be in EQUIS format common to Faro Mine Remediation Project. Contact client if clarification is required. - See attached parameter sheet for required detection limits.		Frozen ☐ SIF Observations Yes ☐ No ☐													
Are samples for human drinking water use? ☐ Yes ☒ No				Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐													
				Cooling Initiated ☐													
				INITIAL COOLER TEMPERATURES °C: 8.1 FINAL COOLER TEMPERATURES °C:													
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)		FINAL SHIPMENT RECEPTION (lab use only)													
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:						Date:					
			<i>Joey Mcay</i>	Sept 16 2014	9:21 AM												

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NA-FM-0126a v08 Form 04 January 2014

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COC Number: 1 -

Page 4 of 7

Report To		Report Format / Distribution					Analysis Request										
Company: Hemmera Environchem Inc.		Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)					R ☒ Regular (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT										
Contact: Natasha Sandys		Quality Control (QC) Report with Report ☒ Yes ☐ No					P ☒ Priority (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT										
Address: 230 - 2237 2nd Avenue Whitehorse, YT		☐ Criteria on Report - provide details below if box checked					E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT										
Phone: 867-456-4865		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX					E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge										
		Email 1 or Fax nsandys@hemmera.com, martinka@hemmera.com					Specify Date Required for E2, E or P:										
		Email 2 chris@elr.ca															
Invoice To		Invoice Distribution					Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below										
Same as Report To ☒ Yes ☐ No		Select Invoice Distribution: ☒ EMAIL ☒ MAIL ☐ FAX															
Copy of Invoice with Report ☐ Yes ☒ No		Email 1 or Fax nsandys@hemmera.com															
Company: Hemmera Environchem Inc.		Email 2 chris@elr.ca															
Contact: Natasha Sandys																	
Project Information		Oil and Gas Required Fields (client use)															
ALS Quote #: Q45291		Approver ID:					Cost Center:										
Job #: 1343-005.02		GL Account:					Routing Code:										
PO / AFE:		Activity Code:															
LSD:		Location:															
ALS Lab Work Order # (lab use only)		ALS Contact:					Sampler: RM,GR,AN,AB										
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	acidity (to pH 8.3)	alkalinity	chloride	conductivity	pH	sulphate	suspended solids, total (TSS)	dissolved metals	total metals	Number of Containers			
BH5		12-Sep-14	13:20	Water	R	R	R	R	R	R	R	R	R		3		
SRK08-P12A		12-Sep-14	12:18	Water	R	R	R	R	R	R	R	R	R		3		
SRK08-P12B		12-Sep-14	11:45	Water	R	R	R	R	R	R	R	R	R		3		
BH10A		12-Sep-14	10:49	Water	R	R	R	R	R	R	R	R	R		3		
BH10B		12-Sep-14	9:59	Water	R	R	R	R	R	R	R	R	R		3		
P05-04		12-Sep-14	8:56	Water	R	R	R	R	R	R	R	R	R		3		
BH6		12-Sep-14	8:21	Water	R	R	R	R	R	R	R	R	R		3		
MW14-13		13-Sep-14	10:10	Water	R	R	R	R	R	R	R	R	R		3		
Dup10		13-Sep-14	10:10	Water	R	R	R	R	R	R	R	R	R		3		
MW14-16		13-Sep-14	9:33	Water	R	R	R	R	R	R	R	R	R		3		
MW14-12S		13-Sep-14	13:34	Water	R	R	R	R	R	R	R	R	R		3		
MW14-12D		13-Sep-14	11:52	Water	R	R	R	R	R	R	R	R	R		3		
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report (client Use)					SAMPLE CONDITION AS RECEIVED (lab use only)										
Are samples taken from a Regulated DW System? ☐ Yes ☒ No		- EDD must be in EQuIS format common to Faro Mine Remediation Project. Contact client if clarification is required. - See attached parameter sheet for required detection limits.					Frozen ☐ SIF Observations Yes ☐ No ☐										
Are samples for human drinking water use? ☐ Yes ☒ No							Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐										
							Cooling Initiated ☐										
							INITIAL COOLER TEMPERATURES °C					FINAL COOLER TEMPERATURES °C					
							7.3										
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)					FINAL SHIPMENT RECEPTION (lab use only)										
Released by:		Date:		Time:		Received by:		Date:		Time:		Received by:		Date:		Time:	
						Barry Mory		Sept 16 2014		9:22 AM							

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NA-FM-0026a-03 Rev04 January 2014

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Page 5 of 7



L1518297-COFC

Report To				Report Format / Distr				Analysis Request													
Company: Hemmera Environchem Inc.				Select Report Format: ☒ PDF ☒ EXL				.. Regular (Standard TAT if received by 3 pm - business days) P ☒ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge													
Contact: Natasha Sandys				Quality Control (QC) Report with Report ☒ Yes ☐ No																	
Address: 230 - 2237 2nd Avenue Whitehorse, YT				Criteria on Report - provide details below if box checked																	
Phone: 867-456-4865				Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX				Specify Date Required for E2,E or P:													
Email 1 or Fax nsandys@hemmera.com, rmartinka@hemmera.com				Email 1 or Fax nsandys@hemmera.com																	
Email 2 chris@elr.ca				Email 2 chris@elr.ca																	
Invoice To				Invoice Distribution				Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below													
Same as Report To ☒ Yes ☐ No				Select Invoice Distribution: ☒ EMAIL ☒ MAIL ☐ FAX																	
Copy of Invoice with Report ☐ Yes ☒ No				Email 1 or Fax nsandys@hemmera.com																	
Company: Hemmera Environchem Inc.				Email 2 chris@elr.ca																	
Contact: Natasha Sandys																					
Project Information				Oil and Gas Required Fields (client use)				Number of Containers acidity (to pH 8.3) alkalinity chloride conductivity pH sulphate suspended solids, total (TSS) dissolved metals total metals													
ALS Quote #: Q45291				Approver ID: Cost Center:																	
Job #: 1343-005.02				GL Account: Routing Code:																	
PO / AFE:				Activity Code:																	
LSD:				Location:																	
ALS Lab Work Order # (lab use only)				ALS Contact:				Sampler: RM,GR,AN,AB													
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)			Date (dd-mm-yy)	Time (hh:mm)	Sample Type															
BH8				13-Sep-14	8:30	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
P2001-2A				13-Sep-14	18:20	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
SRK05-9				13-Sep-14	17:55	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
P09-ETA-1				13-Sep-14	16:13	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
P09-ETA-2				13-Sep-14	16:07	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
SRK04-3A				13-Sep-14	13:53	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
SRK05-ETA-BR2				13-Sep-14	13:02	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
V37				13-Sep-14	8:27	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
SRK05-ETA-BR1				13-Sep-14	12:13	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
P09-LCD6				13-Sep-14	10:40	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
P09-LCD1				13-Sep-14	9:32	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
MW14-15				14-Sep-14	12:40	Water	R	R	R	R	R	R	R	R	R	R	R	R	3		
Drinking Water (DW) Samples¹ (client use)				Special Instructions / Specify Criteria to add on report (client Use)				SAMPLE CONDITION AS RECEIVED (lab use only)													
Are samples taken from a Regulated DW System?				- EDD must be in EQulS format common to Faro Mine Remediation Project. Contact client if clarification is required.				Frozen ☐ SIF Observations Yes ☐ No ☐ Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐ Cooling Initiated ☐													
Are samples for human drinking water use?				- See attached parameter sheet for required detection limits.				INITIAL COOLER TEMPERATURES °C: 2.5 FINAL COOLER TEMPERATURES °C:													
SHIPMENT RELEASE (client use)				INITIAL SHIPMENT RECEPTION (lab use only)				FINAL SHIPMENT RECEPTION (lab use only)													
Released by:				Received by:				Received by:													
Date:				Date:				Date:													
Time:				Time:				Time:													

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L1518297-COFC

COC Number: 1 -

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Report To		Report Format / Distribution			Select Service Level below (Rush Turnaround Time (TAT) is not available for all tests)												
Company: Hemmera Environchem Inc.		Select Report Format: ☒ PDF ☒ EXCEL ☒ EDD (DIGITAL)			R ☐ Regular (Standard TAT if received by 3 pm - business days)												
Contact: Natasha Sandys		Quality Control (QC) Report with Report ☒ Yes ☐ No			P ☐ Priority (2-4 bus. days if received by 3pm) 50% surcharge - contact ALS to confirm TAT												
Address: 230 - 2237 2nd Avenue Whitehorse, YT		☐ Criteria on Report - provide details below if box checked			E ☐ Emergency (1-2 bus. days if received by 3pm) 100% surcharge - contact ALS to confirm TAT												
Phone: 867-456-4865		Select Distribution: ☒ EMAIL ☐ MAIL ☐ FAX			E2 ☐ Same day or weekend emergency - contact ALS to confirm TAT and surcharge												
		Email 1 or Fax nsandys@hemmera.com, rmartinka@hemmera.com			Specify Date Required for E2, E or P:												
		Email 2 chris@elr.ca															
Invoice To		Invoice Distribution			Analysis Request												
Same as Report To ☒ Yes ☐ No		Select Invoice Distribution: ☒ EMAIL ☒ MAIL ☐ FAX			Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below												
Copy of Invoice with Report ☐ Yes ☒ No		Email 1 or Fax nsandys@hemmera.com			F/P P												
Company: Hemmera Environchem Inc.		Email 2 chris@elr.ca															
Contact: Natasha Sandys																	
Project Information		Oil and Gas Required Fields (client use)			acidity (to pH 8.3) alkalinity chloride conductivity pH sulphate suspended solids, total (TSS) dissolved metals total metals Number of Containers												
ALS Quote #: Q45291		Approver ID:															
Job #: 1343-005.02		GL Account:															
PO / AFE:		Routing Code:															
LSD:		Activity Code:															
ALS Lab Work Order # (lab use only)		ALS Contact:			Sampler:			RM, GR, AN, AB									
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type													
PW14-01		14-Sep-14	18:00	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
PW14-07		14-Sep-14	15:08	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
PW14-06		14-Sep-14	12:21	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
MW14-03		14-Sep-14	10:17	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
Dup12		14-Sep-14	10:17	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
SRK08-P14		14-Sep-14	15:13	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
SRK08-P15		14-Sep-14	14:00	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
P09-GSIA		14-Sep-14	0:00	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
P09-GSIB		14-Sep-14	10:26	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
P03-03-9		15-Sep-14	13:22	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
P03-03-4		15-Sep-14	13:50	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
P03-03-2		15-Sep-14	14:36	Water	R	R	R	R	R	R	R	R	R	R	R	R	3
Drinking Water (DW) Samples¹ (client use)		Special Instructions / Specify Criteria to add on report (client use)			SAMPLE CONDITION AS RECEIVED (lab use only)												
Are samples taken from a Regulated DW System? ☐ Yes ☒ No		- EDD must be in EQuIS format common to Faro Mine Remediation Project. Contact client if clarification is required. - See attached parameter sheet for required detection limits.			Frozen ☐ SIF Observations Yes ☐ No ☐												
Are samples for human drinking water use? ☐ Yes ☒ No					Ice packs Yes ☐ No ☐ Custody seal intact Yes ☐ No ☐												
					Cooling Initiated ☐												
					INITIAL COOLER TEMPERATURES °C: 25 FINAL COOLER TEMPERATURES °C												
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (lab use only)			FINAL SHIPMENT RECEPTION (lab use only)												
Released by:	Date:	Time:	Received by:	Date:	Time:	Received by:											
			<i>Jose M. May</i>	Sept 16 2014	9:23 AM												

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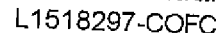
NA-FM-0025a V09 From 04 January 2014

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HEMMERA ENVIROCHEM INC.
ATTN: Natasha Sandys
Suite 230 - 2237 2nd Avenue
Whitehorse Yukon Y1A 0K7

Date Received: 17-SEP-14
Report Date: 29-OCT-14 15:28 (MT)
Version: FINAL REV. 2

Client Phone: 867-456-4865

Certificate of Analysis

Lab Work Order #: L1519343
Project P.O. #: NOT SUBMITTED
Job Reference: 1343-005.02
C of C Numbers: 1-17092014
Legal Site Desc:

Comments:

29-OCT-2014 This report replaces the previous version and contains the COCs.

Brent Mack, B.Sc.
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1519343-1 Water 16-SEP-14 08:36 MW14-14	L1519343-2 Water 16-SEP-14 12:10 P03-01-2	L1519343-3 Water 16-SEP-14 10:55 P03-01-8	L1519343-4 Water 16-SEP-14 14:55 TH86-2	L1519343-5 Water 16-SEP-14 13:47 TH86-5
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	2800	415	34400	245	827
	Hardness (as CaCO3) (mg/L)	1780	209	5340	134	447
	pH (pH)	7.32	7.89	3.16	7.65	7.12
	Total Suspended Solids (mg/L)	104	5.8	150	5.6	68.7
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	66.5	5.5	49800	4.1	47.3
	Alkalinity, Total (as CaCO3) (mg/L)	84.7	221	<2.0	114	473
	Chloride (Cl) (mg/L)	<10 ^{DLA}	<0.50	29	<0.50	<2.5 ^{DLA}
	Sulfate (SO4) (mg/L)	2070	19.4	56500	20.2	11.1
	Anion Sum (meq/L)	44.7	4.82	1180	2.70	9.69
	Cation Sum (meq/L)	36.6	4.71	1750	2.81	10.3
	Cation - Anion Balance (%)	-10.1	-1.1	19.7	2.0	3.3
				^{DLA}		
Total Metals	Aluminum (Al)-Total (mg/L)	0.269	<0.0030	<0.60 ^{DLA}	0.0124	0.240
	Antimony (Sb)-Total (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.020 ^{DLA}	0.00011	0.00688
	Arsenic (As)-Total (mg/L)	0.00044	0.0140	<0.020 ^{DLA}	0.00089	0.112
	Barium (Ba)-Total (mg/L)	0.0567	0.0949	<0.010 ^{DLA}	0.0681	0.187
	Beryllium (Be)-Total (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.020 ^{DLA}	<0.00010	<0.00010
	Bismuth (Bi)-Total (mg/L)	<0.0010 ^{DLA}	<0.00050	<0.10 ^{DLA}	<0.00050	<0.00050
	Boron (B)-Total (mg/L)	<0.020 ^{DLA}	<0.010	<2.0 ^{DLA}	<0.010	0.010
	Cadmium (Cd)-Total (mg/L)	0.00105	<0.000010	<0.0020 ^{DLA}	0.000029	0.000053
	Calcium (Ca)-Total (mg/L)	271	62.7	453 ^{DLA}	40.6	130
	Chromium (Cr)-Total (mg/L)	0.00081	<0.00010	<0.020 ^{DLA}	0.00152	0.206
	Cobalt (Co)-Total (mg/L)	0.0206	0.00788	<0.020 ^{DLA}	0.00013	0.0110
	Copper (Cu)-Total (mg/L)	0.0015	<0.00050	<0.10 ^{DLA}	0.00507	0.503
	Iron (Fe)-Total (mg/L)	0.387	3.07	29800 ^{DLA}	3.27	35.7
	Lead (Pb)-Total (mg/L)	0.00093	<0.000050	<0.010 ^{DLA}	0.000125	0.00211
	Lithium (Li)-Total (mg/L)	0.0069	0.0156	0.53	0.00269	0.0550
	Magnesium (Mg)-Total (mg/L)	259	13.1	1020	7.57	24.6
	Manganese (Mn)-Total (mg/L)	5.54	0.127	245	0.0151	0.602
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00139	0.00339	0.016 ^{DLA}	0.00147	0.0742
	Nickel (Ni)-Total (mg/L)	0.0562	<0.00050	<0.10 ^{DLA}	0.00218	0.128
	Phosphorus (P)-Total (mg/L)	<0.050	<0.050	<2.5 ^{DLA}	<0.050	<0.050
	Potassium (K)-Total (mg/L)	3.16	2.33	120 ^{DLA}	1.27	2.56
	Selenium (Se)-Total (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.020 ^{DLA}	0.00033	<0.00010
	Silicon (Si)-Total (mg/L)	9.73	7.81	<2.5 ^{DLA}	4.40	10.1
	Silver (Ag)-Total (mg/L)	0.000023	<0.000010	<0.0020 ^{DLA}	<0.000010	0.000240
	Sodium (Na)-Total (mg/L)	8.15	7.32	231	2.34	21.9

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1519343-6 Water 15-SEP-14 17:30 MW14-04D	L1519343-7 Water 15-SEP-14 15:42 MW14-05	L1519343-8 Water 15-SEP-14 18:32 P09-LCD4	L1519343-9 Water 15-SEP-14 15:42 DUP11	L1519343-10 Water 17-SEP-14 08:30 MW14-04S
Grouping	Analyte					
WATER						
Physical Tests	Conductivity (uS/cm)	2810	3660	859	3660	4270
	Hardness (as CaCO3) (mg/L)	2050	2830	333	2690	3110
	pH (pH)	7.37	7.18	7.94	7.16	7.43
	Total Suspended Solids (mg/L)	29.2	27.6	126	26.4	22.8
Anions and Nutrients	Acidity (as CaCO3) (mg/L)	59.3	63.8	7.7	62.8	92.9
	Alkalinity, Total (as CaCO3) (mg/L)	752	551	358	568	998
	Chloride (Cl) (mg/L)	<10 ^{DLA}	18	<2.5 ^{DLA}	17	14
	Sulfate (SO4) (mg/L)	1440	2390	78.9	2260	2710
	Anion Sum (meq/L)	45.0	61.4	8.79	58.9	76.8
	Cation Sum (meq/L)	42.0	57.8	9.92	54.9	63.1
	Cation - Anion Balance (%)	-3.4	-3.0	6.0	-3.5	-9.8
Total Metals	Aluminum (Al)-Total (mg/L)	0.974	0.468	1.03	0.480	0.0270
	Antimony (Sb)-Total (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00091	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Arsenic (As)-Total (mg/L)	0.00109	0.00279	0.00728	0.00300	0.00035
	Barium (Ba)-Total (mg/L)	0.0416	0.0657	0.109	0.0669	0.0313
	Beryllium (Be)-Total (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Bismuth (Bi)-Total (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Total (mg/L)	<0.020 ^{DLA}	<0.020 ^{DLA}	0.016	<0.020 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Total (mg/L)	0.000136	0.000070	0.000162	0.000071	0.000211
	Calcium (Ca)-Total (mg/L)	340	266	89.4	273	590 ^{DLA}
	Chromium (Cr)-Total (mg/L)	0.00623	0.00350	0.00321	0.00369	<0.00020
	Cobalt (Co)-Total (mg/L)	0.00244	0.00352	0.00140	0.00365	0.00124
	Copper (Cu)-Total (mg/L)	0.0027	0.0014	0.00695	0.0012	0.0022
	Iron (Fe)-Total (mg/L)	5.19	9.74	1.48	9.70	0.053
	Lead (Pb)-Total (mg/L)	0.00102	0.00614	0.0184	0.00682	0.00035
	Lithium (Li)-Total (mg/L)	0.0589	0.0655	0.00789	0.0673	0.0812
	Magnesium (Mg)-Total (mg/L)	258	513	25.0	502	478
	Manganese (Mn)-Total (mg/L)	0.603	1.16	0.470	1.22	0.747
	Mercury (Hg)-Total (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Total (mg/L)	0.00156	0.00071	0.00517	0.00075	0.00127
	Nickel (Ni)-Total (mg/L)	0.0128	0.0156	0.00881	0.0165	0.0113
	Phosphorus (P)-Total (mg/L)	<0.050	0.057	<0.050	0.055	<0.050
	Potassium (K)-Total (mg/L)	10.6	9.32	2.06	9.56	14.2
	Selenium (Se)-Total (mg/L)	0.00022	<0.00020 ^{DLA}	0.00019	<0.00020 ^{DLA}	0.00057
	Silicon (Si)-Total (mg/L)	10.7	8.77	6.01	9.06	11.0
	Silver (Ag)-Total (mg/L)	<0.000020 ^{DLA}	0.000043	0.000033	0.000036	0.000028
	Sodium (Na)-Total (mg/L)	11.4	10.2	76.1	11.0	13.2

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1519343-1 Water 16-SEP-14 08:36 MW14-14	L1519343-2 Water 16-SEP-14 12:10 P03-01-2	L1519343-3 Water 16-SEP-14 10:55 P03-01-8	L1519343-4 Water 16-SEP-14 14:55 TH86-2	L1519343-5 Water 16-SEP-14 13:47 TH86-5
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	1.28	0.424	1.96	0.186	0.899
	Sulfur (S)-Total (mg/L)	583	7.05	19500	6.97	12.3
	Thallium (Tl)-Total (mg/L)	<0.000020 ^{DLA}	<0.000010	<0.0020 ^{DLA}	<0.000010	<0.000010
	Tin (Sn)-Total (mg/L)	0.00059	<0.00010	<0.020 ^{DLA}	0.00024	0.0278
	Titanium (Ti)-Total (mg/L)	<0.020 ^{DLA}	<0.010	<2.0 ^{DLA}	<0.010	0.021
	Uranium (U)-Total (mg/L)	0.000548	0.000526	<0.0020 ^{DLA}	0.00283	0.0122
	Vanadium (V)-Total (mg/L)	<0.0020 ^{DLA}	<0.0010	<0.20 ^{DLA}	<0.0010	0.0021
	Zinc (Zn)-Total (mg/L)	15.3	0.0155	1030	0.0053	0.0201
	Zirconium (Zr)-Total (mg/L)	<0.0016 ^{DLA}	<0.00080	<0.16 ^{DLA}	<0.00080	<0.00080
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0177	0.0023	0.45	0.0012	0.0017
	Antimony (Sb)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.020 ^{DLA}	<0.00010	<0.00010
	Arsenic (As)-Dissolved (mg/L)	0.00027	0.0141	<0.020 ^{DLA}	0.00016	0.0155
	Barium (Ba)-Dissolved (mg/L)	0.0641	0.0925	<0.010 ^{DLA}	0.0657	0.191
	Beryllium (Be)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.020 ^{DLA}	<0.00010	<0.00010
	Bismuth (Bi)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.00050	<0.10 ^{DLA}	<0.00050	<0.00050
	Boron (B)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.010	<2.0 ^{DLA}	<0.010	<0.010
	Cadmium (Cd)-Dissolved (mg/L)	0.000884	<0.000010	<0.0020 ^{DLA}	0.000011	<0.000010
	Calcium (Ca)-Dissolved (mg/L)	294	62.5	447	41.1	137
	Chromium (Cr)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.020 ^{DLA}	<0.00010	0.00056
	Cobalt (Co)-Dissolved (mg/L)	0.0180	0.00767	<0.020 ^{DLA}	<0.00010	0.00035
	Copper (Cu)-Dissolved (mg/L)	0.00094	<0.00020	<0.040 ^{DLA}	0.00037	<0.00020
	Iron (Fe)-Dissolved (mg/L)	0.029	3.02	29700	0.161	6.89
	Lead (Pb)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.000050	<0.010 ^{DLA}	<0.000050	<0.000050
	Lithium (Li)-Dissolved (mg/L)	0.0060	0.0153	0.54	0.00264	0.0567
	Magnesium (Mg)-Dissolved (mg/L)	254	12.9	1030	7.61	25.6
	Manganese (Mn)-Dissolved (mg/L)	5.17	0.124	251	0.00642	0.499
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00148	0.00314	0.015	0.00103	0.00340
	Nickel (Ni)-Dissolved (mg/L)	0.0456	<0.00050	<0.10 ^{DLA}	0.00076	0.00269
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<2.5 ^{DLA}	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	3.17	2.25	121	1.26	2.61
	Selenium (Se)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00010	<0.020 ^{DLA}	0.00030	<0.00010
	Silicon (Si)-Dissolved (mg/L)	9.74	7.68	<2.5 ^{DLA}	4.24	9.96
	Silver (Ag)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000010	<0.0020 ^{DLA}	<0.000010	<0.000010
	Sodium (Na)-Dissolved (mg/L)	7.92	7.07	253	2.23	22.2

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1519343-6 Water 15-SEP-14 17:30 MW14-04D	L1519343-7 Water 15-SEP-14 15:42 MW14-05	L1519343-8 Water 15-SEP-14 18:32 P09-LCD4	L1519343-9 Water 15-SEP-14 15:42 DUP11	L1519343-10 Water 17-SEP-14 08:30 MW14-04S
Grouping	Analyte					
WATER						
Total Metals	Strontium (Sr)-Total (mg/L)	1.49	1.28	0.438	1.33	2.55
	Sulfur (S)-Total (mg/L)	438	760	46.0	774	818
	Thallium (Tl)-Total (mg/L)	0.000053 ^{DLA}	<0.000020 ^{DLA}	0.000024	<0.000020 ^{DLA}	0.000056 ^{DLA}
	Tin (Sn)-Total (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00031	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Titanium (Ti)-Total (mg/L)	0.071	0.022	0.024	0.024	<0.020 ^{DLA}
	Uranium (U)-Total (mg/L)	0.121	0.140	0.00337	0.150	0.234 ^{DLA}
	Vanadium (V)-Total (mg/L)	0.0023	<0.0020 ^{DLA}	0.0025	<0.0020 ^{DLA}	<0.0020 ^{DLA}
	Zinc (Zn)-Total (mg/L)	0.188	0.211 ^{DLA}	0.0221	0.219 ^{DLA}	0.0281 ^{DLA}
	Zirconium (Zr)-Total (mg/L)	<0.0016 ^{DLA}	<0.0016 ^{DLA}	0.00091	<0.0016 ^{DLA}	<0.0016 ^{DLA}
Dissolved Metals	Dissolved Mercury Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Dissolved Metals Filtration Location	FIELD	FIELD	FIELD	FIELD	FIELD
	Aluminum (Al)-Dissolved (mg/L)	0.0037	0.0129	0.0027	0.0108	0.0045 ^{DLA}
	Antimony (Sb)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00073	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Arsenic (As)-Dissolved (mg/L)	0.00077	0.00133	0.00479	0.00135	0.00029
	Barium (Ba)-Dissolved (mg/L)	0.0312	0.0587	0.0789	0.0577	0.0315 ^{DLA}
	Beryllium (Be)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	<0.00010	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Bismuth (Bi)-Dissolved (mg/L)	<0.0010 ^{DLA}	<0.0010 ^{DLA}	<0.00050	<0.0010 ^{DLA}	<0.0010 ^{DLA}
	Boron (B)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.020 ^{DLA}	0.014	<0.020 ^{DLA}	<0.020 ^{DLA}
	Cadmium (Cd)-Dissolved (mg/L)	0.000060	<0.000020 ^{DLA}	0.000147	<0.000020 ^{DLA}	0.000193
	Calcium (Ca)-Dissolved (mg/L)	354	277	92.1	270	554 ^{DLA}
	Chromium (Cr)-Dissolved (mg/L)	0.00174	0.00097	0.00016	0.00100	<0.00020 ^{DLA}
	Cobalt (Co)-Dissolved (mg/L)	0.00159	0.00308	0.00049	0.00300	0.00120
	Copper (Cu)-Dissolved (mg/L)	0.00046	<0.00040 ^{DLA}	0.00445	<0.00040 ^{DLA}	0.00199
	Iron (Fe)-Dissolved (mg/L)	2.57	9.04 ^{DLA}	<0.010	8.67 ^{DLA}	<0.010 ^{DLA}
	Lead (Pb)-Dissolved (mg/L)	<0.00010 ^{DLA}	<0.00010 ^{DLA}	0.000817	<0.00010 ^{DLA}	<0.00010 ^{DLA}
	Lithium (Li)-Dissolved (mg/L)	0.0597	0.0632	0.00717	0.0651	0.0751
	Magnesium (Mg)-Dissolved (mg/L)	284	520	24.9	490	421
	Manganese (Mn)-Dissolved (mg/L)	0.577	1.15	0.391	1.15	0.747
	Mercury (Hg)-Dissolved (mg/L)	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
	Molybdenum (Mo)-Dissolved (mg/L)	0.00138	0.00053	0.00502	0.00052	0.00119
	Nickel (Ni)-Dissolved (mg/L)	0.0097	0.0132	0.00598	0.0132	0.0108
	Phosphorus (P)-Dissolved (mg/L)	<0.050	<0.050	<0.050	<0.050	<0.050
	Potassium (K)-Dissolved (mg/L)	10.8	9.74	1.97	9.50	14.3
	Selenium (Se)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00023	<0.00020 ^{DLA}	0.00059
	Silicon (Si)-Dissolved (mg/L)	9.76	8.54	4.57	8.37 ^{DLA}	11.1 ^{DLA}
	Silver (Ag)-Dissolved (mg/L)	<0.000020 ^{DLA}	0.000021	<0.000010	<0.000020 ^{DLA}	<0.000020 ^{DLA}
	Sodium (Na)-Dissolved (mg/L)	11.8	10.3	73.7	10.1	12.5

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1519343-1 Water 16-SEP-14 08:36 MW14-14	L1519343-2 Water 16-SEP-14 12:10 P03-01-2	L1519343-3 Water 16-SEP-14 10:55 P03-01-8	L1519343-4 Water 16-SEP-14 14:55 TH86-2	L1519343-5 Water 16-SEP-14 13:47 TH86-5
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	1.27	0.416	2.02	0.183	0.906
	Sulfur (S)-Dissolved (mg/L)	571 ^{DLA}	7.17	19300 ^{DLA}	6.95	8.13
	Thallium (Tl)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000010	<0.0020 ^{DLA}	<0.000010	<0.000010
	Tin (Sn)-Dissolved (mg/L)	0.00059 ^{DLA}	<0.00010	<0.020 ^{DLA}	<0.00010	<0.00010
	Titanium (Ti)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.010	<2.0 ^{DLA}	<0.010	<0.010
	Uranium (U)-Dissolved (mg/L)	0.000479 ^{DLA}	0.000506	<0.0020 ^{DLA}	0.00266	0.00288
	Vanadium (V)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.0010	<0.20	<0.0010	<0.0010
	Zinc (Zn)-Dissolved (mg/L)	12.5 ^{DLA}	0.0074	999 ^{DLA}	0.0026	<0.0010
	Zirconium (Zr)-Dissolved (mg/L)	<0.0016 ^{DLA}	<0.00080	<0.16 ^{DLA}	<0.00080	<0.00080

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L1519343-6 Water 15-SEP-14 17:30 MW14-04D	L1519343-7 Water 15-SEP-14 15:42 MW14-05	L1519343-8 Water 15-SEP-14 18:32 P09-LCD4	L1519343-9 Water 15-SEP-14 15:42 DUP11	L1519343-10 Water 17-SEP-14 08:30 MW14-04S
Grouping	Analyte					
WATER						
Dissolved Metals	Strontium (Sr)-Dissolved (mg/L)	1.53	1.31	0.452	1.33	2.51
	Sulfur (S)-Dissolved (mg/L)	460	760	46.2	752	793
	Thallium (Tl)-Dissolved (mg/L)	<0.000020 ^{DLA}	<0.000020 ^{DLA}	0.000011	<0.000020 ^{DLA}	0.000044 ^{DLA}
	Tin (Sn)-Dissolved (mg/L)	<0.00020 ^{DLA}	<0.00020 ^{DLA}	0.00025	<0.00020 ^{DLA}	<0.00020 ^{DLA}
	Titanium (Ti)-Dissolved (mg/L)	<0.020 ^{DLA}	<0.020 ^{DLA}	<0.010	<0.020 ^{DLA}	<0.020 ^{DLA}
	Uranium (U)-Dissolved (mg/L)	0.128	0.145	0.00316	0.146	0.230
	Vanadium (V)-Dissolved (mg/L)	<0.0020 ^{DLA}	<0.0020 ^{DLA}	<0.0010	<0.0020 ^{DLA}	<0.0020 ^{DLA}
	Zinc (Zn)-Dissolved (mg/L)	0.173	0.0331	0.0110	0.0399	0.0264
	Zirconium (Zr)-Dissolved (mg/L)	<0.0016 ^{DLA}	<0.0016 ^{DLA}	<0.00080	<0.0016 ^{DLA}	<0.0016 ^{DLA}

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

Qualifiers for Sample Submission Listed:

Qualifier	Description
WSMT	Water sample(s) for total mercury analysis was not submitted in glass or PTFE container with HCl preservative. Results may be biased low.

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Chromium (Cr)-Total	MB-LOR	L1519343-10, -7, -8, -9
Method Blank	Manganese (Mn)-Total	MB-LOR	L1519343-10, -7, -8, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1519343-1, -10, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Sulfate (SO4)	MS-B	L1519343-1, -10, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Antimony (Sb)-Dissolved	MS-B	L1519343-1, -10, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Arsenic (As)-Dissolved	MS-B	L1519343-1, -10, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Molybdenum (Mo)-Dissolved	MS-B	L1519343-1, -10, -2, -3, -4, -5, -6, -7, -8, -9
Matrix Spike	Strontium (Sr)-Dissolved	MS-B	L1519343-1, -10, -2, -3, -4, -5, -6, -7, -8, -9

Qualifiers for Individual Parameters Listed:

Qualifier	Description
DLA	Detection Limit adjusted for required dilution
MB-LOR	Method Blank exceeds ALS DQO. Limits of Reporting have been adjusted for samples with positive hits below 5x blank level.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
ACY-PCT-VA	Water	Acidity by Automatic Titration	APHA 2310 "Acidity"
This analysis is carried out using procedures adapted from APHA Method 2310 "Acidity". Acidity is determined by potentiometric titration to a specified endpoint.			
Samples of industrial wastes, acid mine drainage, or other solutions that contain appreciable amounts of hydrolyzable metal ions such as aluminum, iron, and manganese may require hot peroxide treatment to ensure oxidation and hydrolysis of reduced forms of polyvalent cations. Acidity results may be highly variable if this procedure is not followed. Results in this report for 'Acidity (as CaCO3)' have not been peroxide treated.			
ACY-PCT-VA	Water	Acidity by Automatic Titration	APHA 2310 Acidity
This analysis is carried out using procedures adapted from APHA Method 2310 "Acidity". Acidity is determined by potentiometric titration to a specified endpoint.			
Samples of industrial wastes, acid mine drainage, or other solutions that contain appreciable amounts of hydrolyzable metal ions such as aluminum, iron, and manganese may require hot peroxide treatment to ensure oxidation and hydrolysis of reduced forms of polyvalent cations. Acidity results may be highly variable if this procedure is not followed. Results in this report for 'Acidity (as CaCO3)' have not been peroxide treated.			
ALK-COL-VA	Water	Alkalinity by Colourimetric (Automated)	EPA 310.2
This analysis is carried out using procedures adapted from EPA Method 310.2 "Alkalinity". Total Alkalinity is determined using the methyl orange colourimetric method.			
ANIONS-CL-IC-WR	Water	Chloride by Ion Chromatography	EPA 300.1
This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003.			
ANIONS-SO4-IC-WR	Water	Sulphate by Ion Chromatography	EPA 300.1
This analysis is carried out using procedures adapted from EPA Method 300.1, "Determination of Inorganic Anions by Ion Chromatography", Revision 1.0, April 1999 and from "Determination of Inorganic Anions in Environmental Waters Using a Hydroxide-Selective Column", Application Note 154 v.19, Dionex 2003.			
EC-PCT-VA	Water	Conductivity (Automated)	APHA 2510 Auto. Conduc.
This analysis is carried out using procedures adapted from APHA Method 2510 "Conductivity". Conductivity is determined using a conductivity electrode.			
HARDNESS-CALC-VA	Water	Hardness	APHA 2340B
Hardness (also known as Total Hardness) is calculated from the sum of Calcium and Magnesium concentrations, expressed in CaCO3 equivalents. Dissolved Calcium and Magnesium concentrations are preferentially used for the hardness calculation.			
HG-DIS-LOW-CVAFS-VA	Water	Dissolved Mercury in Water by CVAFS(Low)	EPA SW-846 3005A & EPA 245.7
This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by filtration (EPA Method 3005A) and			

Reference Information

involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry or atomic absorption spectrophotometry (EPA Method 245.7).

HG-TOT-LOW-CVAFS-VA Water Total Mercury in Water by CVAFS(Low) EPA 245.7

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves a cold-oxidation of the acidified sample using bromine monochloride prior to reduction of the sample with stannous chloride. Instrumental analysis is by cold vapour atomic fluorescence spectrophotometry or atomic absorption spectrophotometry (EPA Method 245.7).

IONBALANCE-VA Water Ion Balance Calculation APHA 1030E

Cation Sum, Anion Sum, and Ion Balance (as % difference) are calculated based on guidance from APHA Standard Methods (1030E Checking Correctness of Analysis). Because all aqueous solutions are electrically neutral, the calculated ion balance (% difference of cations minus anions) should be near-zero.

Cation and Anion Sums are the total meq/L concentration of major cations and anions. Dissolved species are used where available. Minor ions are included where data is present. Ion Balance is calculated as:

$$\text{Ion Balance (\%)} = [\text{Cation Sum} - \text{Anion Sum}] / [\text{Cation Sum} + \text{Anion Sum}]$$

MET-D-CCMS-VA Water Dissolved Metals in Water by CRC ICPMS APHA 3030 B&E / EPA SW-846 6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

MET-DIS-LOW-ICP-VA Water Dissolved Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedure involves filtration (EPA Method 3005A) and analysis by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

MET-T-CCMS-VA Water Total Metals in Water by CRC ICPMS APHA 3030 B&E / EPA SW-846 6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using hotblock, or filtration (APHA 3030B&E). Instrumental analysis is by collision cell inductively coupled plasma - mass spectrometry (modified from EPA Method 6020A).

MET-TOT-LOW-ICP-VA Water Total Metals in Water by ICPOES EPA 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H "pH Value"

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

PH-PCT-VA Water pH by Meter (Automated) APHA 4500-H pH Value

This analysis is carried out using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode

It is recommended that this analysis be conducted in the field.

S-DIS-ICP-VA Water Dissolved Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

S-TOT-ICP-VA Water Total Sulfur in Water by ICPOES EPA SW-846 3005A/6010B

Reference Information

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - optical emission spectrophotometry (EPA Method 6010B).

Method Limitation: This method will not give total sulfur results for all samples. Sulfide or other volatile forms of sulfur that may be present in submitted samples, is often lost during the sampling, preservation and analysis process. The data reported as total and/or dissolved sulfur represents all non-volatile forms of sulfur present in a particular sample.

TSS-LOW-WR Water Total Suspended Solids by Grav. (1 mg/L) APHA 2540 D

This analysis is carried out using procedures adapted from APHA Method 2540 "Solids". Solids are determined gravimetrically. Total Suspended Solids are determined by filtering a sample through a glass fibre filter and drying the filter at 104 degrees celsius.

ZR-D-MS-VA Water Dissolved Zr in Water by ICPMS EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

ZR-T-MS-VA Water Total Zr in Water by ICPMS EPA SW-846 3005A/6020A

This analysis is carried out using procedures adapted from "Standard Methods for the Examination of Water and Wastewater" published by the American Public Health Association, and with procedures adapted from "Test Methods for Evaluating Solid Waste" SW-846 published by the United States Environmental Protection Agency (EPA). The procedures may involve preliminary sample treatment by acid digestion, using either hotblock or microwave oven, or filtration (EPA Method 3005A). Instrumental analysis is by inductively coupled plasma - mass spectrometry (EPA Method 6020A).

**** ALS test methods may incorporate modifications from specified reference methods to improve performance.**

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WR	ALS ENVIRONMENTAL - WHITEHORSE, YUKON, CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

1-17092014

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg ww - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

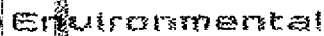
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

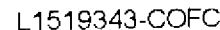
Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



Canada Toll Free: 1 800 668 9878



COC Number: 1 - 17092014

Page 1 of 1

[illegible]

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - record copy.

1. If any water samples are taken from a Regulated Drinking Water (RDW) System, please submit using an Authorized RDW CQC form.

SEP 18 4 40

5/2/1.5/4.5/3/9/2/3.5

APPENDIX C

Field Forms



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|---------------------------|---------------------------------------|--|---|---|-------|
| Well Number: | P01-01 B | Project Number: | 1343-005.02 | Date: | 9 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB/AN | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | clear/sunny ~6°C | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: DUP 1 | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| hydro lift | | | | | | |
| Initial Depth to Water (m): | 3.740 | Calculations: | Purge Start Time: | 11:15 | Purge End Time: 11:55 | |
| Depth to Bottom (m): | 35.535 | $35.5 - 3.75 = 31.75 \times 2 = 63.5$ | Time (10) min. interval (24h) | 11:25 | 11:35 | |
| Submerged Tubing Depth (m): | ~33 | | Depth (m) | 3.755 | 3.756 | 3.757 |
| Well Stick-up Height (m): | 0.59 | | Temperature (°C) | 2.2 | 2.3 | 2.4 |
| Estimated Water Volume (L): | ~63.5 | | pH | 7.10 | 7.10 | 7.11 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 844 | 846 | 850 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1496 | 1491 | 1491 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | same | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 15 | 15 | 15 |
| | | Cumulative Purge Volume (L) | 75 | 30 | 45 | |
| | | Total Purge Volume: | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | |
| Analysis | hydro lift | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| P01-01B | Dis Metals | 11:56 - | 1x125ml plastic | ☒ Yes | 0.63 NTU e
time of sample | |
| + DUP 1 | Total Metals
Gen Chem | 12:04 | 1x125ml plastic
1x7L plastic | ☒ No | | |
| | | | | Comments | | |
| | | | | Dis Metals field filters
DUP 1 = field duplicate | | |

f P01-01B, same parameters collected/preserved/filtred



Sample Site (Con't): P01-01B

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.: 1-5, AN camera

no GPS batteries, no reading obtained,
see spring 2014 coordinates

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

- Nested wells in stick up steel casing. PVC has no j-plug
- Existing 5/8" well in well, used this instead of per pump
- Same sample equipment as P01-01A

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|---|
| Well Number: | PG1-01A | Project Number: | 1343-005.02 | Date: | 9 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB / AN |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | clear / sunny, ~60°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ NO | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Watterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Hydro lift | | | | | |
| Initial Depth to Water (m): | 3.652 | Calculations: | Purge Start Time: | 10:35 | Purge End Time: |
| Depth to Bottom (m): | 20.345 | 20.35 - 3.65 | Time (5) min. interval (24h) | 10:40 | 10:45 |
| Submerged Tubing Depth (m): | ~16.5 | = 16.7 x 2 | Depth (m) | 3.675 | 3.668 |
| Well Stick-up Height (m): | 0.64 | | Temperature (°C) | 1.9 | 2.6 |
| Estimated Water Volume (L): | ~33.5 L | = 33.5 L | pH | 6.57 | 6.57 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1052 | 1055 |
| (DTB - DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1881 | 1882 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | same |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 7.5 | 7.5 |
| | | | Cumulative Purge Volume (L) | 7.5 | 15 |
| | | | Total Purge Volume: | 35 | |
| Method: | Watterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | hydro lift | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| PG1-01A | Dis Metals
Total Metals
Gen Chem | 11:06 - 11:12 | 1 x 125ml plastic
1 x 20 plastic | ☒ Yes
☒ No | 0.46 NTU
c time of sample |
| | | | | | Dis Metals field filtered |

ELR 451 # 1229 calibrated by AN, 9 Sept 2014

Pine Water level #4567

ELR 4a Mottle 2020 Turbidity calibrated by

AN, 9 Sept 2014



Sample Site (Con't): PO1-01A

no GPS batteries, no reading obtained,
see Spring 2014 coordinates

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.: #1-5 AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

Nested wells in stick up steel casing. PVC has no j-plug
Existing 5/8" ventura in well, used this instead of peri pump



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|--|
| Well Number: | X24-960 | Project Number: | 1343-005.02 | Date: | 9 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AS AN |
| Piezometer Diameter / Screen Length: | 2" PVC /
Unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Sunny, clear
~ 9°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ No | Recovery: | ☐ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| hydro lift | | | | | |
| Initial Depth to Water (m): | 3.765 | Calculations: | Purge Start Time: | 12:35 | Purge End Time: 13:15 |
| Depth to Bottom (m): | 28.284 | 28.3 - 3.75 = 24.25 | Time (10) min. interval (24h) | 12:45 | 12:55 |
| Submerged Tubing Depth (m): | ~26.5 | = 24.25 | Depth (m) | 7.850 | 11.380 |
| Well Stick-up Height (m): | ~0.96 (road base) | > 21.1 | Temperature (°C) | 3.6 | 3.5 |
| Estimated Water Volume (L): | ~48.5 | ~ 48.5 L | pH | 6.08 | 6.06 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 2011 | 2003 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3394 | 3396 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | [scribbled out] | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | [scribbled out] | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | same |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 10 | 10 |
| | | | Cumulative Purge Volume (L) | 10 | 20 |
| | | | Total Purge Volume: | 50 L | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | Manual | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| X24-960 | Total Metals
Dis Metals
Gen Chem | 18:32 - | 1x125m plastic }
1x7L plastic } | ☒ Yes
☒ No | 10.0 NTU a time of sample |
| | | | | | Dis Metals field filtered |

Same purge equipment as for P01-01A, sampled w/ Waterra manually

purge and sample

☒ Drawdown
See comments on next page

from TOC



Sample Site (Con't): X24-96D

no batteries for GPS, no reading taken
see spring 2014 coordinates

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.: 6-10, AAI camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| 2" PVC inside metal stick up. Cap in place over PVC. Existing 5/8" water in well, used this rather than peristaltic. Single 2" inside casing, located ~ 2m NE of another steel casing (marked X24) w/ 2x2" PVC (A+B) and 1x1" PVC (C). Stopped purge @ 13:15, 9 Sept → stable parameters + 1 well volume removed, but no sample collected yet because significant draw down during purge. DTW @ 18:30, 9 Sept 2014 = 3.891m, well essentially fully recharged, proceed w/ manual water sampling. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|--|----------------------|--|---|--|---------------------------|-------|
| Well Number: | P01-03 | Project Number: | 1343-005.02 | Date: | 9 Sept 2014 | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB/AN | | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Clear, sunny, light wind ~ 3°C | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ NO | Recovery: | ☐ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| | @ low flow | | | | | | |
| Initial Depth to Water (m): | 2.936 | Calculations: | Purge Start Time: | 13:45 | Purge End Time: | | |
| Depth to Bottom (m): | 9.645 | 9.65 - 2.9 = 6.75 | Time (5 min. interval (24h)) | 13:50 13:55 14:00 14:05 14:10 14:15 | 14:20 | | |
| Submerged Tubing Depth (m): | ~ 8.75 | ~ 6.75 | Depth (m) | 3.740 4.105 4.256 4.492 4.555 4.595 | 4.440 | | |
| Well Stick-up Height (m): | 0.44 | x 2 L/m | Temperature (°C) | 4.0 4.0 3.9 4.0 4.1 4.2 | 4.2 | | |
| Estimated Water Volume (L): | ~ 13.5 | ~ 13.5 L | pH | 5.94 5.98 6.00 6.03 6.02 6.04 | 6.04 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 2209 2192 2228 2282 2325 2373 | 2372 | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3692 3663 3734 3803 3880 3928 | 3934 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | same | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 3 2.5 2 1.5 1.5 1.5 | 1.5 | | |
| | | | Cumulative Purge Volume (L) | 3 5.5 7.5 9 10.5 12 | 13.5 | | |
| | | | Total Purge Volume: | 13.5 L | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | @ low flow | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| P01-03 | Dis Metals
Total Metals
Gen Chem | 14:23 - | 1 x 125ml plastic
2 x 7L plastic | ☒ Yes
☒ No | 8.75 NTU after 13.5L purge, immediate prior to sample | Dis Metals field filtered | |

☒ Drawdown, see next page

Same sample equipment as P01-0/A, except used ECR per pump instead of Pine Hydrolift



Sample Site (Con't): P01-03

not recorded, no batteries for GPS,
see spring 2014 coordinates

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.: 11-15, AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features)

- 2" PVC well w/ cap inside metal slide up - good condition
Existing 5/8" tubing in well, but added 10m of 1/4" tubing for low flow sample + 6" silicon → to mitigate drawdown
② Stopped purge @ 14:20 on Sept 9 w/ relatively stable parameters + one well volume of clear water removed, collected sample once drawdown stabilized after initial drawdown



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|---|---|---|
| Well Number: | X25-96A | Project Number: | 1343-005.02 | Date: | 9 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AG AN |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | clear, sunny, light wind ~ 80C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ YES ☐ NO | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| e low flow | | | | | |
| Initial Depth to Water (m): | 3.184 | Calculations: | Purge Start Time: | 14:50 | Purge End Time: 15:20 |
| Depth to Bottom (m): | 9.462 | 9.45 - 3.2 ~ 6.25 | Time (5) min. interval (24h) | 14:55 15:00 15:05 15:10 15:15 15:20 | |
| Submerged Tubing Depth (m): | ~ 9 | ~ 26/m | Depth (m) | 3.175 3.175 3.176 3.175 3.175 3.175 | |
| Well Stick-up Height (m): | ~ 12.5L | ~ 12.5L | Temperature (°C) | 4.0 3.9 3.9 3.9 3.9 3.9 | |
| Estimated Water Volume (L): | 0.63 | | pH | 6.83 6.85 6.80 6.79 6.81 6.80 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1061 1056 1055 1055 1054 1054 | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1773 1769 1767 1764 1766 1765 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | same |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 3 2 2 2 2 2 | |
| | | | Cumulative Purge Volume (L) | 3 5 7 9 11 13 | |
| | | | Total Purge Volume: | 13 L | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | e low flow | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| X25-96A | Dis Metals
Total Metals
Gen Chem | 15:21 -
15:28 | 1x125ml plastic
1x1L plastic | ☒ Yes
☒ No | 1.13 NTU post purge,
pre sample |
| | | | | | Dis Metals field filtered |

Same equipment as P01-01A except per pump instead of hydro lift



Sample Site (Con't): x25-96 A

no batteries for GPS, see coordinates for
Spring 2014 event

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.: #16-20, AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| X25-96A + 96B tested in same metal stick up protector, both wells ✓ caps, in good condition (both 2" PVC)
96A has both 5/8" + 1/4" tubing installed, used 1/4" for low flow sample |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|---|
| Well Number: | X25-96 B | Project Number: | 1343-005.02 | Date: | 9 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Clear, sunny, light wind ~80C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ NO | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | slow flow | | | | |
| Initial Depth to Water (m): | 3.056 | Calculations: | Purge Start Time: | 15:30 | Purge End Time: 15:50 |
| Depth to Bottom (m): | 19.705 | 19.7 - 3.05 = 16.65 | Time (5) min. interval (24h) | 15:35 15:40 15:45 15:50 | 15:55 |
| Submerged Tubing Depth (m): | ~19 m | = 16.65 | Depth (m) | 3.045 3.045 3.045 3.042 | |
| Well Stick-up Height (m): | 0.61 | = 21/m | Temperature (°C) | 3.9 3.8 3.8 3.7 | |
| Estimated Water Volume (L): | ~33.5 | ~ 33.5 | pH | 7.39 7.41 7.42 7.42 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1021 1020 1021 1022 | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1712 1713 1718 1722 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | Clear no d/s | same |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 3 3 2.5 2.5 | @ faint sulphur odour when emptying purge bucket |
| | | | Cumulative Purge Volume (L) | 3 6 8.5 11 | |
| | | | Total Purge Volume: | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | slow flow | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| X25-96 B | Dis Metals
Total Metals
Gen Chem | 15:52 - 16:00 | 1x125ml plastic }
1x7L plastic } | ☒ Yes
☒ No | 1.17 NTU @ time of sample |
| | | | | | Dis Metals field filtered |

Same equipment as P01-01A except per pump instead of hydro lift



Sample Site (Con't): X25-96B

no batteries for EPS, see coordinates
from spring 2014 event

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.: #16-20, AN camera

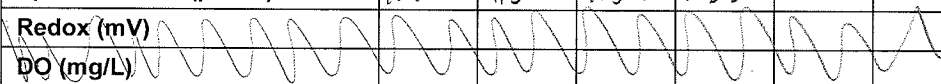
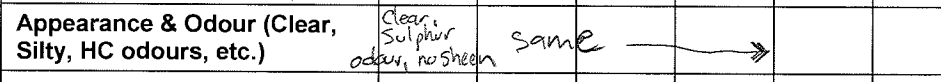
| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from front of page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

X25-96B + 96A (2" PVC) nested in same net-l stick up. Both in good condition, both w/caps
96B has 5/8" installed but added 20m of 1/4" tubing + 6" silicon for low flow sampling

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--|---|---|--|---|-------|
| Well Number: | P01-04A | Project Number: | 1343-005.02 | Date: | 9 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | clear, sunny ~ 10°C | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ Yes ☐ No | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| hydro lift | | | | | | |
| Initial Depth to Water (m): | 1.535 | Calculations: | Purge Start Time: | 17:35 | Purge End Time: | |
| Depth to Bottom (m): | 53.150 | $53.15 - 1.35 = 51.8$
$\times 2 \text{ L/m} = 103.5 \text{ L}$ | Time (10) min. interval (24h) | 17:45 | 17:55 | |
| Submerged Tubing Depth (m): | ~ 51m | | Depth (m) | 1.545 | 1.559 | 1.568 |
| Well Stick-up Height (m): | 0.32 | | Temperature (°C) | 3.6 | 3.6 | 3.6 |
| Estimated Water Volume (L): | ~ 103.5 | | pH | 6.62 | 6.54 | 6.55 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 686 | 682 | 683 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1160 | 1154 | 1156 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) |  | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) |  | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | Clear, Sulphur odour, no screen | same → | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 30 | 30 | 30 |
| | | Cumulative Purge Volume (L) | 30 | 60 | 90 | |
| | | Total Purge Volume: | 105 L | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | |
| Analysis | hydro lift | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| P01-04A | Dis Metals
Total Metals
Gen Chem | 18:12 - 18:16 | 1x 125ml plastic
1x 2L plastic | ☒ Yes
☒ No | 1.11 NTU c line of sample | |
| | | | | | Dis Metals field filled | |

Same equipment as P01-01A

Sample Site (Con't): PG1-04A

No batteries for GPS, see coordinates
from spring 2014 event

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.: #21-25, AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

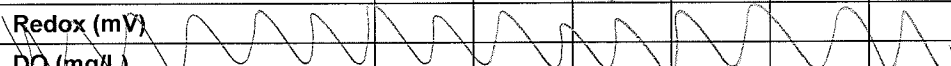
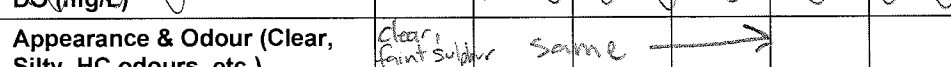
General Notes (Condition of well or other features):

PG1-04A + 04B are both 2" PVC tested in same metal stick up protector. 04A was capped when found
used existing 5/8" tubing in well for sampling → had to fix kink in tubing w/ tape to still use it

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--|--|---|--|---|-------|
| Well Number: | P01-04B | Project Number: | 1343-005.02 | Date: | 9 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Clear sunny ~10°C | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ Yes ☐ No | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| hydro lift | | | | | | |
| Initial Depth to Water (m): | 2.003 | Calculations: | Purge Start Time: | 16:20 | Purge End Time: 16:40 | |
| Depth to Bottom (m): | 34.085 | $32 \text{ m} \times 2 \text{ L/m} = 64$ | Time (5) min. interval (24h) | 16:25 | 16:30 | |
| Submerged Tubing Depth (m): | ~32 m | | Depth (m) | 2.006 | 2.005 | 2.004 |
| Well Stick-up Height (m): | 0.30 | | Temperature (°C) | 3.5 | 3.4 | 3.3 |
| Estimated Water Volume (L): | ~64 | | pH | 6.75 | 6.73 | 6.74 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | 1570 | 1567 | 1566 |
| | | | Specific Cond. (µs/cm) | 2666 | 2667 | 2670 |
| | | | Redox (mV) |  | | |
| | | | DO (mg/L) |  | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | Clear, faint sulphur odour, no other odours. Same → | | |
| | | | Interval Purge Volume (L) | 17.5 | 17.5 | 17.5 |
| | | Cumulative Purge Volume (L) | 17.5 | 35 | 52.5 | |
| | | Total Purge Volume: | 70 L | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | |
| Analysis | hydro lift | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| P01-04B | Dis Metals
Total Metals
Gen Chem | 16:41 -
16:46 | 1x125ml plastic
1x1L plastic → | ☒ Yes
☒ No | 0.67 NTU @ time of sample | |
| | | | | | Dis Metals field filtered | |

Same sample equipment as P01-01A



Sample Site (Con't): PO1-04B

No batteries for GPS, see coordinates from
Spring 2014 event

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.: # 21-25, AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| PO1-04B + 04A are 2" PVC nested in metal stick up. 04B did not have cap on (but cap does exist), instead found well w/ 5/8" tubing existing b-t sticking up out of well, see photos. Cap placed back over well after we finished sampling
- used existing 5/8" tubing in well for sampling |



GROUNDWATER SAMPLE COLLECTION SHEET

(#009-5152) FB2

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|--|---------------------------------|------------------------------|--|-----------------------------|---|---------------|-------------------|-----------------|--|----------------------|------------------------------|--|--|-----------------------------|-----------|--|--|---------------------------|------------------|--|--|-----------------------------|----|--|--|--|---------------|--|--|--|------------------------|--|--|--|------------|--|--|--|-----------|--|--|--|--|--|--|--|---------------------------|--|--|--|-----------------------------|--|--|--|---------------------|--|--|
| Well Number: | SRK05-SPE | Project Number: | 1343-005.02 | Date: | 09 SEPT 2014 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GAR + RM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | ~1A | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT, SUNNY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: | Recovery: | ☐ Good ☐ Bad | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Initial Depth to Water (m):</td> <td rowspan="10"> <div style="display: flex; align-items: center;"> <div style="width: 50px; height: 100px; border-left: 2px solid black; margin-right: 10px;"></div> <div> <p>(DTB - DTW) x 2 (for 2" well diameter) = 1 well volume</p> <p>(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume</p> <p>2" casing has 0.16 USgal/ft or 2.032 l/m</p> <p>1" casing has 0.04 USgal/ft or 0.508 l/m</p> <p>8" sand pack has 0.73 USgal/ft or 9.271 l/m</p> <p>6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m</p> </div> </div> </td> <td>Calculations:</td> <td>Purge Start Time:</td> <td colspan="2">Purge End Time:</td> </tr> <tr> <td>Depth to Bottom (m):</td> <td>Time () min. interval (24h)</td> <td colspan="2"></td> </tr> <tr> <td>Submerged Tubing Depth (m):</td> <td>Depth (m)</td> <td colspan="2"></td> </tr> <tr> <td>Well Stick-up Height (m):</td> <td>Temperature (°C)</td> <td colspan="2"></td> </tr> <tr> <td>Estimated Water Volume (L):</td> <td>pH</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>Cond. (µs/cm)</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>Specific Cond. (µs/cm)</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>Redox (mV)</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>DO (mg/L)</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>Appearance & Odour (Clear, Silty, HC odours, etc.)</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>Interval Purge Volume (L)</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>Cumulative Purge Volume (L)</td> <td colspan="2"></td> </tr> <tr> <td></td> <td>Total Purge Volume:</td> <td colspan="2"></td> </tr> </table> | | | | | | Initial Depth to Water (m): | <div style="display: flex; align-items: center;"> <div style="width: 50px; height: 100px; border-left: 2px solid black; margin-right: 10px;"></div> <div> <p>(DTB - DTW) x 2 (for 2" well diameter) = 1 well volume</p> <p>(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume</p> <p>2" casing has 0.16 USgal/ft or 2.032 l/m</p> <p>1" casing has 0.04 USgal/ft or 0.508 l/m</p> <p>8" sand pack has 0.73 USgal/ft or 9.271 l/m</p> <p>6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m</p> </div> </div> | Calculations: | Purge Start Time: | Purge End Time: | | Depth to Bottom (m): | Time () min. interval (24h) | | | Submerged Tubing Depth (m): | Depth (m) | | | Well Stick-up Height (m): | Temperature (°C) | | | Estimated Water Volume (L): | pH | | | | Cond. (µs/cm) | | | | Specific Cond. (µs/cm) | | | | Redox (mV) | | | | DO (mg/L) | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | Interval Purge Volume (L) | | | | Cumulative Purge Volume (L) | | | | Total Purge Volume: | | |
| Initial Depth to Water (m): | <div style="display: flex; align-items: center;"> <div style="width: 50px; height: 100px; border-left: 2px solid black; margin-right: 10px;"></div> <div> <p>(DTB - DTW) x 2 (for 2" well diameter) = 1 well volume</p> <p>(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume</p> <p>2" casing has 0.16 USgal/ft or 2.032 l/m</p> <p>1" casing has 0.04 USgal/ft or 0.508 l/m</p> <p>8" sand pack has 0.73 USgal/ft or 9.271 l/m</p> <p>6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m</p> </div> </div> | Calculations: | Purge Start Time: | Purge End Time: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Depth to Bottom (m): | | Time () min. interval (24h) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | | Depth (m) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | | Temperature (°C) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | | pH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Cond. (µs/cm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Specific Cond. (µs/cm) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Redox (mV) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | DO (mg/L) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Interval Purge Volume (L) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Cumulative Purge Volume (L) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Total Purge Volume: | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Analysis | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | ☐ Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | ☐ No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

OVER →



Sample Site (Con't): _____

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.:

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data – Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time (___) minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| FB2 MADE UP AT
SAMPLE LOCATION P09 S152.. 14-30.
ALS DI WATER 29 AUG 2014 BATCH. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|--------------------------------------|--|--|--|---|----------|-------|-------|
| Well Number: | SRK08-SP7A | Project Number: | 1343-005.02 | Date: | SEPT 9 2014 | | | |
| Approximate Date Drilled: | UNKNOWN | Client: | YG-AAM | Sampler: | GMA + RM | | | |
| Piezometer Diameter / Screen Length: | N/A | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT, CLEAR | | | |
| CHV (ppm / % LEL): | N/A | Duplicate Collected: | ☐ ID: NO DUP. | Recovery: | ☒ Good ☐ Bad | | | |
| Purge Method | | | | | | | | |
| ☒ Waterra | ☐ Peristaltic | ☐ Disp. Bailer | ☐ Subm. Pump | ☐ Air Lift | ☐ Other | | | |
| HYDROLIFT w/ CEN | | | | | | | | |
| Initial Depth to Water (m): | 2.635 | Calculations: | Purge Start Time: 11-30 | Purge End Time: | | | | |
| Depth to Bottom (m): | 17.75 | $17.75 - 2.635 = 15.115$
$\times 2 = 30.23$ | Time () min. interval (24h) | 11-33 | 11-36 | 11-42 | 11-47 | 11-52 |
| Submerged Tubing Depth (m): | 16.75 | | Depth (m) | 3.01 | 3.04 | 3.07 | 3.08 | 3.11 |
| Well Stick-up Height (m): | 1.0 | | Temperature (°C) | 2.1 | 2.1 | 1.9 | 1.9 | 1.9 |
| Estimated Water Volume (L): | 30.23 | | pH | 5.91 | 5.97 | 5.93 | 5.95 | 5.95 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 754 | 804 | 825 | 830 | 830 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 384 | 409 | 330 | 424 | 428 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | N/A | N/A | N/A | N/A | N/A |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR no odour | → | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 7 | 5 | 12 | 8 | 13 |
| | | | Cumulative Purge Volume (L) | 7 | 12 | 24 | 32 | 45 |
| | | | Total Purge Volume: | 45. | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | |
| Analysis | HYDROLIFT | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | |
| SRK08 SP7A | TOTAL M
DISS M. | 11-54 | PLASTIC 1L
11 125ML | ☒ Yes
☐ No | 2.8 | NO CAP | | |

GEN. CHEM.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V

Easting: 0584437

Northing: 6913095 (WPA04)

Photo Nos.: 4411 (GR)

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----------|
| Time (hh:mm; 24h) | 11-54 |
| Temperature (°C) | 1.9 |
| DO (mg/L) | — |
| Specific Cond. (µs/cm) | 830 |
| Cond. (µs/cm) | |
| pH | 5.95 |
| Redox (mV) or TDS | 428 (PPM) |
| Turbidity (NTU) | 2.8 |
| DO (mg/L) | — |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| <p>HYDROLIFT. NO CAP. GENERATOR (2000W)</p> <p>NO CONSUMABLES.</p> |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|--|--|--|---|
| Well Number: | SRK08-SP-7B | Project Number: | 1343-005.02 | Date: | SEPT 9 2014 |
| Approximate Date Drilled: | N/A | Client: | YG-AAM | Sampler: | RM + GMR |
| Piezometer Diameter / Screen Length: | N/A | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT 7°C
CLEAR |
| CHV (ppm / % LEL): | N/A | Duplicate Collected: | ☒ ID: DUP2 | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | <u>Peristaltic</u> | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Initial Depth to Water (m): | 2.718 | Calculations: | Purge Start Time: | 10-30 | Purge End Time: 11:10 |
| Depth to Bottom (m): | 8.690 | $8.690 - 2.718 = 5.972$
$\times 2 = 11.944$ | Time () min. interval (24h) | 10-35 | 10-44 |
| Submerged Tubing Depth (m): | 8.0 | | Depth (m) | 2.722 | 2.722 |
| Well Stick-up Height (m): | 1.06 | | Temperature (°C) | 4 | 3.3 |
| Estimated Water Volume (L): | 11.94 | | pH | 5.95 | 5.8 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 248 | 267 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | - | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | 126 | 135 |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR No odour | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 2.0 |
| | | Cumulative Purge Volume (L) | 1.5 | 3.0 | |
| | | Total Purge Volume: | 10.5 | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| Analysis | | ☒ | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| SRK08-SP7B | TOTAL M.
DISSOLVED M.
GEN. CHEM. | 11-10-11-20 | PLASTIC
1L + 2x125 | ☒ Yes
☐ No | 1.99 |
| | | | | | STRAIGHT FORWARD,
DISS.
METALS FILTERED. |

DUP2

TOTAL M.
DISSOLVED M.
GEN. CHEM.

11-10
- 11-20

11-20

1.99

NO WELL CAP.
WELL CAP
- WELL CAP REPLACED.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584437

Northing: 6913095 LP004

Photo Nos.: 4411 (GMR)

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----------------|
| Time (hh:mm; 24h) | 11-10 - 11-20 |
| Temperature (°C) | 2.8 |
| DO (mg/L) | / |
| Specific Cond. (µs/cm) | 273 |
| Cond. (µs/cm) | 5-76 |
| pH | 5-76 |
| Redox (mV) TDS | 139 PPM |
| Turbidity (NTU) | 1.99 |
| DO (mg/L) | N/A |
| | - |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| NO Consumables.
NO WELL CAP |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | |
|--------------------------------------|---|---|--|--|---|----------|-------|-------|-------|
| Well Number: | SRK05-SP-5 | Project Number: | 1343-005.02 | Date: | 9 Sep 2019 | | | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | RH | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Sunny - 8°C | | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☐ ID: — | Recovery: | ☒ Good ☐ Bad | | | | |
| Purge Method | | | | | | | | | |
| Watertra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | |
| X | | | | | | | | | |
| Initial Depth to Water (m): | 6.136 | Calculations: | Purge Start Time: | 13:01 | Purge End Time: 13:35 | | | | |
| Depth to Bottom (m): | 14.73 | <p>(DTB - DTW) x 2 (for 2" well diameter) = 1 well volume</p> <p>(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume</p> <p>2" casing has 0.16 USgal/ft or 2.032 l/m</p> <p>1" casing has 0.04 USgal/ft or 0.508 l/m</p> <p>8" sand pack has 0.73 USgal/ft or 9.271 l/m</p> <p>6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m</p> | Time (5) min. interval (24h) | 13:06 | 13:15 | 13:20 | 13:25 | 13:30 | 13:35 |
| Submerged Tubing Depth (m): | 14.00 | | Depth (m) | 7.36 | 7.59 | 7.79 | 8.0 | 8.01 | 8.01 |
| Well Stick-up Height (m): | 0.99 | | Temperature (°C) | 3.1 | 3.0 | 2.9 | 2.8 | 2.8 | 2.8 |
| Estimated Water Volume (L): | 17.2 | | pH | 6.0 | 6.0 | 6.01 | 5.89 | 5.89 | 5.88 |
| | | | Cond. (µs/cm) | — | | | | | |
| | | | Specific Cond. (µs/cm) | 201 | 193 | 189 | 149 | 149 | 151 |
| | | | Redox (mV) TDS (µM) | 101 | 92 | 89 | 81 | 80 | 80 |
| | | | DO (mg/L) | — | | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | Turbid → Clear → | | | | | |
| | | | Interval Purge Volume (L) | 20 | 25 | 20 | 20 | 20 | 55 |
| | | | Cumulative Purge Volume (L) | 10 | 20 | 30 | 40 | 50 | 55 |
| | | | Total Purge Volume: | 55L | | | | | |
| Method | | | | | | | | | |
| Watertra | Peristaltic | | Disp. Bailer | Subm. Pump | Air Lift | Other | | | |
| X | | | | | | | | | |
| Analysis | X → Air Lift | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | |
| SRK05-SP-5 | Gen. Chem
Total Metals
Diss. Metals | 13:40 | Plastic
1L, 2x 125mL | ☒ Yes
☐ No | 8.54 | See back | | | |



Sample Site (Con't): SRK05-SP-5

Field UTM Location: Zn: 08V Easting: 0584467 Northing: 6913133 WP007

Photo Nos.: 4415

| Final Groundwater Field Parameters - Following Purge | |
|--|--------------|
| Time (hh:mm; 24h) | <u>12:35</u> |
| Temperature (°C) | <u>2.8</u> |
| DO (mg/L) TDS (ppm) | <u>80</u> |
| Specific Cond. (µs/cm) | <u>151</u> |
| Cond. (µs/cm) | <u>—</u> |
| pH | <u>5.88</u> |
| Redox (mV) | |
| Turbidity (NTU) | <u>8.54</u> |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued From Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| Repaired the broken well casing (2"), redeveloped the well.
Consumables: 2" rubber coupling
1 bag of cement |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|--------------------------------------|---------------------------------------|--|---|--|------|------|-----|
| Well Number: | SRK05-SP-4A | Project Number: | 1343-005.02 | Date: | 9 Sep 2014 | | | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RH | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | sun 29°C | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☒ ID: NONE. | Recovery: | ☐ Good ☐ Bad | | | |
| Purge Method | | | | | | | | |
| ☒ Water | ☐ Peristaltic | ☐ Disp. Bailer | ☐ Subm. Pump | ☐ Air Lift | ☐ Other | | | |
| w/ HYDROCLIFT | | | | | | | | |
| Initial Depth to Water (m): | 4.522 * | Calculations: | Purge Start Time: | 17-53 | Purge End Time: | | | |
| Depth to Bottom (m): | 22.40 * | 17.88.
x 2
= 35.76 | Time () min. interval (24h) | 18-00 | 18-05 | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | * | | | | |
| Well Stick-up Height (m): | 0.59 | | Temperature (°C) | 2.3 | 2.1 | 2.0 | | |
| Estimated Water Volume (L): | | | pH | 5.97 | 5.99 | 5.94 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | | | | | |
| | | | Specific Cond. (µs/cm) | 1382 | 1377 | 1383 | 1392 | |
| | | | Redox (mV) | TDS ppm | 703 | 701 | 705 | 708 |
| | | | DO (mg/L) | — | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | | | | |
| | | | Interval Purge Volume (L) | 8 | 8 | 8 | | |
| | | Cumulative Purge Volume (L) | 8 | 16 | 24 | | | |
| | | Total Purge Volume: | | | | | | |
| Method: ☒ Water ☐ Peristaltic ☐ Disp. Bailer ☐ Subm. Pump ☐ Air Lift ☐ Other | | | | | | | | |
| Analysis | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | | |
| SRK05-SP-4A | TOTAL METALS
DISSOLVED METALS | 18-15
- 18-20 | 1x 1L
2x 125 mL | ☐ Yes
☐ No | 4.0 | | | |
| | | | | | *BROKEN CASING PVC | | | |

GEN CHEM

SEE OVER

*measured from bottom of measurement curve



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584506 Northing: 6913110

Photo Nos.: 4422-4423

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| | |
|---|--|
| General Notes (Condition of well or other features): | |
| <p>PVC BROKEN. DEPTHS TAKEN FROM LOWER CASING →</p> <p>MEASUREMENTS TAKE HERE →</p> <p>← CASING</p> <p>LID NOT SHOWN</p> <p>GROUND.</p> <p>PVC</p> <p>0.624</p> | |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--------------------------------|--|--|---|---|-------------------|
| Well Number: | P09-SISS | Project Number: | 1343-005.02 | Date: | 09 SEPT 2014 | |
| Approximate Date Drilled: | UNKNOWN | Client: | YG-AAM | Sampler: | RM + GMR | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT, SUNNY | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☐ Good ☒ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| Initial Depth to Water (m): | 3.596 | Calculations: | Purge Start Time: | 16-04 | Purge End Time: | |
| Depth to Bottom (m): | 4.55 | $4.55 - 3.596 = 0.954$
$0.954 \times 2 = 1.908$ | Time () min. interval (24h) | 16-10 | 16:14 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 3.91 | 4.07 | 4.22 |
| Well Stick-up Height (m): | 1.09 | | Temperature (°C) | 7.0 | 7.1 | 6.9 |
| Estimated Water Volume (L): | 1.9 | | pH | 6.44 | 6.73 | 7.05 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 74000 | >400 | → |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 72000 | 72000 | → |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SOME TURB. | → | → |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.5 | 0.5 | 0.5 |
| | | Cumulative Purge Volume (L) | 0.5 | 1.0 | 1.5 | |
| | | Total Purge Volume: | 2.0 | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | X | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| P09-SISS | TOTAL METALS
DISSOL. METALS | 16.22 | PLASTIC
1L 2X 125ml | ☐ Yes
☐ No | 17.4 | STRAIGHT FORWARD. |

NEEDED TO WAIT FOR
SOME RECHARGE.
TO COMPLETE GEN. CAEM.
AT. 16.28.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584515

Northing: 6913110 WP 010

Photo Nos.: 4420✓

| Final Groundwater Field Parameters (Following Purge) | |
|--|--------|
| Time (hh:mm; 24h) | 16-22 |
| Temperature (°C) | 6.9 |
| DO (mg/L) | — |
| Specific Cond. (µs/cm) | > 4000 |
| Cond. (µs/cm) | — |
| pH | 7.05 |
| Redox (mV) TDS (ppm) | > 2000 |
| Turbidity (NTU) | 17.4 |
| DO (mg/L) | — |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| No CONSUMABLES. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|----------------------|---|--|--|-----------------|-----------------|--|----------|
| Well Number: | P09-SIS4 | | Project Number: | 1343-005.02 | | Date: | 9 Sep 2014 | |
| Approximate Date Drilled: | UNKNOWN | | Client: | YG-AAM | | Sampler: | RM + GMR | |
| Piezometer Diameter / Screen Length: | 2" | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | Sunny ~82 | |
| CHV (ppm / % LEL): | — | | Duplicate Collected: | ☐ ID: — | | Recovery: | ☒ Good ☒ Bad | |
| Purge Method | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift |
| | | | | | | | | |
| Initial Depth to Water (m): | 4.040 | Calculations: | Purge Start Time: | 15-34 | | Purge End Time: | 15-47 | |
| Depth to Bottom (m): | 4.440 | $4.440 - 4.04 = 0.4$
$\times 2 = 0.8L$ | Time () min. interval (24h) | 15-34 | 15-40 | 15-46 | | |
| Submerged Tubing Depth (m): | | | Depth (m) | 4.16 | 4.27 | 4.34 | | |
| Well Stick-up Height (m): | 0.95 | | Temperature (°C) | 6.5 | 6.01 | 6.5 | | |
| Estimated Water Volume (L): | 0.8 | | pH | 7.05 | 7.05 | 7.05 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | — | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | > 4000 7400 → | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 7200 7200 → | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | Clear → → | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.5 | 0.5 | 0.5 | | |
| | | | Cumulative Purge Volume (L) | 0.5 | 1.0 | 1.5 | | |
| | | | Total Purge Volume: | 1.5 | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| Analysis | | ✓ | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | |
| P09-SIS4 | TOTAL M. DISSOLVED M | 15-47 | PLASTIC 1L 2X 125ML | ☒ Yes
☐ No | 12.0 | | STRAIGHT FORWARD. | |

GEN CHEM. → 16-32

NEEDED TO COMPLETE
GEN CHEM AT 16-32
(NEEDED TO RECHARGE)



Sample Site (Con't): _____

Field UTM Location: Zn: 08V. Easting: 0584512 Northing: 6913107 WP009

Photo Nos.: 4419. (GMR)

| Final Groundwater Field Parameters (Following Purge) | |
|--|---------|
| Time (hh:mm; 24h) | 15-47 |
| Temperature (°C) | 6.5 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | > 4000 |
| Cond. (µs/cm) | |
| pH | 7.05 |
| Redox (mV) Redox ^{NO TDS (PPM)} | > 2000. |
| Turbidity (NTU) | 12-0 |
| DO (mg/L) | / |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| NO CONSUMABLES. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|-----------------------|---|--|---|---|---|-------|-------|
| Well Number: | P09-5151 | Project Number: | 1343-005.02 | Date: | SEPT 9 2014 | | | |
| Approximate Date Drilled: | UNKNOWN | Client: | YG-AAM | Sampler: | GMR + RM | | | |
| Piezometer Diameter / Screen Length: | / | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT, SUNNY 14°C | | | |
| CHV (ppm / % LEL): | / | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☐ Good ☒ Bad | | | |
| Purge Method | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | |
| Initial Depth to Water (m): | 46 4.600 | Calculations: | Purge Start Time: | 12-24 | Purge End Time: | | | |
| Depth to Bottom (m): | 6.555 | $6.555 - 4.60 = 1.95$
$\times 2 = 3.9 \text{ L}$ | Time () min. interval (24h) | 12-32 | 12-36 | 12-45 | 12-51 | 12-55 |
| Submerged Tubing Depth (m): | 5 | | Depth (m) | 4.76 | 5.28 | 5.34 | 5.35 | 5.34 |
| Well Stick-up Height (m): | 0.92 985 | | Temperature (°C) | 1 | 6.4 | 6.3°C | 6.1 | 6.4 |
| Estimated Water Volume (L): | 3.9 | | pH | | 6.33 | 6.43 | 6.44 | 6.51 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | | 74000 | 74000 | 74000 | 74000 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) TDS (PPM) | | 72000 | 72000 | 72000 | 72000 |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SIGHTLY TURBID → | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 1.5 | 1 | 0.5 | |
| | | Cumulative Purge Volume (L) | | 2.5 | 3.5 | 4.0 | | |
| | | Total Purge Volume: | | | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | |
| Analysis | | ✓ | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | |
| P09 5151 | TOTAL M
DISSOLV. M | 13-07
16-50 | PLASTIC
1L + 125 | ☐ Yes
☐ No | 20.0 | DRY AT 13-11. EXTENDED DEPTH OF TUBING. | | |

GEN CHEM
12-24

NEED TO RETURN TO WELL.
16-50. HAD TO WAIT
FOR RECHARGE.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584478

Northing: 6913128 (WP005)

Photo Nos.: 4416 (GMR)

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| NO CONSUMABLES
PERI PUMP. W/ BATTERY. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--------------------------------------|------------------------------|---|--|---|---|--|-------|-------|
| Well Number: | SRK05-SP4B | Project Number: | 1343-005.02 | Date: | 09 SEPT 2014 | | | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RM | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Sunny ~9°C | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☒ ID: — | Recovery: | ☒ Good ☐ Bad | | | |
| Purge Method | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | |
| | X | | | | | | | |
| Initial Depth to Water (m): | 4.025 | Calculations: | Purge Start Time: | 17-15 | Purge End Time: 17-36 39 | | | |
| Depth to Bottom (m): | 4.765 | <p>0.74</p> <p>X 1.48 L</p> <p>(DTB - DTW) x 2 (for 2" well diameter) = 1 well volume</p> <p>(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume</p> <p>2" casing has 0.16 USgal/ft or 2.032 l/m</p> <p>1" casing has 0.04 USgal/ft or 0.508 l/m</p> <p>8" sand pack has 0.73 USgal/ft or 9.271 l/m</p> <p>6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m</p> | Time () min. interval (24h) | 17-20 | 17-25 | 17-30 | 17-35 | 17-38 |
| Submerged Tubing Depth (m): | | | Depth (m) | * | * | * | * | |
| Well Stick-up Height (m): | 0.84 | | Temperature (°C) | 7.1 | 5.5 | 5.2 | 5.0 | 4.9 |
| Estimated Water Volume (L): | 1.48 | | pH | 6.14 | 6.09 | 6.03 | 5.98 | 5.97 |
| | | | Cond. (µs/cm) | | | | | |
| | | | Specific Cond. (µs/cm) | 74000 | → 74000 | 74000 | 74000 | 74000 |
| | | | Redox (mV) TDS (ppm) | 72000 | → 72000 | 72000 | 72000 | 72000 |
| | | | DO (mg/L) | — | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR | | | |
| | | | Interval Purge Volume (L) | 0.5 | 0.5 | 0.5 | 1 | 0.5 |
| | | Cumulative Purge Volume (L) | 0.5 | 1 | 1.5 | 2.5 | 3.0 | |
| | | Total Purge Volume: | | | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| Analysis | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | |
| SRK05-SP-4B | TOTAL METALS
DISS. METALS | 17-40 | PLASTIC
1L + 125mL | ☐ Yes
☐ No | 5.54 | * COULD NOT REINSERT TAPE
DUE TO BROKEN CASING. | | |

GEN. CHEM.

COMPLETED
GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584506 Northing: 6913110

Photo Nos.: 4421 (GMR)

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front Page if Applicable | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 5 m x 3/16" 16 TUBING.
8" SILICON TUBING
BROKEN PVC AT SURFACE. INITIAL MEASUREMENTS TAKEN FROM
TOP OF PVC. (UNLIKE 4A) |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|------------------------|---|--|---|---|---------|
| Well Number: | P09-S153 | Project Number: | 1343-005.02 | Date: | 9 Sep 2014 | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RH + GMR | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | sunny ~ 80° | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☐ ID: — | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | X | | | | | |
| Initial Depth to Water (m): | 3.910 | Calculations: | Purge Start Time: | 14-55 | Purge End Time: | |
| Depth to Bottom (m): | 4.605 | $4.605 - 3.910 = 0.695$
$\times 2 = 1.39L$ | Time () min. interval (24h) | 15-00 | 15-06 | |
| Submerged Tubing Depth (m): | 4.5 | | Depth (m) | 3.96 | 3.95 | 3.96 → |
| Well Stick-up Height (m): | 1.04 | | Temperature (°C) | 6.4 | 6.0 | 6.0 |
| Estimated Water Volume (L): | 1.39 | | pH | 5.79 | 7.05 | 7.05 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1195 | 1362 | 1412 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 630 | 693 | 717 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR | CLEAR → |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 1 | 0.5 |
| | | Cumulative Purge Volume (L) | 1.5 | 2.5 | 3.0 | |
| | | Total Purge Volume: | | | | |
| Method: Waterra Peristaltic Disp. Bailer Subm. Pump Air Lift Other | | | | | | |
| Analysis: ☒ w/BATTERY | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| P09-S153 | T. METALS
D. METALS | 15-17 | PLASTIC
1L + 125ml | ☐ Yes
☐ No | 0.95 | |
| | | | | | STRAIGHT FORWARD. | |

GEN. CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584493 Northing: 6913417 WP 008.

Photo Nos.: ~~448~~ 4418

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 15-17 |
| Temperature (°C) | 5.9 |
| DO (mg/L) | / |
| Specific Cond. (µs/cm) | / |
| Cond. (µs/cm) | 1323 |
| pH | 7.05 |
| Redox (mV) TDS (ppm) | 670 |
| Turbidity (NTU) | 0.95 |
| DO (mg/L) | / |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| NO CONSUMABLES. |

FBZ → Field
Blank
Collected



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|---------------------|----------------------|---------------------------------|---|---|-------------|
| Well Number: | PO9-S152 | Project Number: | 1343-005.02 | Date: | SEPT 9 '14 | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | GMR + RM | |
| Piezometer Diameter / Screen Length: | — | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT, CLEAR, ~ 11°C | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☐ ID: — | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| Initial Depth to Water (m): 3.920 | | | | | | |
| Depth to Bottom (m): 6.325 | | Calculations: | | Purge Start Time: 14-06 | | |
| Submerged Tubing Depth (m): | | 6.325 | | Purge End Time: | | |
| Well Stick-up Height (m): 1.159 | | - 3.920 | | Time () min. interval (24h) 14-09 14-15 14-20 14-30 14-37 | | |
| Estimated Water Volume (L): 4.81 | | = 2.405 | | Depth (m) 3.96 3.96 3.96 3.96 3.96 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | x 2 | | Temperature (°C) 6.8 6.6 6.7 6.6 6.6 | | |
| (DTB - DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | = 4.81 L | | pH 6.47 5.80 5.56 5.50 5.6 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | | Cond. (µs/cm) 449 | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | | Specific Cond. (µs/cm) 449 1304 1310 1282 1214 | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | | Redox (mV) TDS (PPM) 294 668 654 651 621 | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | | DO (mg/L) | | |
| | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) V. Slightly TURBID Clear | | |
| | | | | Interval Purge Volume (L) 0.5 0.5 1.5 1 1.5 | | |
| | | | | Cumulative Purge Volume (L) 0.5 1.0 2.5 3.5 5 | | |
| | | | | Total Purge Volume: | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| PO9 S152 | TOTAL M. DISSOLV. M | 14-42 | PLASTIC 1L + 125ml | ☒ Yes ☐ No | 2.15 | CLEAR WATER |

GEI CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584487

Northing: 6913125 WP 006.

Photo Nos.: 4417.

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----------------|
| Time (hh:mm; 24h) | 14-42 - |
| Temperature (°C) | 6.6 |
| DO (mg/L) | ✓ |
| Specific Cond. (µs/cm) | 1214 |
| Cond. (µs/cm) | 1214 |
| pH | 5.6 |
| Redox (mV) TDS (ppm) | 621 |
| Turbidity (NTU) | 2.15 |
| DO (mg/L) | N/A. |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front Page (if required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

No CONSUMABLES.
PERIST. PUMP. + BATTERY.



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|---|--|---|---|
| Well Number: | P09-C2 | Project Number: | 1343-005.02 | Date: | 10 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB/AM |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool, cloudy ~ 30C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: No | Recovery: | ☒ Good ☐ Bad
→ a lower purge rate |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| hydro lift | | | | | |
| Initial Depth to Water (m): | 0.625 | Calculations: | Purge Start Time: | 0925 | Purge End Time: 0950 |
| Depth to Bottom (m): | 64.580 | $64.5 - .5 = 64$
$64 \times 21/m = 128L$ | Time (min) interval (24h) | 0935 | 0940 |
| Submerged Tubing Depth (m): | ~ 62 | | Depth (m) | 8.104 | 7.492 |
| Well Stick-up Height (m): | 0.87 | | Temperature (°C) | 4.1 | 4.1 |
| Estimated Water Volume (L): | ~ 128L | | pH | 6.44 | 6.47 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1623 | 1613 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 2702 | 2687 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / / / / / | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / / / / / | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | faint light grey, slight turbid, no oil | same as previous mostly clear, no oil |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 30 | 10 |
| | | Cumulative Purge Volume (L) | 30 | 40 | |
| | | Total Purge Volume: | 50L | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | hydro lift | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P09-C2 | Dis Metals
total Metals
Gen Chem | 0952 -
0958 | 1x 125ml plastic
1x 2L plastic | ☒ Yes
☒ No | 23.4 NTU @ time of sample |
| | | | | | Dis Metals field filter eq |

Same equipment as P01-01A



Sample Site (Con't): P09-C2

Field UTM Location: Zn: 08 V Easting: 0580012 Northing: 6914402 $\pm 3m$ AN EPS Photo Nos.: 31-35 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) | |
|--|--|
| <p>PVC 2" casing w/ho cap (we added one) inside metal stickup - metal cap. → red oxidized staining/material inside well casing</p> <p>Stick up damaged/loose, leaning and almost able to pull out from ground, concrete base broken + loose</p> <p>Stick up + PVC on angle ~ 20° from vertical, all measurements made along angle</p> <p>5/8" water in well already, used for sampling</p> <p>→ precarious to use hydro lift, stick up should be reinstalled/ repaired</p> | |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|----------------------------------|-----------------------------|--|--|---|
| Well Number: | S2A S2A | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RM + CMR |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST |
| CHV (ppm / % LEL): | ✓ | Duplicate Collected: | ☐ ID: — | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | W/ BATTERY | | | | |
| Initial Depth to Water (m): | 5.232 | Calculations: | Purge Start Time: | 11-36 | Purge End Time: 12-27 |
| Depth to Bottom (m): | 12.67 | $7.438 \times 2 = 14.876L$ | Time () min. interval (24h) | 11-47 | 12-00 |
| Submerged Tubing Depth (m): | | | Depth (m) | 5.25 | 5.25 |
| Well Stick-up Height (m): | 1.22 | | Temperature (°C) | 2.7 | 2.5 |
| Estimated Water Volume (L): | 15 | | pH | 8.09 | 5.95 |
| (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | | |
| | | | Specific Cond. (µs/cm) | 2088 | 2141 |
| | | | Redox (mV) TDS (PPM) | 1064 | 1089 |
| | | | DO (mg/L) | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | VERY TURBID | TURBID |
| | | | Interval Purge Volume (L) | 2.5 | 4 |
| | | Cumulative Purge Volume (L) | 2.5 | 6.5 | |
| | | Total Purge Volume: | | | |
| Method: Waterra Peristaltic Disp. Bailer Subm. Pump Air Lift Other
Analysis: ✓ W/ BATTERY | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| S2A | TOTAL METALS
DISSOLVED METALS | 12-27 | PLASTIC
1L + 2x125 mL | ☒ Yes
☐ No | 18.5 |
| | | | | | VERY TURBID AT START. |

GEN CHEM.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584471 Northing: 6913123

Photo Nos.: 4428

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 12-27 |
| Temperature (°C) | 2.6 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 2125 |
| Cond. (µs/cm) | |
| pH | 5.96 |
| Redox (mV) TDS (ppm) | 1090 |
| Turbidity (NTU) | 18.5 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time (___) minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 14 m CF PERI 3/4" TUBING
8" SILICON TUBING |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|------------------------------|-----------------------------|--|--|---|-------|----------------|-------|
| Well Number: | S2B | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 | | | |
| Approximate Date Drilled: | / | Client: | YG-AAM | Sampler: | RM + GMR | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST.
5°C | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad | | | |
| Purge Method | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | |
| W/ BATTERY | | | | | | | | |
| Initial Depth to Water (m): | 4.457 | Calculations: | Purge Start Time: | 10-52 | Purge End Time: 11-28 | | | |
| Depth to Bottom (m): | 7.065 | 2.608
x 2
S-216 L | Time () min. interval (24h) | 10-59 | 11-05 | | | |
| Submerged Tubing Depth (m): | ~6.5 | | Depth (m) | 4.92 | 5.13 | 5.30 | | |
| Well Stick-up Height (m): | 0.54 | | Temperature (°C) | 2.6 | 2.5 | 2.4 | | |
| Estimated Water Volume (L): | 5.21 | | pH | 5.9 | 5.89 | 5.86 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | | | | | |
| | | | Specific Cond. (µs/cm) | 2708 | 2719 | 74000 | 74000 | |
| | | | Redox (mV) | TDS (PPM) | 1381 | 1386 | 72000 | 72000 |
| | | | DO (mg/L) | | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SOME TURB. | → | → | CLEAR
CLEAR | |
| | | | Interval Purge Volume (L) | 1.5 | 1.5 | 1.5 | | |
| | | Cumulative Purge Volume (L) | 1.5 | 3.0 | 4.0 | | | |
| | | Total Purge Volume: | 3 | | | | | |
| Method: Waterra Peristaltic Disp. Bailer Free Bailer Subm. Pump Air Lift Other | | | | | | | | |
| W/ BATTERY | | | | | | | | |
| Analysis | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | | |
| S2B | TOTAL METALS
DISS. METALS | 11-28 | PLASTIC
1L + 2x12.5L | ☒ Yes
☐ No | 20.3 | | | |
| | | | | | POTENTIAL PRECIPITATE IN WATER - SROF? | | | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584471 Northing: 6913123 (WP14)

Photo Nos.: 4428

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 11-28 |
| Temperature (°C) | 2.5 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | >4000 |
| Cond. (µs/cm) | |
| pH | 5.85 |
| Redox (mV) TDS (PPM) | >2000 |
| Turbidity (NTU) | 20.3 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data – Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

NO CONSUMABLES



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | | | |
|---|--------------------------------------|-------------------------------------|--|---|---|----------|---------|-------------|--------------|--------------|------------|----------|-------|----------|--|-------------------------------------|--|--|--|--|--|
| Well Number: | MW14-11 | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 | | | | | | | | | | | | | | | | |
| Approximate Date Drilled: | JULY 2014 | Client: | YG-AAM | Sampler: | RM + GMR | | | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
10°C | | | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | | | |
| w/ BATTERY | | | | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 1.845 | Calculations: | Purge Start Time: | 17-16 | Purge End Time: 17-40 | | | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 4.455 | $2.71 \times 2 = 5.42 \text{ L}$ | Time () min. interval (24h) | 17-22 | 17-28 | | | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | 2-16 | 2-42 | | | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.79 | | Temperature (°C) | 3-1 | 2-8 | | | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 5.42 | | pH | 6.92 | 6.97 | | | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 343 | 340 | | | | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 343 | 340 | | | | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 1 | | | | | | | | | | | | | | | | |
| | | Cumulative Purge Volume (L) | 1 | 2 | | | | | | | | | | | | | | | | | |
| | | Total Purge Volume: | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Steel Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td>☒</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | Analysis | | ☒ | | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| Analysis | | ☒ | | | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | | | |
| MW14-11 | T. METALS
D. METALS
GEN. CHEM. | 17-40 | PLASTIC
1X 1L
2X 125ML | ☐ Yes
☐ No | 9-34 | | | | | | | | | | | | | | | | |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584677 Northing: 6913028 (WP19) Photo Nos.: 4434

| Final Groundwater Field Parameters (Following Purge) | |
|--|----------------|
| Time (hh:mm; 24h) | 17-40 |
| Temperature (°C) | 2.8 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 670 |
| Cond. (µs/cm) | 670 |
| pH | 6.96 |
| Redox (mV) | |
| Turbidity (NTU) | 9-34 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 5.5 m 3/16" PERI TUBING
8" SILICON TUBING |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | |
|---|------------------------------------|--------------------------------------|--|--|---|----------------------------|----------|-------------|--------------|------------|----------|-------|----------|--|------------|--|--|--|--|
| Well Number: | MW14-08 | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 | | | | | | | | | | | | | | |
| Approximate Date Drilled: | JULY 2014 | Client: | YG-AAM | Sampler: | RM + GMR | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
10°C | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | |
| Waterira | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| | ✓ w/ BATTERY | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 1.687 | Calculations: | Purge Start Time: | 1638 | Purge End Time: 1700 | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 3.27 | <p>1.59</p> <p>X2</p> <p>= 3.18L</p> | Time () min. interval (24h) | 1643 | 1649 | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | 1.90 | 1.94 | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.96 | | Temperature (°C) | 6.8 | 6.7 | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 3.18 | | pH | 6.61 | 6.69 | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 578 | 547 | | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 293 | 273 | | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | TURBID | → | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 2 | | | | | | | | | | | | | | |
| | | Cumulative Purge Volume (L) | 1 | 3 | | | | | | | | | | | | | | | |
| | | Total Purge Volume: | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterira</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td>w/ BATTERY</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Waterira | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | Analysis | | w/ BATTERY | | | | |
| Method | Waterira | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | |
| Analysis | | w/ BATTERY | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | |
| MW14-08 | T. METALS
D. METALS
GEN CHEM | 1700
1600 | PLASTIC
1X 16
2X 125 mL | ☒ Yes
☐ No | - 5 NTU | SULPHUR SMELL.
ORGANICS | | | | | | | | | | | | | |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584701 Northing: 6913035 LP18. Photo Nos.: 4433

| Final Groundwater Field Parameters (Following Purge) | |
|--|------------|
| Time (hh:mm; 24h) | 1700 |
| Temperature (°C) | 6.6 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 505 |
| Cond. (µs/cm) | |
| pH | 6.70 |
| Redox (mV) 105 (ppm) | 256 |
| Turbidity (NTU) 10 | -5 NTU (?) |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Page 1 (Required) | | | | | |
|--|-----|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | 6.6 | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 4 m x 3/16" PERI TUBING.
8" SILICON TUBING. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--|--|--|---|--|---------------------------|
| Well Number: | SRK08-11A | Project Number: | 1343-005.02 | Date: | 10 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AS AN | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool cloudy windy ~30C | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: NO | Recovery: | ☒ Good ☐ Bad @ low flow | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| a low flow | | | | | | |
| Initial Depth to Water (m): | 0.765 | Calculations: | Purge Start Time: | 1650 | Purge End Time: 1710 | |
| Depth to Bottom (m): | 12.467 | 12.5 - .75
= 11.75
x 2 L/m
~ 23.5 L | Time (5) min. interval (24h) | 1655 | 1700 | |
| Submerged Tubing Depth (m): | ~11.5 | | Depth (m) | 0.836 | 0.831 | 0.840 |
| Well Stick-up Height (m): | 0.69 | | Temperature (°C) | 3.5 | 3.4 | 3.4 |
| Estimated Water Volume (L): | ~23.5 | | pH | 6.99 | 6.99 | 6.98 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | 748 | 742 | 745 |
| | | Specific Cond. (µs/cm) | 1270 | 1265 | 1269 | |
| | | Redox (mV) | | | | |
| | | DO (mg/L) | | | | |
| | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | Same | → | |
| | | Interval Purge Volume (L) | 1.5 | 1.5 | 1.5 | 1.5 |
| | | Cumulative Purge Volume (L) | 1.5 | 3 | 4.5 | 6 |
| | | Total Purge Volume: | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift |
| Analysis | a low flow | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| SRK08-11A | Dis Metals
Total Metals
Gen Chem | 17:12 -
17:17 | 1 x 125 ml plastic
1 x 1 L plastic | ☒ Yes
☒ No | 1.52 NTU @ time of sample | Dis Metals field filtered |

b to c



Sample Site (Con't): SRK 08-11A

Field UTM Location: Zn: 08 U Easting: 0582583 Northing: 6914571 ±2m AW EPS

Photo Nos.: 55-60 AW Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DQ (mg/L) | |
| | |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| 2" PVC w/cap + metal stick up w/cap - all in good condition
Both 1/4" + silicon + 5/8" in well - used 1/4" for low flow sampling
Same equipment as for SRK 08-11 B |



Same equipment as for P01-01A, except per pump instead of hydro lift



Sample Site (Con't): SPK08-11 B

Field UTM Location: Zn: 060 Easting: 0582587 Northing: 6914571 ± 2m AN EPS Photo Nos.: 55-60 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC w/cap + metal stick up w/cap. all in good condition
1/4" tubing + silicon already in well |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|--|----------------------|--|--|--|------------------------------------|-------|
| Well Number: | SRK08-10A | Project Number: | 1343-005.02 | Date: | 10 Sept 2014 | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AS AN | | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Cool cloudy windy ~30C | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ No | Recovery: | ☐ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| manual | | | | | | | |
| Initial Depth to Water (m): | 10.344 | Calculations: | Purge Start Time: | 15:15 | Purge End Time: | 15:50 | |
| Depth to Bottom (m): | 13.762 | 13.75 - 10.35 | Time (7 min interval (24h)) | 15:25 | 15:40 | 15:50 | |
| Submerged Tubing Depth (m): | ~13m | = 3.45 | Depth (m) | 10.905 | 11.120 | 11.398 | |
| Well Stick-up Height (m): | 0.73 | + 2.4m | Temperature (°C) | 3.2 | 3.3 | 3.0 | |
| Estimated Water Volume (L): | ~6.9 L | = 6.9 L | pH | 6.41 | 6.47 | 6.39 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 2253 | 2278 | 2263 | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3854 | 3891 | 3887 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | light brown, grey, turbid, no o/s | same previous | light grey, faintly turbid, no o/s | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 7 | 7 | 7 | |
| | | | Cumulative Purge Volume (L) | 7 | 14 | 21 | |
| | | | Total Purge Volume: | 21 L | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | manual | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| SRK08-10A | Dis Metals
total Metals
Gen Chem | 15:55-
15:59 | 1x125ml plastic
" "
1x 1L plastic | ☒ Yes
☐ No | 35.1 NTU @ time
of sample (post purge) | Dis Metals field
filtered | |

Same VST + water level tape as P01-01A

☒ Drawdown
↓
See
purge
details
↓
3 well volumes
purged,
relatively
stable
parameters
and turbidity
~50 NTU
= OK to
sample
after
purge



Sample Site (Con't): SRK08-10A

Field UTM Location: Zn: 08 U Easting: 058 2718 Northing: 6914 052 ±4m AN GPS Photo Nos.: 51-55 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC with cap inside metal stick w/ cap - all good condition
5/8" already in place in well |

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|--|
| Well Number: | P05-01-03 | Project Number: | 1343-005.02 | Date: | 10 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB An |
| Piezometer Diameter / Screen Length: | 1/2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool, cloudy, windy ~ 30C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ 401 No | Recovery: | ☐ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | low flow | | | | |
| Initial Depth to Water (m): | 1.555 | Calculations: | Purge Start Time: | 14:25 | Purge End Time: |
| Depth to Bottom (m): | 17.765 | 17.75 - 1.55 | Time (3) min. interval (24h) | 14:28 14:31 14:34 14:37 | |
| Submerged Tubing Depth (m): | ~ 17m | = 16.25 | Depth (m) | not recorded, can't be measured, see over | |
| Well Stick-up Height (m): | 0.56 | = 12.5 L/m | Temperature (°C) | 6.7 6.8 6.8 6.7 | |
| Estimated Water Volume (L): | ~ 2.0 | = 2.03 | pH | 6.36 6.35 6.40 6.36 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 2314 2339 2339 2338 | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3560 3590 3585 3591 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | [wavy line] | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | [wavy line] | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, sulphur odour, no sheen | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.25 0.25 0.25 0.25 | |
| | | | Cumulative Purge Volume (L) | 0.25 0.5 0.75 1.0 | |
| | | | Total Purge Volume: | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P05-01-05 | Dis Metals
Total Metals
Gen Chem | 14:39
14:53 | 1x 125ml plastic
2x 2L plastic | ☒ Yes
☒ No | 14.2 NTU @ time of sample |
| | | | | | Dis Metals field filtered |

Same equipment as P03-09-9



Sample Site (Con't): POS-01-03

Field UTM Location: Zn: 08 0

Easting: 0580056

Northing: 6914505 $\pm 3m$ AN GPS

Photo Nos.: 46-50 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| ⊗ SEE PREVIOUS PAGE ⊗ | |
| | |

| Additional Purge Data — Continued From Front of Page (if required) | | | | |
|--|--|--|--|--|
| Time () minute interval: | | | | |
| Depth (m) | | | | |
| Temperature (°C) | | | | |
| pH | | | | |
| Cond. (µs/cm) | | | | |
| Specific Cond. (µs/cm) | | | | |
| Redox (mV) | | | | |
| DO (mg/L) | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | |
| Interval Purge Volume (L) | | | | |
| Cumulative Purge Volume (L) | | | | |
| Total Purge Volume | | | | |

General Notes (Condition of well or other features)

See notes for POS-01-05 re: well condition

Existing 1/2" PVC + silicon in place used to sample

⊗ Drawdown frequency not recorded, can't fit water level probe + 1/2" tubing in well at same time



| | | | | | | | | | |
|--|--|-----------------------------|---|---|--|-----------------|--------------------------------|---------------------------|--|
| Well Number: | P05-01-05 | Project Number: | 1343-005.02 | Date: | 10 Sept 2014 | | | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AR AN | | | | |
| Piezometer Diameter / Screen Length: | 1/2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool cloudy windy ~ 30C | | | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ Yes ☐ No | Recovery: | ☐ Good ☐ Bad | | | | |
| Purge Method | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | |
| | @ low flow | | | | | | | | |
| Initial Depth to Water (m): | 2.036 | Calculations: | Purge Start Time: | 13:52 | Purge End Time: | 14:04 | | | |
| Depth to Bottom (m): | 6.54% | 6.5 - 2.0 | Time () min. interval (24h) | 13:55 | 13:58 | 14:01 | 14:04 | | |
| Submerged Tubing Depth (m): | ~ 5.5 | = 4.5 | Depth (m) | @ not recorded, can't be measured, see over | | | | | |
| Well Stick-up Height (m): | 0.62 | x .125 l/m | Temperature (°C) | 6.8 | 6.9 | 6.9 | 6.8 | | |
| Estimated Water Volume (L): | ~ 5625 | = .5625 | pH | 6.49 | 6.45 | 6.44 | 6.42 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 2101 | 2110 | 2118 | 2113 | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3221 | 3236 | 3234 | 3241 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, sulphur odour, no sheen | same | | clear, sulphur odour, no sheen | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.25 | 0.25 | 0.25 | 0.25 | | |
| | | | Cumulative Purge Volume (L) | 0.25 | 0.5 | 0.75 | 1.0 | | |
| | | | Total Purge Volume: | 6.0 | | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | | |
| Analysis | | @ low flow | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | | Comments | |
| P05-01-05 | Dis Metals
Total Metals
Gen Chem | 1405-
14:22 | 1x125ml plastic
1x25 plastic | ☒ Yes
☒ No | 0.83 NTU @ time of sample | | | Dis Metals field filtered | |

Sample Site (Con't): PO5-01-05

Field UTM Location: Zn: 08 v Easting: 0580056 Northing: 6914505 $\pm$ 3m AW GPS Photo Nos.: 46-50 AW camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|---|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) |  |
| Turbidity (NTU) | |
| DO (mg/L) |  |
| | |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| <p>- 6 x 1/2" PVC in nested well w/ stick up protector + metal cap $\rightarrow$ individual wells have no caps, but are all well worked</p> <p>- all existing 1/4" PVC + silicon in place + used</p> <p>⊗ drawdown + recovery unknown, can't fit water level tape + 1/4" tubing in well at same time</p> |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | |
|--|--|------------------------------------|--|--|---|-------------------------------------|------------------|-------|-------|
| Well Number: | P03-09-9 | Project Number: | 1343-005.02 | Date: | 10 Sept 2014 | | | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | | | | |
| Piezometer Diameter / Screen Length: | ~1/2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Good cloudy ~ 40C | | | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ NO | Recovery: | ☒ Good ☐ Bad | | | | |
| Purge Method | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | |
| a low flow | | | | | | | | | |
| Initial Depth to Water (m): | 8.383 | Calculations: | Purge Start Time: | 1132 | Purge End Time: | | | | |
| Depth to Bottom (m): | 4.050 | 4.3 m x
~ .125 L/m
= 0.538 L | Time (3) min. interval (24h) | 1135 | 1138 | | | | |
| Submerged Tubing Depth (m): | ~ 7.75 | | Depth (m) | can't be measured - see reverse | | | | | |
| Well Stick-up Height (m): | 0.67 | | Temperature (°C) | 4.1 | 4.2 | 4.2 | | | |
| Estimated Water Volume (L): | ~ 0.538 | | pH | 6.78 | 6.74 | 6.72 | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | 190.5 | 188.4 | 183.7 | 183.4 | 184.2 | 184.4 |
| | | | Specific Cond. (µs/cm) | 316.7 | 309.6 | 304.9 | 304.2 | 305.7 | 305.9 |
| | | | Redox (mV) | [scribbles] | | | | | |
| | | | DO (mg/L) | [scribbles] | | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | brown, silty, turbid | light grey, slightly turbid | Same as previous, faint sulfur odor | Same as previous | | |
| | | | Interval Purge Volume (L) | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| | | | Cumulative Purge Volume (L) | 0.25 | 0.5 | 0.75 | 1.0 | 1.25 | 1.50 |
| | | | Total Purge Volume: | 1.5 L | | | 60 NTU | | |
| | | | | | | 64 NTU | | | |
| | | | Method: Waterra Peristaltic Disp. Bailer Subm. Pump Air Lift Other | | | | | | |
| Analysis: a low flow | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | |
| P03-09-9 | Dis Metals
Total Metals
Gen Chem | 12:45-
13:02 | 1x125ml plastic
1x125 plastic
1x1L plastic | ☐ Yes
☒ No | 45.0 NTU at time of sample | Dis Metals Field filtered | | | |

☒ Can't measure, see reverse
 ↓
 DTW post purge / pre sample = 4.031
 = no drawdown & very low flow = good recovery

Same equipment as P01-09A except per pump + ELR 102 water level (skinny)
 started sample collect at 11:59 but water too silty + turbid (water column disturbed by re-starting pump?)
 → proceed to purge P03-09-6 then come back to this sample after time to recharge + settle

Sample Site (Con't): P05-09-9 ↗ way point marked

Field UTM Location: Zn: 08 U Easting: 05 79948 Northing: 6914411 ± 4m AN GPS

Photo Nos.: 41-45 4W camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Page 1 (Required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features)

9 x 1/2" PVC wells + 1 larger HDPE well nested inside metal stick up. No PVCs have caps, but stick up has metal cover

⊗ Wells located down brushy overgrown road accessed from main road

↳ Individual wells poorly marked / I.D'd → found faint "9" marking on PVC w/ pore tubing already in place, measured DTB at 8.383 very close to DTB of 8.349 in scope of work

⊗ Drawdown can't be measured because a probe + 1/4" tubing won't fit in well together

↳ 1/4" already in well, just need to add 2' extension + 6" silicon



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|--|--|
| Well Number: | P03-09-6 | Project Number: | 1343-005.02 | Date: | 10 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN |
| Piezometer Diameter / Screen Length: | 1/2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Cool cloudy ~4°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: NO | Recovery: | ☐ Good ☐ Bad ☒ Unknown |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | @ low flow | | | | |
| Initial Depth to Water (m): | 3.321 | Calculations: | Purge Start Time: | 12:09 | Purge End Time: |
| Depth to Bottom (m): | 19.582 | 19.6-3.3 = 16.3 | Time (3) min. interval (24h) | 12:12 | 12:15 |
| Submerged Tubing Depth (m): | ~18 m | x ~0.125 L/m | Depth (m) | Sec | Reverse, not recorded |
| Well Stick-up Height (m): | 0.62 | ~2.0 L | Temperature (°C) | 4.6 | 4.5 |
| Estimated Water Volume (L): | ~2.0 | | pH | 6.80 | 6.77 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1060 | 1074 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1738 | 1766 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | [scribbles] | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | [scribbles] | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | mostly clear, faint light grey sulphur odour | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.25 | 0.25 |
| | | | Cumulative Purge Volume (L) | 0.25 | 0.50 |
| | | | Total Purge Volume: | 1.75 L | 57 NTU |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| Analysis | | @ low flow | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P03-09-6 | Dis Metals
Total Metals
Gen Chem | 12:31 -
12:43 | 1 x 125ml plastic
1 x 12 plastic | ☐ Yes
☒ No | 9.95 NTU @ time of sample |
| | | | | | Dis Metals field filtered |



Sample Site (Con't): P03-09-6

→ neppoint marked

Field UTM Location: Zn: 08 U Easting: 0579948

Northing: 6914411 $\pm 4m$

AN GPS

Photo Nos.: 41-45 AN Camera

| Final Groundwater Field Parameters - Following Purge | |
|--|------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| SEE PREVIOUS | PAGE |
| | |

| Additional Purge Data - Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

- ⊗ See P03-09-9 sheet for comments on well location, well condition + well ID
↳ checked DTB 19.58Z very close to Scope work DTB of 19.56B → well not marked w/ "6" but does have a piece orange flagging tape attached. No existing tubing in well added 20m + 6" silicon
- ⊗ no drawdown readings, can't fit water level probe in well w/ 1/4" tubing



GROUNDWATER SAMPLE COLLECTION SHEET

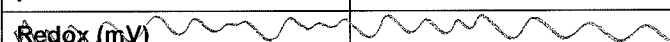
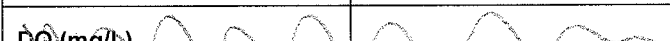
| | | | | | |
|--|--------------------------|--|--|---|---|
| Well Number: | P01-11 | Project Number: | 1343-005.02 | Date: | 10 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN |
| Piezometer Diameter / Screen Length: | 2" PVC/ unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool cloudy ~5°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: DUP 3 | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | c low flow | | | | |
| Initial Depth to Water (m): | 1.202 | Calculations: | Purge Start Time: | 10:15 | Purge End Time: 10:35 |
| Depth to Bottom (m): | 11.060 | $\sim 10m \times 2\frac{1}{2}m$
$= 20L$ | Time (5 min. interval (24h)) | 10:20 | 10:25 |
| Submerged Tubing Depth (m): | $\sim 10m$ | | Depth (m) | 1.205 | 1.215 |
| Well Stick-up Height (m): | 1.20 | | Temperature (°C) | 5.0 | 4.7 |
| Estimated Water Volume (L): | $\sim 20L$ | | pH | 6.63 | 6.58 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 2263 | 2249 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3660 | 3675 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | ~~~~~ | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | ~~~~~ | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | same faint sulphur odour |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 1.5 |
| | | Cumulative Purge Volume (L) | 1.5 | 3 | |
| | | Total Purge Volume: | 6L | 4.5 | 6 |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | c low flow | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P01-11 | Dis Metals | 10:37 - | 1x125ml plastic | ☒ Yes | 6.69 NTU a fine of sample |
| DUP 3 | Total Metals
Gen Chem | 10:50 | 1x1L plastic | ☒ No | |
| | | | | | Comments |
| | | | | | Dis metals field filtered |

↳ Same parameters + bottles as P01-11

Same equipment as P01-014 except per pump instead of hydro lift

Sample Site (Con't): PGI-11

Field UTM Location: Zn: 08V Easting: 0580092 Northing: 6914486 ± 3m AN EPS Photo Nos.: 36-40, AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|---|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) |  |
| Turbidity (NTU) | |
| DO (mg/L) |  |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data: Continued from Front of Page (If required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| 2" PVC w/ cap inside well stick up protector. Existing 5/8 tubing in well, but <u>added</u> 12m 1/4" tubing + 6" silicon in order to low flow sample |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | |
|--|--|-----------------------------|--|--|---|---|---------|-------------|--------------|------------|----------|-------|--|--|--------------|--|--|--|--|
| Well Number: | SRK05-SP-3B | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 | | | | | | | | | | | | | | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RM + GMR | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST.
9°C | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| | ✓ w/ BATTERY | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 4.064* | Calculations: | Purge Start Time: | 1436 | Purge End Time: 15-06 | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 13.305* | 9.24)
x 2
= 18.48 | Time () min. interval (24h) | 14-40 14-48 14-54 15-01 15-05 | | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | 4-10 4-10 4-10 4-10 4-10 | | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.9* | | Temperature (°C) | 3.2 2.4 1.9 1.8 1.8 | | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 18.48 | | pH | 5.74 5.67 5.71 5.72 5.68 | | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1010 1098 1138 1152 1145 | | | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (PPM) | 516 559 580 585 583 | | | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR —————→ | | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 2 2.5 2.0 2.5 | | | | | | | | | | | | | | | |
| | | Cumulative Purge Volume (L) | 1 3 5.5 7.5 10 | | | | | | | | | | | | | | | | |
| | | Total Purge Volume: | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td></td> <td></td> <td>✓ w/ BATTERY</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | ✓ w/ BATTERY | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | |
| | | ✓ w/ BATTERY | | | | | | | | | | | | | | | | | |
| Analysis | | | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | |
| SRK05-SP-3B | T. METALS
DISS METALS
GEN. CHEM. | 15-06. | 1 X PLASTIC 1L
2 X " 125ML | ☒ Yes
☐ No | 6.58 | * MEASURED FROM BOTTOM OF MONUMENT
SEE OVER. | | | | | | | | | | | | | |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 058 4543 Northing: 6913094 (WP016) Photo Nos.: 4431

| Final Groundwater Field Parameters (Following Purge) | |
|--|---------------|
| Time (hh:mm; 24h) | 15-06 |
| Temperature (°C) | 1-8 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 1145 |
| Cond. (µs/cm) | |
| pH | 5.68 |
| Redox (mV) | TDS (ppm) 583 |
| Turbidity (NTU) | 6.58 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| | |
|---|--|
| General Notes (Condition of well or other features) | |
| <div></div> | |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|---|--|---|
| Well Number: | P09-C3 | Project Number: | 1343-005.02 | Date: | 10 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AG AW |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool, cloudy ~3°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ No ☐ Yes | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| hydro lift | | | | | |
| Initial Depth to Water (m): | 1.486 | Calculations: | Purge Start Time: | 08:25 | Purge End Time: |
| Depth to Bottom (m): | 49.990 | 50 - 1.5 | Time (10 min. interval (24h)) | 08:35 08:45 08:55 09:00 | |
| Submerged Tubing Depth (m): | ~48m | = 48.5 | Depth (m) | 1.610 1.635 1.638 1.643 | |
| Well Stick-up Height (m): | 0.79 | x 2 L/m | Temperature (°C) | 4.0 4.0 4.0 3.9 | |
| Estimated Water Volume (L): | ~97 | = 97 L | pH | 6.65 6.65 6.68 6.69 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 856 851 846 845 | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1430 1421 1410 1411 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | [wavy line] | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | [wavy line] | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, sulphurates, no sheen | same |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 30 30 30 15 | |
| | | | Cumulative Purge Volume (L) | 30 60 90 105 | |
| | | | Total Purge Volume: | 105 | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | hydro lift | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P09-C3 | Dis Metals
Total Metals
Gen Chem | 0902 -
0907 | 1x 125ml plastic }
2x 2L plastic } | ☐ Yes
☒ No | 0.62 NTU @ time of sample |
| | | | | | Dis Metals field filtered |

b to c



Sample Site (Con't): P09-C3

Field UTM Location: Zn: 08 V Easting: 0579970 Northing: 6914316 ± 3m AWGPS Photo Nos.: 26-30 AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC w/ cap inside stick up protector. Protector + well casing on angle ~ 30° - measurements inc height taken on angle (not vertical). Existing 5/8" tubing in well used for sampling |

Same sample equipment as P01-01A



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--------------------------------------|--|-------------|--|--|-----------------|---------------|---|----------|
| Well Number: | 51A | | Project Number: | 1343-005.02 | | Date: | 10 Sep 2014 | |
| Approximate Date Drilled: | / | | Client: | YG-AAM | | Sampler: | Rm | |
| Piezometer Diameter / Screen Length: | 2" | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | cloudy 4°C | |
| CHV (ppm / % LEL): | / | | Duplicate Collected: | ☐ ID: | | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift |
| X - manual | | | | | | | | |
| Initial Depth to Water (m): | 4.743 | | Calculations: | Purge Start Time: | 14:00 | | Purge End Time: | 14:30 |
| Depth to Bottom (m): | 12.89 | | $(DTB - DTW) \times 2$ (for 2" well diameter) = 1 well volume

$(DTB - DTW) \times 1.1$ (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | Time () min. interval (24h) | 14:05 / 14:12 | | 14:21 | 14:30 |
| Submerged Tubing Depth (m): | | | | Depth (m) | | | | |
| Well Stick-up Height (m): | 1.34 | | | Temperature (°C) | 2.6 | | 1.9 | 1.8 |
| Estimated Water Volume (L): | 16.4 | | | pH | 6.0 | | 5.79 | 5.79 |
| | | | | Cond. (µs/cm) | | | | |
| | | | | Specific Cond. (µs/cm) | 2834 | | 3008 | 3028 |
| | | | | Redox (mV) | 1487 | | 1534 | 1539 |
| | | | | DO (mg/L) | | | | |
| | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | slightly turbid | | clearing | |
| | | | | Interval Purge Volume (L) | | | | |
| | | | Cumulative Purge Volume (L) | 5 | | 10 | 15 | |
| | | | Total Purge Volume: | 22 | | | | |
| Method | Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | |
| Analysis | X - manual, no way to set up hydro | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | |
| 51A | Gen. Chem.
Total Metals
Diss. Metals | 14:30 | Plastic
1L, 2x 125mL | ☒ Yes
☐ No | 61.4 | | | |



Sample Site (Con't): S1A

Field UTM Location: Zn: 08V Easting: 0584433 Northing: 6913114

Photo Nos.: 4430

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 14:30 |
| Temperature (°C) | 1.8 |
| DO (mg/L) TDS (ppm) | 1550 |
| Specific Cond. (µs/cm) | 3005 |
| Cond. (µs/cm) | |
| pH | 5.8 |
| Redox (mV) | |
| Turbidity (NTU) | 61.4 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| |
|--|
| General Notes (Condition of well or other features): |
| NO CONSUMABLES. |

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | |
|--|----------------------|-----------------------------|--|---|---|---|----------|-------------|--------------|------------|----------|-------|----------|-------------|--|--|--|--|--|
| Well Number: | SRK08-SBR4 | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 | | | | | | | | | | | | | | |
| Approximate Date Drilled: | UNKNOWN | Client: | YG-AAM | Sampler: | RM + GMR | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST ~ 9°C | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | 2.0 | Duplicate Collected: | ☐ ID: | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | |
| Watterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| ☒ HYDROLIFT | | | | | ☒ | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | BEFORE 7.621* | Calculations: | Purge Start Time: | 12-52 | Purge End Time: 13-21 | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 21.500 | 13.8
X 2
= 27.6 L | Time () min. interval (24h) | 13-00 | 13-11 | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | / | | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.80 | | Temperature (°C) | 2.1 | 2.1 | 1.7 | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 27.6 | | pH | 5.89 | 6.03 | 5.89 | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | |
| | | | Specific Cond. (µs/cm) | 74000 | 74000 | 74000 | 74000 | | | | | | | | | | | | |
| | | | Redox (mV) TDS (PPM) | 72000 | 72000 | 72000 | 72000 | | | | | | | | | | | | |
| | | | DO (mg/L) | | | | | | | | | | | | | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR | CLEAR | CLEAR | | | | | | | | | | | | |
| | | | Interval Purge Volume (L) | 10 | 16 | 8 | | | | | | | | | | | | | |
| | | Cumulative Purge Volume (L) | 10 | 26 | 34 | | | | | | | | | | | | | | |
| | | Total Purge Volume: | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Watterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td>W/HYDROLIFT</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Watterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | Analysis | W/HYDROLIFT | | | | | |
| Method | Watterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | |
| Analysis | W/HYDROLIFT | | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | |
| SRK08-SBR4 | T-METALS
D-METALS | 13-21 | PLASTIC
1L + 125 mL | ☐ Yes
☐ No | 2.40 | NO WELL CAP
PVC TUBING CUT TO ALLOW HYDROLIFT TO FIT.
WATER AND WELL DEPTHS TAKEN BEFORE AND AFTER CUT. | | | | | | | | | | | | | |

* REVER

PVC CUT

STICKUP - 0.57 m
 DEPTH TOWT - 7.398 m
 WELL DEPTH - 21.20 m

WATER AND WELL DEPTHS TAKEN BEFORE AND AFTER CUT.

27.

Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 058447

Northing: 6913140 (WP015)

Photo Nos.: 4429

| Final Groundwater Field Parameters (Following Purge) | |
|--|------------------|
| Time (hh:mm; 24h) | <u>13-21</u> |
| Temperature (°C) | <u>1.6</u> |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | <u>> 4000</u> |
| Cond. (µs/cm) | |
| pH | <u>5.8</u> |
| Redox (mV) | <u>> 2000</u> |
| Turbidity (NTU) | <u>2.40</u> |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front or Page 1, if required | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| <p><u>NO CONSUMABLES.</u></p> |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | |
|---|------------------------------|-----------------------------------|--|--|---|---------------------|--------|-------------|--------------|------------|----------|-------|----------|--|------------|--|--|--|--|
| Well Number: | SRK08-SP8B | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 | | | | | | | | | | | | | | |
| Approximate Date Drilled: | UNKNOWN | Client: | YG-AAM | Sampler: | RM + GMR | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
~ 4°C | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | / | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| W/ BATTERY | | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 1.900 | Calculations: | Purge Start Time: | 9-58 | Purge End Time: | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 7.03 | $5.13 \times 2 = 10.26 \text{ L}$ | Time () min. interval (24h) | 10-05 | 10-15 | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | 6.00 | | Depth (m) | 1.91 | 1.91 | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 1.04 | | Temperature (°C) | 1.0 | 1.0 | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 10.26 | | pH | 6.02 | 6.0 | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 2699 | 2710 | | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 1375 | 1381 | | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2.5 | 3.5 | | | | | | | | | | | | | | |
| | | Cumulative Purge Volume (L) | 2.5 | 6 | | | | | | | | | | | | | | | |
| | | Total Purge Volume: | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Watera</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td>W/ BATTERY</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | Analysis | | W/ BATTERY | | | | |
| Method | Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | |
| Analysis | | W/ BATTERY | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | |
| SRK08-SP8B | TOTAL METALS
DISS. METALS | 10-23 | PLASTIC
1L + 2X125 ml | ☒ Yes
☐ No | 0.98 | STRAIGHT FORWARDED. | | | | | | | | | | | | | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584295 Northing: 6912952 (WP.13)

Photo Nos.: 4425 & 4427

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 10-23 |
| Temperature (°C) | 1.0 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 2709 |
| Cond. (µs/cm) | |
| pH | 6.04 |
| Redox (mV) TDS | 1381 |
| Turbidity (NTU) | 0.98 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 8 metres peri 3/16" TUBING. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | |
|--|----------------------------------|-----------------------------------|--|--|---|----------|---------|-------------|--------------|------------|----------|-------|----------|--|------------|--|--|--|--|
| Well Number: | SRK08 - SP8A | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 | | | | | | | | | | | | | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | RM + GMR | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
3°C | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☐ ID: 1 | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | |
| Waterra | Peristaltic
w/ BATTERY | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 1.800 | Calculations: | Purge Start Time: | 9-26 | Purge End Time: 9-52 | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 8.52 | $6.72 \times 2 = 13.44 \text{ L}$ | Time () min. interval (24h) | 9-31 | 9-38 | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | 8.00 | | Depth (m) | 1.82 | 1.81 | 1.82 → | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 1.2 | | Temperature (°C) | 1.1 | 0.9 | 0.9 | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 13.44 | | pH | 5.91 | 5.97 | 5.98 | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3009 | 2893 | 2827 | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 1533 | 1474 | 1441 | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR → | CLEAR → | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2 | 3.5 | 2.5 | | | | | | | | | | | | | |
| | | | Cumulative Purge Volume (L) | 2 | 5.5 | | | | | | | | | | | | | | |
| | | | Total Purge Volume: | 8 | 10.5 | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td>w/ BATTERY</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | Analysis | | w/ BATTERY | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | |
| Analysis | | w/ BATTERY | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | |
| SRK08 - SP8A | TOTAL METALS
DISSOLVED METALS | 9-52 | PLASTIC
1L + 2X 125ml | ☒ Yes
☐ No | 1.07 | | | | | | | | | | | | | | |

GEN CHEM.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584295 Northing: 6912952 (WP13)

Photo Nos.: 4426 + 4427

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----------------|
| Time (hh:mm; 24h) | 9-52 |
| Temperature (°C) | 0.9 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 2781 |
| Cond. (µs/cm) | 2781 |
| pH | 5.98 |
| Redox (mV) TDS (PPM) | 1416 |
| Turbidity (NTU) | 1.07 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (If Required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 9.5 metres of 3/16" PERI TUBING |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|---|---|--|--|---|---------------------------|------|------|
| Well Number: | p96-7 | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 | | | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RM + GMR | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST 4°C | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☒ ID: DUP 4 | Recovery: | ☒ Good ☐ Bad | | | |
| Purge Method | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | |
| w/ BATTERY. | | | | | | | | |
| Initial Depth to Water (m): | 5.138 | Calculations: | Purge Start Time: | 8-03 | Purge End Time: 8-42 | | | |
| Depth to Bottom (m): | 9.895 | $4.757 \times 2 = 9.514$
$2" \text{ casing has } 0.16 \text{ USgal/ft or } 2.032 \text{ l/m}$
$1" \text{ casing has } 0.04 \text{ USgal/ft or } 0.508 \text{ l/m}$
$8" \text{ sand pack has } 0.73 \text{ USgal/ft or } 9.271 \text{ l/m}$
$6 \text{ 5/8" sand pack has } 0.50 \text{ USgal/ft or } 6.35 \text{ l/m}$ | Time () min. interval (24h) | 8-09 | 8-17 | 8-26 | 8-33 | 8-42 |
| Submerged Tubing Depth (m): | | | Depth (m) | 5.210 | 5.23 | 5.25 | 5.25 | 5.25 |
| Well Stick-up Height (m): | 0.85 | | Temperature (°C) | 1.6 | 1.3 | 1.4 | 1.5 | 1.4 |
| Estimated Water Volume (L): | 9.514 | | pH | 6.77 | 6.97 | 7.07 | 7.10 | 7.12 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 3140 | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3140 | 3092 | 3105 | 3110 | 3102 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 1600 | 1576 | 1584 | 1587 | 1582 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | → | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2.0 | 2 | 1.5 | 1.5 | 2.0 |
| | | Cumulative Purge Volume (L) | 2.0 | 4.0 | 5.5 | 7.0 | 9.0 | |
| | | Total Purge Volume: | 9. | | | | | |
| Method: Waterra Peristaltic Disp. Bailer Subm. Pump Air Lift Other | | | | | | | | |
| w/ BATTERY | | | | | | | | |
| Analysis | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) * | Comments | | |
| p96-7 | TOTAL METALS
DISSOLVED METALS
GEN CHEM. | 8.42 | PLASTIC
1L + 125mL | ☒ Yes
☐ No | 1.75 | STRAIGHT FORWARD
DUP 4 | | |

* < 50 NTU



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584127

Northing: 6913287 WP 012

Photo Nos.: 4424

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 8:42 |
| Temperature (°C) | 1.4 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 3102 |
| Cond. (µs/cm) | |
| pH | 7.12 |
| Redox (mV) TDS (PPM) | 1582 |
| Turbidity (NTU) | 1.75 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (Required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of Well or Other Features) |
|--|
| <div>NO CONSUMA</div> <div>8" SILICON TUBING USED.</div> |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|------------------------|----------------------|--|--|---|
| Well Number: | SRK05-SP-3A | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RM + GMR |
| Piezometer Diameter / Screen Length: | 24 | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
9°C |
| CHV (ppm / % LEL): | 2 | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| ✓ HYDROLIFT | 4-896 | | | | |
| Initial Depth to Water (m): | 4.064 | Calculations: | Purge Start Time: | 1513 | Purge End Time: 1534 |
| Depth to Bottom (m): | 23.305 | 23.810 | Time () min. interval (24h) | 1517 | 1522 |
| Submerged Tubing Depth (m): | | | Depth (m) | 5.2 | 5.22 |
| Well Stick-up Height (m): | 0.86 | | Temperature (°C) | 1.7 | 1.5 |
| Estimated Water Volume (L): | 37.83 | 18.914 | pH | 6 | 5.98 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | X 2 | Cond. (µs/cm) | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | = 37.83 | Specific Cond. (µs/cm) | 1508 | 1545 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 770 | 785 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 15 | 13 |
| | | | Cumulative Purge Volume (L) | 15 | 28 |
| | | | Total Purge Volume: | | |
| Method: | Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| Analysis | ✓ | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| SRK05-SP-3A | T-MEALS
DISS. MEALS | 15-35 | 1X PLASTIC IL
2X " 125AL | ☒ Yes
☐ No | 3.88 |
| | | | | | STRAIGHT FORWARD. |

GEN. CHEM

+ 15
43

| General Notes (Condition or yield or other features) |
|--|
| |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|---|--|-------------|---|--|-----------------|-------------------------------|---|-----------------|
| Well Number: | SRK05-SP-1A | | Project Number: | 1343-005.02 | | Date: | SEPT 10 2014 | |
| Approximate Date Drilled: | | | Client: | YG-AAM | | Sampler: | RM + GMR | |
| Piezometer Diameter / Screen Length: | 2" | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | OVERCAST. | |
| CHV (ppm / % LEL): | / | | Duplicate Collected: | ☒ ID: | | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift |
| W/HYDROLIFT | | | | | | | | |
| Initial Depth to Water (m): | 7.235 * | | Calculations: | Purge Start Time: | | 15-37 | | Purge End Time: |
| Depth to Bottom (m): | 20.170 * | | <p>12.937</p> <p>x2</p> <p>= 25.874</p> | Time () min. interval (24h) | | 16.03 16-08 14.16 16-21 | | |
| Submerged Tubing Depth (m): | | | | Depth (m) | | 7.27 7.24 7.26 7.26 | | |
| Well Stick-up Height (m): | 0.75 | | | Temperature (°C) | | 1.5 1.2 1.1 1.1 | | |
| Estimated Water Volume (L): | 25.874 | | | pH | | 5.64 5.62 5.63 5.64 | | |
| <p>(DTB - DTW) x 2 (for 2" well diameter) = 1 well volume</p> <p>(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume</p> <p>2" casing has 0.16 USgal/ft or 2.032 l/m</p> <p>1" casing has 0.04 USgal/ft or 0.508 l/m</p> <p>8" sand pack has 0.73 USgal/ft or 9.271 l/m</p> <p>6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m</p> | | | | Cond. (µs/cm) | | | | |
| | | | | Specific Cond. (µs/cm) | | 2290 2323 2316 2320 | | |
| | | | | Redox (mV) | | 105 (PPM) 1167 1181 1181 1183 | | |
| | | | | DO (mg/L) | | | | |
| | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | |
| | | | | Interval Purge Volume (L) | | 8.5 7.5 15 4 | | |
| | | | Cumulative Purge Volume (L) | | 8.5 16 31 35 | | | |
| | | | Total Purge Volume: | | | | | |
| Method | Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | |
| Analysis | W/HYDROLIFT | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | |
| SRK05-SP-1A | TOTAL METALS
DISS. METALS
GEN. CHEM. | 16-22 | PLASTIC
1X1L
2X125ML | ☒ Yes
☐ No | 4.18 | | * MEASURED FROM CASING - SEE OVER | |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584621

Northing: 6913075

(WP17)

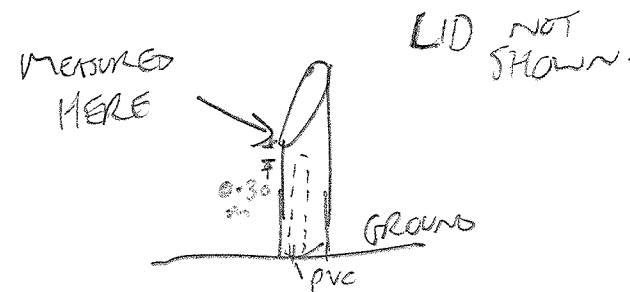
Photo Nos.: 4432

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 16-22 |
| Temperature (°C) | 1.1 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 2320 |
| Cond. (µs/cm) | |
| pH | 5.64 |
| Redox (mV) Redox (mV) TDS (ppm) | 1183 |
| Turbidity (NTU) | 4.18 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Field WP Page 1 (required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (condition of well or other features)

NO CONSUMABLES.





GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|---|
| Well Number: | P2001-2B ^{deep} | Project Number: | 1343-005.02 | Date: | 11 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AG AW |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Partially cloudy, light wind ~8°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: No | Recovery: | ☐ Good ☒ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| hydrolift | | | | | see drawdown |
| Initial Depth to Water (m): | 3.83 m | Calculations: | Purge Start Time: | 1340 | Purge End Time: 1420 |
| Depth to Bottom (m): | 27.67 m | 27.7 - 3.8 | Time (10 min. interval (24h)) | 1350 1400 1410 1420 | |
| Submerged Tubing Depth (m): | ~26m | = 23.9 | Depth (m) | 6.4 m 6.97 | 7.78 8.50 |
| Well Stick-up Height (m): | 0.37 | x 24m | Temperature (°C) | 5.2 5.5 5.7 5.5 | |
| Estimated Water Volume (L): | ~47.75L | ~ 47.75 | pH | 6.90 6.92 6.94 6.95 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1892 1917 1923 1918 | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3047 3054 3060 3058 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 1122 1122 1122 1122 | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | 1122 1122 1122 1122 | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | mostly clear, faint light green, no oil | most clear, faint light green, no oil |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 7.5 4 4 4 | |
| | | | Cumulative Purge Volume (L) | 7.5 11.5 15.5 19.5 | |
| | | | Total Purge Volume: | 19.5 66.6 NTU | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| Analysis | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P2001-2B | Dis Metals
Total Metals
Gen Chem | 1421 - 1425 | 1x 25ml plastic
1x 1L plastic | ☒ Yes
☒ No | 10.58 NTU @ time of sample |
| | | | | | Dis Metals field filtered |

Same sample equipment as P01-01A

14:50 - slowed hydrolift to minimal possible flow to still yield water

14:21 - collected sample despite drawdown, parameters are stable and sample depth much lower than drawdown depth. Purging 3 WV would result in very silty water + long purge time



Sample Site (Con't): P2001-2B

Field UTM Location: Zn: 08 U Easting: 0593132 Northing: 6902866 $\pm$ 3m AN GPS

Photo Nos.: 90-95 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature ($^{\circ}$ C) | |
| DO (mg/L) | |
| Specific Cond. (μ S/cm) | |
| Cond. (μ S/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature ($^{\circ}$ C) | | | | | |
| pH | | | | | |
| Cond. (μ S/cm) | | | | | |
| Specific Cond. (μ S/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| 2 x 2" PVC (A+B) both w/ caps inside (nested) metal stick up w/ cover
used 5/8" existing tubing in well for hydrolift/batter sampling |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | |
|--|--------------------------|----------------------|---|---|--|---------------------------|---------|-------------|--------------|------------|----------|-------|----------|--|------------|--|--|--|--|
| Well Number: | V34 | Project Number: | 1343-005.02 | Date: | 11 Sept 2014 | | | | | | | | | | | | | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" PVC/unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool, cloudy, light rain ~3°C | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: (YES) DUP-5 | Recovery: | ☐ Good ☐ Bad | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| | a low flow | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 5.713 | Calculations: | Purge Start Time: | 0842 | Purge End Time: | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 12.307 | 12.3 - 5.7 | Time (5) min. interval (24h) | 0847 | 0852 | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | ~11.5 | ~6.6 | Depth (m) | 6.415 | 6.460 | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.55 | x 2 L/m | Temperature (°C) | 3.1 | 3.1 | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | ~13.25 | = 13.2 | pH | 6.95 | 6.86 | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 103.1 | 94.2 | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 176.1 | 162.0 | | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | ~~~~~ | | | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | ~~~~~ | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | 7 faint light grey no b/s | Same as previous, faint grey | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.75 | 0.5 | | | | | | | | | | | | | | |
| | | | Cumulative Purge Volume (L) | 0.75 | 1.25 | | | | | | | | | | | | | | |
| | | | Total Purge Volume: | 1.75 | 2.25 | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td>a low flow</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | Analysis | | a low flow | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | |
| Analysis | | a low flow | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | |
| V34 | Dis Metals | 0908 | 1x125ml plastic | ☒ Yes | 12.8 NTU @ time of sample | Dis Metals field filtered | | | | | | | | | | | | | |
| DUP-5 | Total Metals
Gen Chem | 0937 | 1x1L plastic | ☒ No | | | | | | | | | | | | | | | |

☒ Drawdown, slight drawdown @ low flow, stabilized (mostly) @ very low flow and stable gradients

↳ DUP-5 same parameters & bottles as V34

Same sample equipment as P01-01A except per pump instead hydrolift



Sample Site (Con't): V34

Field UTM Location: Zn: 08 U Easting: 0593428 Northing: 6902476 $\pm 3m$ AN GPS

Photo Nos.: 75-80 AN Camera

| Final Groundwater Data Parameters Following Purge | |
|---|--|
| Time (hh:mm; 24h) | |
| Temperature ($^{\circ}C$) | |
| DO (mg/L) | |
| Specific Cond. ($\mu S/cm$) | |
| Cond. ($\mu S/cm$) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Combined from 15 min. of Purge (Estimated) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature ($^{\circ}C$) | | | | | |
| pH | | | | | |
| Cond. ($\mu S/cm$) | | | | | |
| Specific Cond. ($\mu S/cm$) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| 2" PVC casing inside metal stick up w/ barrel cover. No cap on PVC so we added one 5/8" already in well left in place, added 13m of 1/4" tubing + 6" silicon for low flow sampling |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|--|
| Well Number: | V35 | Project Number: | 1343-005.02 | Date: | 11 Sept 2014 |
| Approximate Date Drilled: | unknown infield | Client: | YG-AAM | Sampler: | AK AN |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool, cloudy, raining ~ 5°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ YES ☒ NO | Recovery: | ☐ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | a low flow | | | | |
| Initial Depth to Water (m): | 6.362 | Calculations: | Purge Start Time: | 10 00 | Purge End Time: |
| Depth to Bottom (m): | 16.010 | 16 - 6.4 = 9.6m | Time (5) min. interval (24h) | 1005 | 1610 |
| Submerged Tubing Depth (m): | ~ 15m | = 9.6m | Depth (m) | 7.160 | 7.297 |
| Well Stick-up Height (m): | 0.475 | > 2 L/m | Temperature (°C) | 3.1 | 3.3 |
| Estimated Water Volume (L): | ~ 19 L | = 19 L | pH | 7.02 | 6.97 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1617 | 1621 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 2781 | 2773 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | ~~~~~ | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | ~~~~~ | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | SAME |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.5 | 0.5 |
| | | | Cumulative Purge Volume (L) | 0.5 | 1.0 |
| | | | Total Purge Volume: | 1.75 | ↳ slowed flow to minimum to mitigate drawdown |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| | | a low flow | | | |
| Analysis | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| V35 | Dis Metals
Total Metals
Gen Chem | 1026 -
1046 | 1x 125ml plastic
1x 125ml plastic
1x 1L plastic | ☒ Yes
☒ No | 2.10 NTU @ time of sample |
| | | | | | Dis Metals field filtered |

Drawdown
e low flow,
slowed
pump to
minimum
setting
to minimize
drawdown

↳ slowed flow to minimum to mitigate drawdown

Same sample equipment as V34



Sample Site (Con't): V35

Field UTM Location: Zn: 080 Easting: 0593175 Northing: 6902554 ± 0m AV GPS

Photo Nos.: 81-85 AW camera

| Final Solenoid Water Pump Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (If Applicable) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well/borehole/features):

2" PVC well w/ no cap inside a metal stick up w/ cover, covered by large white barrel. No cap added to PVC since we have limited # of caps, and there is barrel cover
5/8" water existing in well but added 16.5m 1/2" tubing + 6" silicon for low flow sampling



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|---|--|----------------------|--|---|--|
| Well Number: | V36 | Project Number: | 1343-005.02 | Date: | 11 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | Ans AN |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool, cloudy, light wind ~6°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: No | Recovery: | ☐ Good ☐ Bad |
| Purge Method | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Manual | at low flow | | | | ☒ Drydown |
| Initial Depth to Water (m): | 8.706 | Calculations: | Purge Start Time: | 15:20 | Purge End Time: |
| Depth to Bottom (m): | 11.855 | 11.85 - 8.7 | Time (L) min. interval (24h) | 15:23 | 15:26 |
| Submerged Tubing Depth (m): | ~11m | = 3.15 | Depth (m) | 8.785 | 8.840 |
| Well Stick-up Height (m): | 0.995 | = 2.1m | Temperature (°C) | 4.5 | 4.7 |
| Estimated Water Volume (L): | ~6.3 | = 6.3 L | pH | 6.93 | 6.93 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 3023 | 3187 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1854 | 1952 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 222 | 222 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | 2.2 | 2.2 |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no odour | Same |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2 | 2 |
| | | | Cumulative Purge Volume (L) | 2 | 4 |
| | | | Total Purge Volume: | 6 L | |
| Method: Watera Peristaltic Disp. Bailer Subm. Pump Air Lift Other | | | | | |
| Analysis: Manual at low flow | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| V36 | Dis Metals
Total Metals
Gen Chem | 15:37-
15:44 | 1 x 125ml plastic
1 x 1L plastic | ☒ Yes
☒ No | 6.27 NTU at time of sample |
| | | | | | Dis Metals field filtered |

Same equipment as P01-01A except ~~per pump~~ instead hydrolift → UPDATE → peri pump cavitating inside tubing, DTW just slightly beyond pump capability, switch to manual watera purge instead



Sample Site (Con't): V36

Field UTM Location: Zn: 080

Easting: 0593135

Northing: 6902914 ± 3m AN EPS

Photo Nos.: 96-100, AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of Well or Other Features) |
|---|
| 2" PVC w/ no cap inside metal stick up w/ poorly fitting lid, covered by white rain barrel → no cap / plug added to PVC as rain barrel present and we have limited caps.
5/8" waterer already in place in well, but added 12L of 1/4" + 6" silicon for low flow sampling |

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--|--|---|---|---|---------------------------|
| Well Number: | P2001-3 | Project Number: | 1343-005.02 | Date: | 11 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool cloudy light rain ~8°C | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ YES ☐ NO | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| hydro lift | | | | | | |
| Initial Depth to Water (m): | 37.004 | Calculations: | Purge Start Time: | 11:15 | Purge End Time: 12:05 | |
| Depth to Bottom (m): | unknown | 62.25 - 37 | Time (5 min. interval (24h)) | 11:20 11:25 11:35 11:45 11:55 12:05 | | |
| Submerged Tubing Depth (m): | unknown | ~25m | Depth (m) | 37.655 37.665 37.869 37.949 38.051 37.995 | | |
| Well Stick-up Height (m): | 0.76 | 12 L/m | Temperature (°C) | 2.6 2.7 2.6 2.6 2.7 2.8 | | |
| Estimated Water Volume (L): | ~50 | ~50 L | pH | 7.71 7.58 7.48 7.43 7.41 7.44 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | SEE REVERSE
2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | Cond. (µs/cm) | 661 17.1 570 561 562 563 | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1156 39.0 996 979 978 975 | | |
| | | | Redox (mV) | 227 227 227 227 227 227 | | |
| | | | DO (mg/L) | 2.2 2.2 2.2 2.2 2.2 2.2 | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | brown / grey / turbid / silty / no odors / mostly clear / light grey / brown / Same | | |
| | | | Interval Purge Volume (L) | 15 12.5 25 25 22.5 20 | | |
| | | | Cumulative Purge Volume (L) | 15 27.5 52.5 77.5 100 120 | | |
| | | | Total Purge Volume: | 120 L 1019 AU 49 NTU 61.5 NTU 56.2 NTU 64 NTU | | |
| Method: Waterra Peristaltic Disp. Bailer Subm. Pump Air Lift Other
Analysis: hydro lift | | | | | | |
| Sample ID | Parameters Analyzed | | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P2001-3 | Dis Metals
Total Metals
Gen Chem | 12:07 - 12:10 | 1x 125ml plastic
1x 12 plastic | ☒ Yes
☐ No | 47.1 NTU @ time of Sample | Dis Metals field filtered |

hydro lift causing excessive disturbance in water column, try running @ slowest speed possible, but needs significant jacking to maintain flow (ie lift such heavy water and so much volume from depth)

Sample Site (Con't): P2001-3

Field UTM Location: Zn: 08 U Easting: 0593099

Northing: 6902981 ± 3m AN GPS

Photo Nos.: 85-90 AN camera

| Final Groundwater Data - Parameters (Following Purge) | |
|---|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Summary from Final Page (if required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| <p>2" PVC (poor fitting cap) inside metal stick up w/cover, covered by black rain barrel</p> <p>Existing large water tubing (3/4 to 7/8" thick) inside well - bolt through tubing stick up out of casing</p> <p>↳ tubing too heavy to pull up and can't drop down to check bottom for fear of losing tubing</p> <p>∴ ⊗ submerged tubing + sample depth unknown (see photos)</p> <p>⊗ large tubing in well preventing water level tape from reaching well bottom → stopped ~42m deep → previous measurements indicate DTB at 62.42m</p> <p>Same equipment as P01-01A</p> |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|----------------------|-----------------------------|--|--|---|
| Well Number: | P96-8B | Project Number: | 1343-005.02 | Date: | SEPT 11 2014 |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMR + RM |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY 19°C |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | ✓ | | | | |
| Initial Depth to Water (m): | 2.47 2.349 | Calculations: | Purge Start Time: | 16-52 | Purge End Time: 17-21 |
| Depth to Bottom (m): | 9.428 | 7.079
X 2
= 14 L | Time () min. interval (24h) | 16-57 | 17-02 |
| Submerged Tubing Depth (m): | | | Depth (m) | 2-360 | 2-37 |
| Well Stick-up Height (m): | 0.69 | | Temperature (°C) | 8.0 | 7.7 |
| Estimated Water Volume (L): | 14.158 | | pH | 4.91 | 4.96 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 74000 | → → → → |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (PPM) | 72000 | → → → → |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 1 |
| | | Cumulative Purge Volume (L) | 1.5 | 2.5 | |
| | | Total Purge Volume: | 5.5 | 7 | |
| | | | 8 | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | ✓ w/BATTERY | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P96-8B | T-METALS
D-METALS | 17-21 | PLASTIC
1X1L
2X125ML | ☒ Yes
☐ No | 2.83 |
| Comments | | | | | |

GEN CHEM

BATTERY IS
METCHMASTER
ELIMINATOR POWER BOX
400W



4451 - STREAM NEAR
WELL.

Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0583220 Northing: 6914072

Photo Nos.: 4449-4450

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 17-21 |
| Temperature (°C) | 7.7 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | >4000 |
| Cond. (µs/cm) | |
| pH | 5.03 |
| Redox (mV) → TDS (ppm) | >2000 |
| Turbidity (NTU) | 2.83 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data – Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

10.5 m PERI TUBING 3/16"
8" SILICON TUBING.



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------------|--------------|-----------------------------|--|-----------------|---------------|---|-----------------|--------|---------|-------------|--------------|--------------|------------|----------|-------|----------|--|---|--|--|--|--|--|
| Well Number: | P96-8A P96 | | Project Number: | 1343-005.02 | | Date: | SEPT 11 2014 | | | | | | | | | | | | | | | | | |
| Approximate Date Drilled: | - | | Client: | YG-AAM | | Sampler: | RM + GMR | | | | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | Sunny ~ 19°C | | | | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | | | Duplicate Collected: | ☐ ID: NONE | | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift | | | | | | | | | | | | | | | | |
| | | ✓ w/ BATTERY | | | | | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 2.431 | | Calculations: | Purge Start Time: | | 16-26 | | Purge End Time: | | | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 4.833 | | $2.402 \times 2 = 4.8L$ | Time () min. interval (24h) | | 16-31 | | 16-38 | | | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | | | | Depth (m) | | 2.450 | | 2.450 | | | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.775 | | | Temperature (°C) | | 9.3 | | 9.1 | | | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 4.804 | | | pH | | 3.79 | | 3.56 | | | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | | | | | |
| | | | | Specific Cond. (µs/cm) | | 24000 → → → | | | | | | | | | | | | | | | | | | |
| | | | | Redox (mV) TDS (ppm) | | 2200 → → → | | | | | | | | | | | | | | | | | | |
| | | | | DO (mg/L) | | | | | | | | | | | | | | | | | | | | |
| | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | CLEAR | | CLEAR | CLEAR | | | | | | | | | | | | | | | |
| | | | | Interval Purge Volume (L) | | 1.5 | | 2 | | | | | | | | | | | | | | | | |
| | | | Cumulative Purge Volume (L) | | 1.5 | | 3.5 | | | | | | | | | | | | | | | | | |
| | | | Total Purge Volume: | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Steel Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | | | | Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | Analysis | | ✓ | | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | | | | |
| Analysis | | ✓ | | | | | | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | | | | | | | | | | | | | | | | | |
| P96-8A | T. METALS
D. METALS | 16-46 | PLASTIC
1L
2x 125 mL | ☒ Yes
☐ No | 2.09 | | STRAIGHT FORWARD.
STRANGE SMELL | | | | | | | | | | | | | | | | | |

GEN CHEM

"ACIDY METAL"



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0583220

Northing: 6914072 (WP 28)

Photo Nos.: 4449 - 4450

| Final Groundwater Field Parameters (Following Purge) | |
|--|--------|
| Time (hh:mm; 24h) | 16-46 |
| Temperature (°C) | 9.0 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | > 4000 |
| Cond. (µs/cm) | |
| pH | 3.52 |
| Redox (mV) TDS (PPM) | > 2000 |
| Turbidity (NTU) | 2.09 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features):

8" SILICON TUBING



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|----------------------------------|-------------|-------------------------------|--|-----------------|-------------------------|--|----------|
| Well Number: | SRK08-SBR3 | | Project Number: | 1343-005.02 | | Date: | SEPT 11 2014 | |
| Approximate Date Drilled: | | | Client: | YG-AAM | | Sampler: | | |
| Piezometer Diameter / Screen Length: | 2" | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | over PATCHY 13°C CLOUD. | |
| CHV (ppm / % LEL): | | | Duplicate Collected: | ☐ ID: NONE | | Recovery: | ☐ Good ☐ Bad
MODERATE | |
| Purge Method | | | | | | | | |
| Wattera | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift |
| 5/16" | | | | | | 13-02 | | |
| Initial Depth to Water (m): | 11-631 | | Calculations: | Purge Start Time: | | Purge End Time: | | 1317 |
| Depth to Bottom (m): | 13-173 | | 3L | Time () min. interval (24h) | | 13-08 13-11 13-14 13-17 | | |
| Submerged Tubing Depth (m): | | | | Depth (m) | | 11-64 | | |
| Well Stick-up Height (m): | 0-96 | | | Temperature (°C) | | 2-6 2-9 2-1 2-1 | | |
| Estimated Water Volume (L): | 3-084 | | | pH | | 6-58 6-85 6-87 6-90 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | | Cond. (µs/cm) | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | | Specific Cond. (µs/cm) | | 3327 3389 3300 3362 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | | Redox (mV) | | 1701 1728 1685 1712 | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | | DO (mg/L) | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | CLEAR CLEAR CLEAR CLEAR | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | | Interval Purge Volume (L) | | 2 2-5 2-5 2 | | |
| | | | | Cumulative Purge Volume (L) | | 2 4-5 7 9 | | |
| | | | | Total Purge Volume: | | | | |
| Method: | Wattera | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | |
| Analysis | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | |
| SRK08-SBR3 | TOTAL METALS
DISSOLVED METALS | 1318 | PLASTIC
1X1L
2X 12.5 mL | ☒ Yes
☐ No | 16.6 | | | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584394 Northing: 6913146 (WP24) Photo Nos.: 4441

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data – Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features):

WATER
~~TOO~~ TOO DEEP FOR PERISTALTIC.
USED 15 M CF WATERRA 5/8" TUBING
+ FOOT VALVE.



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | |
|--------------------------------------|--|---|--|--|---|----------|--|--|--|
| Well Number: | S1B | Project Number: | 1343-005.02 | Date: | 14 Sep 2014 | | | | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | R7 | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cloudy 4°C | | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☒ ID: | Recovery: | ☐ Good ☒ Bad | | | | |
| Purge Method | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | |
| | ✓ | | | | | | | | |
| Initial Depth to Water (m): | 4.330 | Calculations: | Purge Start Time: | 12:50 | Purge End Time: 18:00 | | | | |
| Depth to Bottom (m): | 5.175 | <p>(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume</p> <p>(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume</p> <p>2" casing has 0.16 USgal/ft or 2.032 l/m</p> <p>1" casing has 0.04 USgal/ft or 0.508 l/m</p> <p>8" sand pack has 0.73 USgal/ft or 9.271 l/m</p> <p>6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m</p> | Time () min. interval (24h) | 13:01 | 14:01 | 18:00 | | | |
| Submerged Tubing Depth (m): | 5.1 | | Depth (m) | Dry | Dry | Dry | | | |
| Well Stick-up Height (m): | 1.17 | | Temperature (°C) | 4.6 | 4 | 4.1 | | | |
| Estimated Water Volume (L): | 1.5 | | pH | 6.76 | 6.53 | 6.47 | | | |
| | | | Cond. (µs/cm) | | | | | | |
| | | | Specific Cond. (µs/cm) | 781 | 821 | 809 | | | |
| | | | Redox (mV) TDS (ppm) | 393 | 418 | 431 | | | |
| | | | DO (mg/L) | | | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear | clear | clear | | | |
| | | | Interval Purge Volume (L) | 1.5 | 0.25 | 0.75 | | | |
| | | Cumulative Purge Volume (L) | 1.5 | 1.75 | 2.5 | | | | |
| | | Total Purge Volume: | 2.5 L | | | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | | |
| Analysis | | ✓ | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | | |
| S1B | Gen. Chem.
Total Metals
Diss. Metals | 11 Sep 2014
10:30 | Plastic
1L, 2x 125 mL | ☒ Yes
☐ No | 1.93 | | Dry well
Well purged 3 times | | |



Sample Site (Con't): _____

Field UTM Location: Zn: _____

Easting: _____

Northing: _____

Photo Nos.: _____

| Final Groundwater Field Parameters (Following Purge) | |
|--|--------|
| Time (hh:mm; 24h) | 8-14 → |
| Temperature (°C) | 40.1 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 809 |
| Cond. (µs/cm) | |
| pH | 6.47 |
| Redox (mV) TDS (ppm) | 431 |
| Turbidity (NTU) | 1.93 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| |
|--|
| General Notes (Condition of well or other features) |
| Sampled on Sept 11 following three purges to dry.
Sample ^{field} parameters are approximate. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--------------------------------------|---------------------|-------------|----------------------|--|-----------------|--|--|-----------------|
| Well Number: | SRK05-SP-6 | | Project Number: | 1343-005.02 | | Date: | SEPT 11, 2014 | |
| Approximate Date Drilled: | | | Client: | YG-AAM | | Sampler: | | |
| Piezometer Diameter / Screen Length: | 2" | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | | |
| CHV (ppm / % LEL): | 70 | | Duplicate Collected: | ☐ ID: | | Recovery: | ☐ Good ☐ Bad | |
| Purge Method | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift |
| | | | | | | | | Other |
| Initial Depth to Water (m): | | DRY | | Calculations: | | Purge Start Time: | | Purge End Time: |
| Depth to Bottom (m): | | 11.78 | | $(DTB - DTW) \times 2$ (for 2" well diameter) = 1 well volume

$(DTB - DTW) \times 1.1$ (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | Time () min. interval (24h) | | |
| Submerged Tubing Depth (m): | | | | | | Depth (m) | | |
| Well Stick-up Height (m): | | | | | | Temperature (°C) | | |
| Estimated Water Volume (L): | | | | | | pH | | |
| | | | | | | Cond. (µs/cm) | | |
| | | | | | | Specific Cond. (µs/cm) | | |
| | | | | | | Redox (mV) | | |
| | | | | | | DO (mg/L) | | |
| | | | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | |
| | | | | | | Interval Purge Volume (L) | | |
| | | | | Cumulative Purge Volume (L) | | | | |
| | | | | Total Purge Volume: | | | | |
| Method: | Waterra | | Peristaltic | | Disp. Bailer | | Steel Bailer | |
| | | | | | | | | Subm. Pump |
| | | | | | | | | Air Lift |
| | | | | | | | | Other |
| Analysis | | | | | | | | |
| Sample ID | Parameters Analyzed | | Sample Time | | Container Types | | Preservative | |
| | | | | | | | ☐ Yes | |
| | | | | | | | ☐ No | |
| | | | | | | | Turbidity (NTU) | |
| | | | | | | | Comments | |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0884381

Northing: 6913149 (LP23)

Photo Nos.: 4438 - 4440

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|---------------------|-----------------------------|--|------------------------------|--|----------|-------|
| Well Number: | SRK08-SBR1 | Project Number: | 1343-005.02 | Date: | SEPT 11, 2014 | | |
| Approximate Date Drilled: | SEPT 2 2008 | Client: | YG-AAM | Sampler: | GWR + RM | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: | Recovery: | ☐ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Watertra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| Initial Depth to Water (m): | | Calculations: | Purge Start Time: | | Purge End Time: | | |
| Depth to Bottom (m): | | | Time () min. interval (24h) | | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | | | | |
| Well Stick-up Height (m): | | | Temperature (°C) | | | | |
| Estimated Water Volume (L): | | | pH | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | Interval Purge Volume (L) | | | | | |
| | | Cumulative Purge Volume (L) | | | | | |
| | | Total Purge Volume: | | | | | |
| Method: | Watertra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| | | | | ☐ Yes | | | |
| | | | | ☐ No | | | |

BRICKEN
PLUGGED
PVC
WITH
ASBESTOS
CEMENTITE.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V

Easting: 0584472

Northing: 6913128 (W025)

Photo Nos.: 4502 - 4506
4442

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features)

Sept 16 2014.

pvc Broken at surface 1.22 m from top.
Bentonite ^{on} end of water level tape.
Likely can be repaired. Remove monument, cut pvc below bentonite plug,
add ~~for~~ new pvc using hard coupling with glue. Reinstall monument using
cement. A new monument is not required.

↑
1 bag



GROUNDWATER SAMPLE COLLECTION SHEET

SEPT 11 2014

| | | | | | | |
|--|-----------------------------|---|--|--|---|-------|
| Well Number: | SRK05-SP-1B | Project Number: | 1343-005.02 | Date: | SEPT 10 2014 | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | RM + GMR | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST 13°C | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: DUP 6 | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | ✓ 7.115 | | | | | |
| Initial Depth to Water (m): | 7.406 | Calculations: | Purge Start Time: | 11-41 | Purge End Time: | |
| Depth to Bottom (m): | 13.411 | $6.034 \times 2 = 12.068$
$5.995 \times 2 = 11.99$ | Time () min. interval (24h) | 11-50 | 11-55 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 7.12 | 7.12 | 7.12 |
| Well Stick-up Height (m): | 0.52 | | Temperature (°C) | 2.2 | 2.1 | 2.0 |
| Estimated Water Volume (L): | 12.068 | | pH | 7.21 | 6.2 | 6.2 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1016 | 1023 | 1029 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 518 | 521 | 530 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SLIGHTLY TURBID | CLEAR | CLEAR |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2 | 1 | 1 |
| | | Cumulative Purge Volume (L) | 2 | 3 | 4 | |
| | | Total Purge Volume: | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | |
| Analysis | | ✓ w/BATTERY | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| SRK05-SP-1B | TOTAL METALS
DISS METALS | 1218 | PLASTIC
121L
2x125mL | ☒ Yes
☐ No | 4.03 | |
| | | | | | STRAIGHT FORWARD | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: _____

Easting: 0584621

Northing: 6913075 (WP17)

Photo Nos.: 4432

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 1218 |
| Temperature (°C) | 1.9 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 1067 |
| Cond. (µs/cm) | |
| pH | 6.05 |
| Redox (mV) TDS (PPM) | 542 |
| Turbidity (NTU) | 4.03 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 14 m OF PERI TUBING 3/16"
8" OF SILICON TUBING |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|-----------------------------|-------------------------------------|--|--|---|
| Well Number: | MW14-09 | Project Number: | 1343-005.02 | Date: | SEPT 11 2014 |
| Approximate Date Drilled: | JULY 2014 | Client: | YG-AAM | Sampler: | RM + GMR |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST 3.5°C |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | ✓ w/ BATTERY 2.678 | | | | |
| Initial Depth to Water (m): | 14.09 | Calculations: | Purge Start Time: | 9-02 | Purge End Time: 9-35 |
| Depth to Bottom (m): | 6.710 | <p>4.03</p> <p>X2</p> <p>8.06 L</p> | Time () min. interval (24h) | 9-07 | 9-13 |
| Submerged Tubing Depth (m): | | | Depth (m) | 3.112 | 3.47 |
| Well Stick-up Height (m): | 0.83 | | Temperature (°C) | 1.7 | 1.7 |
| Estimated Water Volume (L): | 8.06 | | pH | 6.47 | 6.5 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 977 | 855 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 498 | 435 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SLIGHTLY TURBID | SLIGHTLY TURBID |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 2 |
| | | Cumulative Purge Volume (L) | 1.5 | 3.5 | |
| | | Total Purge Volume: | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | ✓ | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| MW14-09 | TOTAL METALS
DISS METALS | 9-35 | PLASTIC
1X1L
2X 125ML | ☒ Yes
☐ No | 11.4 |
| | | | | | STRAIGHT FORWARD |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584691

Northing: 6913044 (WP021)

Photo Nos.: 4436

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 9-35 |
| Temperature (°C) | 1.5 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 757 |
| Cond. (µs/cm) | |
| pH | 6-31 |
| Redox (mV) TDS (PPM) | 387 |
| ✓ Turbidity (NTU) TDS (PPM) | 11.4 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 8 m of Peri tubing 3/16"
8" SILICON TUBING |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | |
|--|------------------------|---|--|--|---|-------------------|-------|--|--|
| Well Number: | MW14-10 | Project Number: | 1343-005.02 | Date: | SEPT 11 2014 | | | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | RM + GMR | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST. DROPS OF RAIN
5°C | | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad | | | | |
| Purge Method | | | | | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | |
| | ✓ w/ BATTERY | | | | | | | | |
| Initial Depth to Water (m): | 3.124 | Calculations: | Purge Start Time: | 9-47 | Purge End Time: | | | | |
| Depth to Bottom (m): | 5.540 | <p>2.38</p> <p>6.38</p> <p>x 2</p> <p>5 12.7</p> <p>4.76 L</p> | Time () min. interval (24h) | 9.55 | 10.03 | 10.11 | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | 3.34 | 3.50 | 3.58 | | | |
| Well Stick-up Height (m): | 0.94 | | Temperature (°C) | 3.9 | 3.8 | 3.7 | | | |
| Estimated Water Volume (L): | 4.76 | | pH | 7.16 | 7.18 | 7.22 | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1026 | 1035 | 1035 | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (PPM) | 523 | 527 | 527 | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SLIGHTLY TURBID | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2 | 3.5 | 2.0 | | | |
| | | Cumulative Purge Volume (L) | 2 | 5.5 | 7.5 | | | | |
| | | Total Purge Volume: | | | | | | | |
| Method: | Watera | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | | |
| Analysis | | ✓ w/ BATTERY | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | |
| MW14-10 | T. METALS
D. METALS | 1013. | PLASTIC
1x 1L
2x 125 mL | ☒ Yes
☐ No | 23-0 | STRAIGHT FORWARD. | | | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584679 Northing: 6913040 (WP022) Photo Nos.: 4437

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 1013 |
| Temperature (°C) | 3-7 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 1035 |
| Cond. (µs/cm) | |
| pH | 7.22 |
| Redox (mV) Redox (mV) TDS (ppm) | 527 |
| Turbidity (NTU) | 23.0 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features): |
|--|
| 6.5 m Perforated tubing 3/16"
8" silicon tubing |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|---------------------------|-------------------------------------|--|--|---|
| Well Number: | SRK05-SP-2 | Project Number: | 1343-005.02 | Date: | SEPT 11, 2014 |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | RM + GMR |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
3.5°C |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| w/ BATTERY | | | | | |
| Initial Depth to Water (m): | 2.276* | Calculations: | Purge Start Time: | 8-25 | Purge End Time: |
| Depth to Bottom (m): | 11.820* | 9.544
x 2
= 19.088 | Time () min. interval (24h) | 8-31 | 8-43 |
| Submerged Tubing Depth (m): | | | Depth (m) | 2.29 | 2.29 |
| Well Stick-up Height (m): | 0.820* | | Temperature (°C) | 2.0 | 1.5 |
| Estimated Water Volume (L): | 19.088 | | pH | 5.59 | 5.70 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 507 | 514 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 260 | 261 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2 | 4 |
| | | Cumulative Purge Volume (L) | 2 | 6 | |
| | | Total Purge Volume: | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | ☒ | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| SRK05-SP-2 | T. METALS
DISS. METALS | 8-52 | PLASTIC
1X 1L
2X 125 mL | ☒ Yes
☐ No | 2.34 |
| | | | | | * TO MONUMENT
CURVE BOTTOM - SEE OVER |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584681 Northing: 6913035 (WP20)

Photo Nos.: 4435

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 8-52 |
| Temperature (°C) | 1.5 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 511 |
| Cond. (µs/cm) | |
| pH | 5.78 |
| Redox (mV) TDS (PPM) | 260 |
| Turbidity (NTU) | 2-34 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| <p>13m of peri tubing (3/16")</p> <p>8" SILICON TUBING.</p> <div style="text-align: right;"> </div> |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|-----------------------------|----------------------|--|--|---|----------|-------|
| Well Number: | SRK08-P9 | Project Number: | 1343-005.02 | Date: | SEPT 11 2014 | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | RM + GMR | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT ~18°C | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: NONE | Recovery: | ☐ Good ☒ Bad V. Slow pumping | | |
| Purge Method | | | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| | w/ BATTERY | | | | | | |
| Initial Depth to Water (m): | 4.419 | Calculations: | Purge Start Time: | 15-04 | Purge End Time: | | |
| Depth to Bottom (m): | 6.185 → 6.170 | | Time () min. interval (24h) | 1310 1315 1321 15.25 1534 | | | |
| Submerged Tubing Depth (m): | | 1.766 | Depth (m) | 4.54 4.63 4.71 4.75 4.83 | | | |
| Well Stick-up Height (m): | 0.095 | 1.2 = | Temperature (°C) | 4.2 3.9 3.7 3.7 3.7 | | | |
| Estimated Water Volume (L): | 3.532 | 2.42 | pH | 7.12 7.13 7.14 7.13 7.16 | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | 3.532 | Cond. (µs/cm) | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 2248 2250 2174 2181 2323 | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 1146 1149 1112 1111 1185 | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR CLEAR CLEAR CLEAR CLEAR | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 1 1 0.5 1 | | | |
| | | | Cumulative Purge Volume (L) | 1.5 2.5 3.5 4 5 | | | |
| | | | Total Purge Volume: | 2 minute stop | | | |
| Method | Watera | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | w/ BATTERY | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| SRK08-P9 | TOTAL METALS
DISS METALS | 1534 | PLASTIC
1X 1L
2X 125 mL | ☒ Yes
☐ No | 24.0 | | |

GEN CASE

Added extra silicon
and removed existing
interfer which was
causing an obstruction.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0583682 Northing: 6913620 (WP027) Photo Nos.: 4447 + 4448

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | 3.7 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 2323 |
| Cond. (µs/cm) | |
| pH | 7.16 |
| Redox (mV) TDS (ppm) | 1185 |
| Turbidity (NTU) | 24.0 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 16" SILICON TUBING. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|--------------------------|-----------------------------|--|--|---|--------------|--------|
| Well Number: | SRK08-SBR2 | Project Number: | 1343-005.02 | Date: | SEPT 11 2014 | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | RM. + GARR | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Sunny | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| ☒ Waterra MANUAL | | | | | | | |
| Initial Depth to Water (m): | 6.577 | Calculations: | Purge Start Time: | 14-15 | Purge End Time: 14-34 | | |
| Depth to Bottom (m): | 18.72 | at 45° angle
~
24L | Time () min. interval (24h) | 14-19 | 14-22 | | |
| Submerged Tubing Depth (m): | | | Depth (m) | | | | |
| Well Stick-up Height (m): | 8.54 | | Temperature (°C) | 4 | 2.6 | 2.3 | |
| Estimated Water Volume (L): | | | pH | 7.05 | 7.06 | 7.06 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | | | | |
| | | | Specific Cond. (µs/cm) | 74000 | 3562 | 3512 | 3459 |
| | | | Redox (mV) | 72000 | 1816 | 1794 | 1760 |
| | | | DO (mg/L) | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | TURBID Red! | TURBID | TURBID CLEAR | TURBID |
| | | | Interval Purge Volume (L) | 10 | 19 | 12 | |
| | | Cumulative Purge Volume (L) | 10 | 29 | 32 | | |
| | | Total Purge Volume: | 52 | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | | |
| Analysis | MANUAL | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | |
| SRK08-SBR2 | T. METALS
DISS METALS | 14-35 | PLASTIC
1L
2x 125ML | ☒ Yes
☐ No | 43 | | |
| | | | | | SEE OVER | | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584484 Northing: 6913123 (WP26) Photo Nos.: 4443-4446

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 1435 |
| Temperature (°C) | 2-3 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 3475 |
| Cond. (µs/cm) | |
| pH | 7.06 |
| Redox (mV) TDS (PIM) | 1783 |
| Turbidity (NTU) | 43 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

BROKEN WELL (SEE PHOTOS.)
REMOVED MONUMENT TO ACCESS PVC + CHECK ID. SEPARATED TAPPED
TOGETHER PVC TO ACCESS EXISTING WATER. BUT STILL GOT WATER!

FIELD BLANK "FB1" collected at V37



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|---------------------------------------|--|--|---|--|
| Well Number: | FB1 (at V37) | Project Number: | 1343-005.02 | Date: | 11 Sept 2014 |
| Approximate Date Drilled: | N/A | Client: | YG-AAM | Sampler: | AB / AW |
| Piezometer Diameter / Screen Length: | N/A | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Mix sun & cloudy, cool, some wind ~7°C |
| CHV (ppm / % LEL): | N/A | Duplicate Collected: | ☒ Dup: Field Blank FB1 | Recovery: | ☒ Good ☒ Bad N/A |
| Purge Method | | | | | |
| Waterira | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Initial Depth to Water (m): | | Calculations: | Purge Start Time: | | Purge End Time: |
| Depth to Bottom (m): | | | Time () min. interval (24h) | | |
| Submerged Tubing Depth (m): | | | Depth (m) | | |
| Well Stick-up Height (m): | | | Temperature (°C) | | |
| Estimated Water Volume (L): | | | pH | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | N/A |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | Specific Cond. (µs/cm) | | N/A | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | Redox (mV) | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | Interval Purge Volume (L) | | | |
| | | Cumulative Purge Volume (L) | | | |
| | | Total Purge Volume: | | | |
| Method: Waterira Peristaltic Disp. Bailer Subm. Pump Air Lift Other | | | | | |
| Analysis → Poorec Lab supplied DI water from DI bottle into sample bottles by hand @ V37 work site | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| FB1 | Dis Metals
Total Metals
Grn dem | 16:45 -
16:48 | 1 x 125ml plastic
" 1 x 7L plastic | ☒ Yes
☒ No | N/A |
| | | | | | Comments |
| | | | | | Lab supplied DI water (Batch 29 Aug 2014, ACS) |

Dis + Total Metals preserved (acidified)



Sample Site (Con't): FB1 (Field Blank collected at V37) → see V37 for info

Field UTM Location: Zn: _____ Easting: _____ Northing: N/A Photo Nos.: _____

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | N/A |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page (if required) | | | | | |
|--|--|--|-----|--|--|
| Time (~) minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | N/A | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) | |
|---|--|
| N/A | |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|--|--|--|---|---|-------|-----------------------|
| Well Number: | SRK05-SC | Project Number: | 1343-005.02 | Date: | 12 Sept 2014 | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | | |
| Piezometer Diameter / Screen Length: | 1.5" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | overcast, cool, light wind ~ 6°C | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ No | Recovery: | ☒ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| e low flow | | | | | | | |
| Initial Depth to Water (m): | 1.648 | Calculations: | Purge Start Time: | 1458 | Purge End Time: | | |
| Depth to Bottom (m): | 3.716 | 3.7 - 1.65
= 2.05
x 2 L/m
= 4.1 | Time (5) min. interval (24h) | 1503 | 1508 | | |
| Submerged Tubing Depth (m): | ~ 3.0 | | Depth (m) | 1.774 | 1.769 | 1.772 | |
| Well Stick-up Height (m): | 0.96 | | Temperature (°C) | 6.5 | 6.6 | 6.6 | |
| Estimated Water Volume (L): | ~ 4.1 | | pH | 7.58 | 7.56 | 7.56 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | 381.7 | 375.2 | 376.4 | |
| | | | Specific Cond. (µs/cm) | 589.2 | 578.6 | 580.7 | |
| | | | Redox (mV) | / | / | / | / |
| | | | DO (mg/L) | / | / | / | / |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | light grey, faint turbid no o/s | Same as previous | " | Mostly clear / no o/s |
| | | | Interval Purge Volume (L) | 0.5 | 0.4 | 0.5 | |
| | | Cumulative Purge Volume (L) | 0.5 | 0.9 | 1.4 | | |
| | | Total Purge Volume: | 4.0 | | | | |
| Method: Waterra Peristaltic Disp. Bailer Steel Bailer Subm. Pump Air Lift Other
Analysis: e low flow | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | |
| SRK05-SC | Dis Metals
Total Metals
Gen Chem | 1529 -
15:49 | 1 x 125ml plastic
1 x 1L plastic | ☒ Yes
☒ No | 7.15 NTU @ time of sample | | |
| | | | | | Comments | | |
| | | | | | Dis Metals field filtered
Temp, pH + drawdown | | |

Same sample equipment as P01-01A except per pump instead of hydro lift

Stable, Cond + SPC appear to be stabilizing after 3 well volume, proceed to sample

recovery to mitigate drawdown
→ 1538
→ 1.788m
→ 6.2°C
→ 7.55
→ 410.5
→ 6.31.5
mostly clear, no o/s
1.0
4.0



Sample Site (Con't): SRK05-5C

Field UTM Location: Zn: 090 V Easting: 0592763

Northing: 6903382 ± 2m 4N GPS

Photo Nos.: 136-140 AW Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----------------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | / / / / / / / / |
| Turbidity (NTU) | |
| DO (mg/L) | / / / / / / / / |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | / / / / / / / / | / / / / / / / / | / / / / / / / / | / / / / / / / / | / / / / / / / / |
| DO (mg/L) | / / / / / / / / | / / / / / / / / | / / / / / / / / | / / / / / / / / | / / / / / / / / |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 1.5" PVC well w/cap, no metal stick up protector. Located off road on high side above ditch, just behind pump house trailer
- Existing 1/4" tubing in well just add 6" silicon + 1' 1/4" for trail |

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|---|--|----------------------|--|---|--|---------------------------|-------|
| Well Number: | BH05-9B-R | Project Number: | 1343-005.02 | Date: | 12 Sept 2014 | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB/AN | | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | mostly clear ~9°C, incoming clouds | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ No | Recovery: | ☐ Good ☐ Bad | | |
| Purge Method ☒ Drawdown @ | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| | @ low flow | | | | | | |
| Initial Depth to Water (m): | 1.011 | Calculations: | Purge Start Time: | 1403 | Purge End Time: 1423 | | |
| Depth to Bottom (m): | 19.852 | 19.85 - 1 | Time (5 min. interval (24h)) | 1408 1413 1418 1423 | | | |
| Submerged Tubing Depth (m): | ~18.5 | = 18.85 | Depth (m) | 1.324 1.430 1.467 1.499 | | | |
| Well Stick-up Height (m): | 0.93 (above perm) | * 2 L/m | Temperature (°C) | 6.5 6.7 6.8 6.8 | | | |
| Estimated Water Volume (L): | ~37.7 | = 37.7 L | pH | 7.77 7.75 7.75 7.75 | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 158.8 158.7 158.2 160.0 | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 245.4 243.2 242.8 244.4 | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / / / / / | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / / / / / | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear no o/s " " " " | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.85 0.6 0.45 0.4 | | | |
| | | | Cumulative Purge Volume (L) | 0.85 1.45 1.9 2.3 | | | |
| | | | Total Purge Volume: | 2.3 L | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | @ low flow | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| BH05-9B-R | Dis Metals
Total Metals
Gen Chem | 1425
1439 | 1 x 125ml plastic
" " x 1L plastic | ☒ Yes
☒ No | 8.16 NTU @ time of sample | Dis Metals field filtered | |

initial
purge rate,
pump
slowed
to try
and
mitigate
drawdown
and match
recharge
rate

Used same sample equipment as P96-6A



Sample Site (Con't): BH05-9B-R

Field UTM Location: Zn: 08 U Easting: 0592640 Northing: 6903347 ± 3m AN GPS

Photo Nos.: 131-135 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC inside metal stick up protector w/ lid. Metal lid was on but j-plug was off (on ground beside well)
↳ j plug replaced post sample
- Existing 5/8" tubing in well but added 20m 1/2" + 6" silicon for low flow sampling
- Well located directly off roadside <u>NOT</u> nested w/ P96-9A |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--------------------------------------|---------------------------|----------------------|--|---------------|---|
| Well Number: | P96-9A | Project Number: | 1343-005.02 | Date: | 12 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AW |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | clear, cool, light wind |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ No | Recovery: | ☒ Good ☐ Bad |

Purge Method

| | | | | | |
|---------|-------------|--------------|------------|----------|-------|
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | low flow | | | | |

| | | | | | | |
|--|-------|---------------|--|---------------|-----------------|-------|
| Initial Depth to Water (m): | 5.808 | Calculations: | Purge Start Time: | 13:28 | Purge End Time: | 13:46 |
| Depth to Bottom (m): | 9.393 | 9.4-5.8 | Time (5) min. interval (24h) | 13:33 | 13:38 | 13:43 |
| Submerged Tubing Depth (m): | ~8.5 | ~3.6 | Depth (m) | 5.862 | 5.860 | 5.865 |
| Well Stick-up Height (m): | 0.92 | x 2 L/m | Temperature (°C) | 6.4 | 6.3 | 6.4 |
| Estimated Water Volume (L): | ~7.2 | ~7.2 L | pH | 6.65 | 6.63 | 6.63 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 240.9 | 238.2 | 237.7 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 373.7 | 369.7 | 369.1 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / | / | / |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / | / | / |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | " | " |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.75 | 0.75 | 0.75 |
| | | | Cumulative Purge Volume (L) | 0.75 | 1.5 | 2.25 |
| | | | Total Purge Volume: | 3 L | | |

| | | | | | | | |
|-----------|--|----------------|--------------------------------------|---|---------------------------|---------------------------|-------|
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | low flow | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| P96-9A | Dis Metals
Total Metals
Gen Chem | 1349 -
1356 | 1 x 125ml plastic
1 x 1 L plastic | ☒ Yes
☒ No | 1.71 NTU @ time of sample | Dis Metals field filtered | |

Same sample equipment as P01-01A except per pump instead of hydro lift

recharge to mitigate drawdown

b to c



Sample Site (Con't): P96-9A

Field UTM Location: Zn: 08 U Easting: 0592648 Northing: 6903345 ±3 m AW camera Photo Nos.: 126-130 AW camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | /// |
| Turbidity (NTU) | |
| DO (mg/L) | /// |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|-----|-----|-----|-----|-----|
| Time () minute interval: | /// | /// | /// | /// | /// |
| Depth (m) | /// | /// | /// | /// | /// |
| Temperature (°C) | /// | /// | /// | /// | /// |
| pH | /// | /// | /// | /// | /// |
| Cond. (µs/cm) | /// | /// | /// | /// | /// |
| Specific Cond. (µs/cm) | /// | /// | /// | /// | /// |
| Redox (mV) | /// | /// | /// | /// | /// |
| DO (mg/L) | /// | /// | /// | /// | /// |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | /// | /// | /// | /// | /// |
| Interval Purge Volume (L) | /// | /// | /// | /// | /// |
| Cumulative Purge Volume (L) | /// | /// | /// | /// | /// |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features): |
|--|
| 2" x 2 PVC inside metal stick up - PVC both w/ caps + well sealed. PVC extends up past top of metal protector
Existing 5/8" x 1/4" inside P96-9A, just added 6" silicon + 1' of 1/4"
Well located just off road along small trail trail marked w/ flagging tape |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|---|
| Well Number: | SRK05-07 | Project Number: | 1343-005.02 | Date: | 12 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AS AN |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | clear cool light wind ~ 40c |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ No | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | < low flow | | | | |
| Initial Depth to Water (m): | 5.730 | Calculations: | Purge Start Time: | 1125 | Purge End Time: |
| Depth to Bottom (m): | 6.445 | 6.45 - 5.75 | Time (4) min. interval (24h) | 1129 | 1133 |
| Submerged Tubing Depth (m): | ~6.25 | = 0.7 | Depth (m) | 5.764 | 5.766 |
| Well Stick-up Height (m): | 0.69 | = 2 L/m | Temperature (°C) | 5.2 | 5.0 |
| Estimated Water Volume (L): | ~1.4 L | = 1.4 | pH | 6.88 | 6.85 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 2117 | 2117 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3406 | 3420 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / | / |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / | / |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | clear, no o/s |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.45 | 0.25 |
| | | | Cumulative Purge Volume (L) | 0.45 | 0.7 |
| | | | Total Purge Volume: ~1.5 L | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| Analysis | SRK05-07 | clear flow | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| SRK05-07 | Dis Metals
Total Metals
Gen Chem | 1145-1200 | 12/25ml plastic
12 L plastic | ☒ Yes
☒ No | 2.69 NTU at time of sample |
| | | | | | Dis Metals field filtered |

Same sample equipment as P01-01A except peri pump instead hydro lift



Sample Site (Con't): SRK05-07

Field UTM Location: Zn: 080 Easting: 0592375 Northing: 6903189 $\pm 4m$ 4N GPS Photo Nos.: 116-120 4N camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC w/ cap inside metal stick up w/ cover → just off side of road - all in good condition
5/8" + 1/4" already existing in well, just added 6" silicon + 1" of 1/4" tail |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--------------------------------------|---------------------------|----------------------|--|---------------|---|
| Well Number: | P09-VC2 | Project Number: | 1343-005.02 | Date: | 12 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AW |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | mostly clear, cool ~ 8°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: NO | Recovery: | ☒ Good ☐ Bad |

Purge Method

| | | | | | |
|------------|-------------|--------------|------------|----------|-------|
| Waterara | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| hydro lift | | | | | |

run hydro lift at speed to equal recharge

btec

| | | | | | | |
|--|--------|---------------|--|-----------------|-----------------|-----------------|
| Initial Depth to Water (m): | 1.555 | Calculations: | Purge Start Time: | 0845 | Purge End Time: | 0925 |
| Depth to Bottom (m): | 19.876 | 19.9 - 1.5 | Time (10 min. interval (24h)) | 0855 | 0905 | 0915 |
| Submerged Tubing Depth (m): | ~ 18.5 | ~ 18.4 | Depth (m) | 1.870 | 1.830 | 1.930 |
| Well Stick-up Height (m): | 0.94 | ~ 2.7m | Temperature (°C) | 4.2 | 4.2 | 4.0 |
| Estimated Water Volume (L): | ~ 37 | = 37 | pH | 7.30 | 7.39 | 7.39 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 248.9 | 118.0 | 244.6 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 413.4 | 195.7 | 406.9 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no odors | clear, no odors | clear, no odors |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 7 | 6 | 6 |
| | | | Cumulative Purge Volume (L) | 7 | 13 | 19 |
| | | | Total Purge Volume: | 25L | | |

| | | | | | | | |
|-----------|------------|---------------------------------------|--------------|-----------------------------------|--|---------------------------|-------------------------|
| Method | Waterara | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | hydro lift | | | | | | |
| Sample ID | P09-VC2 | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| | | DB Metals
Total Metals
Gen Chem | 0926-0929 | 1x 125ml plastic
1x 1L plastic | ☐ Yes
☒ No | 1.82 NTU @ time of sample | Dis Metals field filled |

Same sample equipment as P01-01A



Sample Site (Con't): P09-VC2

Field UTM Location: Zn: 08 V Easting: 0593517 Northing: 6903431 ± 2m AN GPS Photo Nos.: 106-110 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|--|
| 2" PVC w/ cap inside metal stick up protector w/ cover - all in good condition
Used existing 5/8" inside well |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|--|---|
| Well Number: | PO9-VC1 | Project Number: | 1343-005.02 | Date: | 12 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Cool, clear ~ 00°C
light wind |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ NO | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| hydro lift | | | | | |
| Initial Depth to Water (m): | 3.786 | Calculations: | Purge Start Time: | 1005 | Purge End Time: 1035 |
| Depth to Bottom (m): | 68.635 | 68.6 - 3.9 | Time (L) min. interval (24h) | 1015 1025 1035 | |
| Submerged Tubing Depth (m): | see over | = 64.8 | Depth (m) | 5.535 5.555 5.585 | |
| Well Stick-up Height (m): | 0.99 | > 2 L/m | Temperature (°C) | 4.1 4.0 3.9 | |
| Estimated Water Volume (L): | ~ 130 L | = 130 L | pH | 8.02 8.04 8.04 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 214.1 213.6 213.0 | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 355.9 356.2 356.1 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | [scribbles] | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | [scribbles] | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, sulphur odour, no o/s | same as previous |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 12.5 7.5 7.5 | |
| | | | Cumulative Purge Volume (L) | 12.5 20 27.5 | |
| | | | Total Purge Volume: | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Sisel Bailer | Subm. Pump |
| Analysis | hydro lift | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| PO9-VC1 | Dis Metals
Total Metals
Gen Chem | 1036 -
1040 | 1 x 125ml plastic
1 x 1L plastic | ☐ Yes
☒ No | 5.22 NTU at time of sample |
| | | | | | Dis Metals field filtered |

Same sample equipment as PO1-GIA / POA-VC2



Sample Site (Con't): PO9-VC1

Field UTM Location: Zn: 080 Easting: 0593518 Northing: ~~609~~ 6903418 $\pm 3m$ AN Cameron Photo Nos.: 111-115 AN Cameron

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data — Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) | |
|--|--|
| <p>2" PVC w/ cap not sealed → existing 5/8" tubing in well taped to top of casing, indicating it may be cut too short and may fall down ∴ submerged tubing depth is unknown (don't have a 60m roll of 5/8" to replace short tubing in place now)</p> <p>PVC inside metal stick up w/ cover - metal cover was taped shut helping to make up for no PVC cap</p> <p>Well casing and stick up at ~45° angle from vertical, DTW, DTB + Stick up height measured along angle</p> | |

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|--|-----------------------------|---|---|---|---------------------------|--------------|--------------|
| Well Number: | SRK05-8 | Project Number: | 1343-005.02 | Date: | 12 Sept 2014 | | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | | | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | clear, sunny, light wind ~ 7°C | | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | Yes No | Recovery: | ☒ Good ☐ Bad | | | |
| Purge Method | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | |
| | at low flow | | | | at low flow purge | | | |
| Initial Depth to Water (m): | 5.876 | Calculations: | Purge Start Time: | 12:19 | Purge End Time: | 12:39 | | |
| Depth to Bottom (m): | 6.489 | 6.5 - 5.9 | Time (4) min. interval (24h) | 12:23 | 12:27 | 12:31 | 12:35 | 12:39 |
| Submerged Tubing Depth (m): | ~7.75 | = 2.6 | Depth (m) | 5.990 | 6.026 | 6.040 | 6.061 | 6.051 |
| Well Stick-up Height (m): | 0.74 | > 2 L/m | Temperature (°C) | 5.2 | 5.2 | 5.4 | 5.4 | 5.4 |
| Estimated Water Volume (L): | ~5.2 L | ~ 5.2 | pH | 6.84 | 6.84 | 6.85 | 6.86 | 6.86 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1701 | 1768 | 1719 | 1718 | 1720 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 2740 | 2747 | 2741 | 2737 | 2730 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / | / | / | / | / |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / | / | / | / | / |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | " | " | " | clear no o/s |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.7 | 0.7 | 0.5 | 0.5 | 0.5 |
| | | | Cumulative Purge Volume (L) | 0.7 | 1.4 | 1.9 | 2.4 | 2.9 |
| | | | Total Purge Volume: | | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | |
| Analysis | | at low flow | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | |
| SRK05-8 | Dis Metals
Total Metals
Gen Chem | 1240 -
1256 | 1x 125ml plastic →
1x 1L plastic → | ☒ Yes
☒ No | 1.49 NTU at time of sample | Dis Metals field filtered | | |

b to c

drawdown will occur if purge at higher flow rate



Sample Site (Con't): SRK05-0

Field UTM Location: Zn: 08 U Easting: 0592582

Northing: 6903238 ± 3 m AN GPS

Photo Nos.: 121-125 AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | / / / / / |
| Turbidity (NTU) | |
| DO (mg/L) | / / / / / |
| | |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data – Continued from Front of Page (if required) | | | | | |
|--|---|---|---|---|---|
| Time () minute interval: | | | | | |
| Depth (m) | / | / | / | / | / |
| Temperature (°C) | / | / | / | / | / |
| pH | / | / | / | / | / |
| Cond. (µs/cm) | / | / | / | / | / |
| Specific Cond. (µs/cm) | / | / | / | / | / |
| Redox (mV) | / | / | / | / | / |
| DO (mg/L) | / | / | / | / | / |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | / | / | / | / | / |
| Interval Purge Volume (L) | / | / | / | / | / |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC (no metal protector) → found w/no j-plog on (was lying on ground) - replaced post sampling.
5/8" + 1/4" tubing already in well, just added 6" silicon + 1' 1/4" |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|------------------------|--|-----------------------------------|--|---|-------|
| Well Number: | BH14B | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | GMR + RM | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
14°C | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☐ Good ☒ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | w/ TRUCK | | | | | |
| Initial Depth to Water (m): | 4.090 | Calculations: | Purge Start Time: | 16:11 | Purge End Time: | |
| Depth to Bottom (m): | 10.060 | $5.97 \times 2 = 11.94$ | Time () min. interval (24h) | 16-16 | 16-23 | |
| Submerged Tubing Depth (m): | ~9.7 | | 16:30 | 16:38 | 14:46 | 14:52 |
| Well Stick-up Height (m): | 0.635 | | 5:07 | 5:54 | 5:91 | 6:34 |
| Estimated Water Volume (L): | 11.94 | | 5:91 | 6:34 | 6:76 | 7:01 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | 3:7 | 3:4 | 3:5 | 3:6 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | 6:74 | 6:67 | 6:70 | 6:73 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | | | | |
| | | Cond. (µs/cm) | | | | |
| | | Specific Cond. (µs/cm) | 3821 | 3868 | 3780 | |
| | | Resist (mV) | 1947 | 1970 | 1924 | |
| | | DO (mg/L) | | | | |
| | | Appearance & Odour (Clear, Silty, HC odours, etc.) | Slightly Milky → | Clear → | → | |
| | | Interval Purge Volume (L) | 2.5 | 1 | 1 | |
| | | Cumulative Purge Volume (L) | 2.5 | 3.5 | 4.5 | |
| | | Total Purge Volume: | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | |
| Analysis | | X | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| BH14B | 1. METALS
D. METALS | 14:59 | PLASTIC
1L
2X 125ML | ☒ Yes
☐ No | 12.5 | |
| Comments | | | | | | |
| STRAIGHT FORWARD BUT SLOW | | | | | | |

GEN CHEM
CORRECT NEW FORM FILLED OUT. FOR THIS. GMR.

OVERCAST 13°C
WATER W/ GEN. TURBIDITY = 3-10
SAMPLE TIME: 14:59
PURGE 5.7 17-48

DTW 11.898 m
DTB 18.34 m
SU 0.25 m

SEPT 12 2014
P96-006
WATER W/ GEN. TURBIDITY = 3-10
SAMPLE TIME: 14:59
PURGE 5.7 17-48

PURGE 5.7 17-48
TIME 17:51
DEPT 1.2
OC 1.6
CON 1970
TDS 1014
APPH 7.06
CUM 5

18:01
18:06
18:10
18:15

1.2
1.3
2.234
1137
7.06
12

1.2
1.2
2.073
1051
6.47
6

1.2
1.2
2.067
1053
6.45
6

CLEAR



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0585584 Northing: 6914005

Photo Nos.: 4464 + 4465

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 14:52 |
| Temperature (°C) | 3.5 |
| DO (mg/L) TDS (ppm) | 1909 |
| Specific Cond. (µs/cm) | 3744 |
| Cond. (µs/cm) | |
| pH | 6.74 |
| Redox (mV) | |
| Turbidity (NTU) | 12.5 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from previous page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| |
|---|
| <p>General Notes (Continued from other features):</p> <p>8" SILICON
0.5m per tubing 3/16"</p> |
|---|



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|------------------------|------------------------------------|--|--|---|
| Well Number: | P96-6 | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 |
| Approximate Date Drilled: | - | Client: | YG-AAM | Sampler: | RM + GMR |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
13°C |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| W/ GEN | | | | | |
| Initial Depth to Water (m): | 11.898 | Calculations: | Purge Start Time: | 17-48 | Purge End Time: 1815 |
| Depth to Bottom (m): | 18-34 | $6.442 \times 2 = 12.884$
$12L$ | Time () min. interval (24h) | 1756 | 1801 |
| Submerged Tubing Depth (m): | | | Depth (m) | 120 | |
| Well Stick-up Height (m): | 0.25 | | Temperature (°C) | 1.6 | 1.3 |
| Estimated Water Volume (L): | 12.88 | | pH | 7.06 | 7.06 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | | |
| | | | Specific Cond. (µs/cm) | 1970 | 2234 |
| | | | Redox (mV) TOS (PPM) | 1019 | 1139 |
| | | | DO (mg/L) | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | |
| | | | Interval Purge Volume (L) | 5 | 7 |
| | | Cumulative Purge Volume (L) | 5 | 12 | |
| | | Total Purge Volume: | 30 | | |
| Method: ☒ Waterra ☐ Peristaltic ☐ Disp. Bailer ☐ Sub. Bailer ☐ Subm. Pump ☐ Air Lift ☐ Other | | | | | |
| Analysis: ☒ | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P96-6 | T. METALS
D. METALS | 1816 | PLASTIC
1X 1L
2X 125 mL | ☒ Yes
☐ No | 3.10 |
| | | | | | STRAIGHT FORWARD
UTV USEFUL FOR ACCESS |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: _____

Easting: 0584902 Northing: 6913313 (WP37)

Photo Nos.: 4466

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 1816 |
| Temperature (°C) | 1-2 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 2067 |
| Cond. (µs/cm) | |
| pH | 6-45 |
| Redox (mV) TDS (PPM) | 1053 |
| Turbidity (NTU) | 3-10 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| |
|--|
| <p>General Notes (Condition of well or other features)</p> <p>No CONSUMABLES</p> |
|--|



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | |
|--|------------------------------|-------------------------------|--|--|---|-------------------|---------|-------------|--------------|------------|----------|-------|----------|--|--|--|--|--|--|
| Well Number: | BH14A | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | | | | | | | | | | | | | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | Rm + GMR | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST. 14°C | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| | w/ TRUCK | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 3.420 | Calculations: | Purge Start Time: | 15-28 | Purge End Time: 1600 | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 6.441 | 3L
3.021
x 2
= 6.042 | Time () min. interval (24h) | 15-38 | 15-43 | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | 3-85 | 3-855 | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.055 | | Temperature (°C) | 6.5 | 5.1 | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 6.042 | | pH | 6.45 | 6.56 | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3057 | 3866 | | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 1562 | 1972 | | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SLIGHT TURBIDITY | CLEAR | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.5 | 2 | | | | | | | | | | | | | | |
| | | Cumulative Purge Volume (L) | 0.5 | 2.5 | | | | | | | | | | | | | | | |
| | | Total Purge Volume: | 4.5 | 5.5 | | | | | | | | | | | | | | | |
| | | | 6.5 | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | Analysis | | | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | |
| Analysis | | | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | |
| BH14A | TOTAL METALS
DISS. METALS | 1600 | PLASTIC
1L
2X 125ML | ☒ Yes
☐ No | 8.19 | STRAIGHT FORWARD. | | | | | | | | | | | | | |

GEN CLEM.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0585584 Northing: 6914005 (WP36) Photo Nos.: 4464 + 4465

| Final Sample Data - Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 1600 |
| Temperature (°C) | 4.5 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 3950 |
| Cond. (µs/cm) | |
| pH | 6.57 |
| Redox (mV) Redox (mV) TDS (ppm) | 72000 |
| Turbidity (NTU) | 8.19 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (If Applicable) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) Redox (mV) TDS (ppm) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 8" Silicon
0.5 m perri tubing 3/16" |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--------------------------------------|------------------------|--|--|--|---|--------------------|-------|-------|
| Well Number: | BH13B | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | RM + GMR | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST.
14°C | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | | | |
| Purge Method | | | | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | |
| | ✓ W/ TRUCK | | | | | | | |
| Initial Depth to Water (m): | 2.690 | Calculations: | Purge Start Time: | 14-33 | Purge End Time: | | | |
| Depth to Bottom (m): | 4.40 | $(DTB - DTW) \times 2 \text{ (for 2" well diameter)} = 1 \text{ well volume}$
$(DTB - DTW) \times 1.1 \text{ (for 1.5" diameter)} = 1 \text{ well volume}$

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | Time () min. interval (24h) | 14-38 | 14-46 | 14-52 | 14-59 | 15-03 |
| Submerged Tubing Depth (m): | | | Depth (m) | 2.70 | 2.70 | 2.705 | 2.705 | 2.705 |
| Well Stick-up Height (m): | 0.745 | | Temperature (°C) | 2.2 | 1.6 | 1.5 | 1.5 | 1.6 |
| Estimated Water Volume (L): | 3.42 | | pH | 6.34 | 6.51 | 6.54 | 6.52 | 6.58 |
| | | | Cond. (µs/cm) | | | | | |
| | | | Specific Cond. (µs/cm) | 1176 | 1151 | 1146 | 1147 | 1150 |
| | | | Redox (mV) | 600 | 586 | 583 | 584 | 584 |
| | | | DO (mg/L) | | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR | CLEAR | CLEAR | CLEAR |
| | | | Interval Purge Volume (L) | 1.5 | 1.5 | 1.5 | 1 | 1 |
| | | Cumulative Purge Volume (L) | 1.5 | 3 | 4.5 | 5.5 | 6.5 | |
| | | Total Purge Volume: | | | | | | |
| Method | Watera | Peristaltic | Disp. Bailer | Sub. Bailer | Subm. Pump | Air Lift | Other | |
| Analysis | | ✓ | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | |
| BH13B | T. METALS
D. METALS | 15-04 | PLASTIC
1 x 1L
2 x 125 mL | ☒ Yes
☐ No | 2.06 | STRAIGHT FORWARDED | | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0585746 Northing: 6914494

(LP35)

Photo Nos.: 4463

| Final Groundwater Field Parameters - Following Purge | |
|--|-------|
| Time (hh:mm; 24h) | 15-04 |
| Temperature (°C) | 1.6 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 1150 |
| Cond. (µs/cm) | |
| pH | 6.58 |
| Redox (mV) TDS (ppm) | 584 |
| Turbidity (NTU) | 2.06 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if Required | | | | | |
|--|--|--|--|--|--|
| Time (___) minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| |
|--|
| <p>General Notes (Condition of well or other features)</p> <p>NO CONSUMABLES</p> |
|--|



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------|---|--|--|---|------------------|---------|-------------|--------------|--------------|------------|----------|-------|----------|--|--|--|--|--|--|--|
| Well Number: | BH5 | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | | | | | | | | | | | | | | | | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RM + GMR | | | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT 16°C | | | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | | | |
| | W/ TRUCK | | | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 2.199 | Calculations: | Purge Start Time: | 1242 | Purge End Time: | | | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 7.35 | <p>10L</p> <p>5.159</p> <p>X 2</p> <p>= 10.3L</p> | Time () min. interval (24h) | 1247 | 1252 | | | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | 2.20 | 2.20 | 2.20 | | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.69 | | Temperature (°C) | 4.5 | 4.0 | 3.7 | | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 10.302 | | pH | 5.6 | 5.54 | 5.50 | | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 713 | 673 | 662 | | | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TO5 (PPM) | 361 | 342 | 337 | | | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2 | 1 | 2 | | | | | | | | | | | | | | | |
| | | Cumulative Purge Volume (L) | 2 | 3 | 5 | | | | | | | | | | | | | | | | |
| | | Total Purge Volume: | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Steel Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | Analysis | | | | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| Analysis | | | | | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | | | |
| BH5 | T. METALS
DISS. METALS | 13-20 | PLASTIC
1L
2x 125 mL | ☒ Yes
☐ No | 7.85 | STRAIGHT FORWARD | | | | | | | | | | | | | | | |

GEN CHEM.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V

Easting: 0585088

Northing: 6913550 (WP 33)

Photo Nos.: 4461

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 13-26 |
| Temperature (°C) | 3.3 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 669 |
| Cond. (µs/cm) | |
| pH | 5.48 |
| Redox (mV) TDS (ppm) | 340 |
| Turbidity (NTU) | 7.85 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continues from Front Page if Required | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 8.5 m of PERI TUBING
8" OF SILICON TUBING
2" WELL CAP |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | |
|---|------------------------|-----------------------------|--|--|---|----------|---------|-------------|--------------|------------|----------|-------|----------|--|---|--|--|--|--|
| Well Number: | SRK08 - P12A | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | | | | | | | | | | | | | | |
| Approximate Date Drilled: | - | Client: | YG-AAM | Sampler: | GMR + RM | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGAT 16°C | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| | ✓ w/ TRUCK | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 2.105 | Calculations: | Purge Start Time: | 11-46 | Purge End Time: | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 12.735 | $10.63 \times 2 = 21.26 L$ | Time () min. interval (24h) | 11-52 | 11-57 | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | 12.1 | | Depth (m) | 2.14 | 2.14 | 2.14 → | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.72 | | Temperature (°C) | 2.4 | 1.8 | 1.7 | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 21.26 | | pH | 5.65 | 5.55 | 5.55 | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1275 | 1270 | 1272 | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 650 | 650 | 649 | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | Some turbidity → | | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 1.5 | 2.5 | | | | | | | | | | | | | |
| | | Cumulative Purge Volume (L) | 1.5 | 3.0 | 5.5 | | | | | | | | | | | | | | |
| | | Total Purge Volume: | 7.5 | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | Analysis | | ✓ | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | |
| Analysis | | ✓ | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | |
| SRK08 - P12A | T. METALS
D. METALS | 1218 | PLASTIC
1x 1L
2x 125 | ☒ Yes
☐ No | 18.1 | | | | | | | | | | | | | | |

GEN CHEM.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0585228 Northing: 6913687

Photo Nos.: 4459-4460

| Final Groundwater Field Parameters Following Purge | |
|--|------|
| Time (hh:mm; 24h) | 1218 |
| Temperature (°C) | 23 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 1255 |
| Cond. (µs/cm) | |
| pH | 5.6 |
| Redox (mV) TDS (PPM) | 640 |
| Turbidity (NTU) | 18.1 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 14 m PERI TUBING 3/16"
8" SILICON TUBING |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|------------------------------------|-----------------------------|--|--|---|----------------|
| Well Number: | SRK08-P12B | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RM + GMR | |
| Piezometer Diameter / Screen Length: | 2" ¹¹ | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT
16°C | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | W/ TRUCK! | | | | | |
| Initial Depth to Water (m): | 2.091 | Calculations: | Purge Start Time: | 11-08 | Purge End Time: | |
| Depth to Bottom (m): | 8.49 | 6.4
x 2
= 12.8 L | Time () min. interval (24h) | 11-14 | 11-20 | |
| Submerged Tubing Depth (m): | 8.0 | | Depth (m) | 2.095 | 2.092 | → → → |
| Well Stick-up Height (m): | 0.73 | | Temperature (°C) | 2.6 | 2.0 | 1.7 1.8 1.8 |
| Estimated Water Volume (L): | 12.8 | | pH | 5.60 | 5.63 | 5.61 5.63 5.61 |
| (DTB – DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 837 | 843 | 815 845 851 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 426 | 431 | 407 430 427 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | → | → → → |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 1 | 1.5 2 1.5 |
| | | Cumulative Purge Volume (L) | 1.5 | 2.5 | 4 6 7.5 | |
| | | Total Purge Volume: | 7.5 | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | |
| Analysis | | ✓ | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| SRK08
→ P12B | T. PARAMETERS
METALS | 11:45 | PLASTIC
1 x 1L
2 x 125 mL | ☒ Yes
☐ No | 3.98 | |
| | | | | | STRAIGHT FORWARD | |

DISS. METALS
GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0585228 Northing: 6913687

Photo Nos.: 4459 - 4460

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | 1.8 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 851 |
| Cond. (µs/cm) | |
| pH | 5.61 |
| Redox (mV) TDS (ppm) | 427 |
| Turbidity (NTU) | 3.98 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page if Required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 9.5 m PERI TUBING 3/16"
8" SILICON TUBING |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--------------------------|-----------------------------|--|--|---|---|
| Well Number: | BH10A | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMR + RM | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY 11°C | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | W/ BATTERY | | | | | |
| Initial Depth to Water (m): | 6.080 | Calculations: | Purge Start Time: | 10-08 | Purge End Time: | |
| Depth to Bottom (m): | 6.920 | $0.84 \times 2 = 1.68L$ | Time () min. interval (24h) | 10-14 | 10-19 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 6-11 | 6-11 | |
| Well Stick-up Height (m): | 1.65 | | Temperature (°C) | 4.3 | 3.6 | |
| Estimated Water Volume (L): | 1.68 | | pH | 6.43 | 6.24 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 443 | 444 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 226 | 227 | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 1 | |
| | | Cumulative Purge Volume (L) | 1 | 2 | 3.5 | |
| | | Total Purge Volume: | | | | |
| Method: Waterra Peristaltic Disp. Bailer Subm. Pump Air Lift Other
Analysis: W/ BATTERY | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| BH10A | T. METALS
DISS METALS | 10-49 | PLASTIC
1X 1L
2X 125ML | ☒ Yes
☐ No | 3.65 | WELL NOT LABELED ON ARRIVAL
LABELED BY RM. |

GEN CHEM

~~BH10A IS SHALLOW~~
~~BH10A IS DEEP~~
 BH10A IS SHALLOW
 BH10B IS DEEP



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 058512Z Northing: 6913711

Photo Nos.: 4457 + 4458
~~4455 + 4456~~

| Final Groundwater Field Parameters (Following Purge) | |
|--|---------------------|
| Time (hh:mm; 24h) | 10-49 |
| Temperature (°C) | 30.2 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 6.24 451 |
| Cond. (µs/cm) | |
| pH | 6.24 |
| Redox (mV) TDS (ppm) | 230 |
| Turbidity (NTU) | 3.65 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

9 m PERI TUBING 3/16"

8" SILICON TUBING

BH10B (DEEP WELL) WAS ACCIDENTALLY PURGED AND SAMPLED FIRST. DRAW DOWN ON BH10A (SHALLOW WELL) WAS ABOUT 2cm.



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | |
|--|---------------------------|--|--|--|---|--|-------|-------|----------------|-----|
| Well Number: | BH10A B | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | | | | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMR + RM | | | | | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT | | | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | | | | | |
| Purge Method | | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | |
| | W/ BATTERY | | | | | | | | | |
| Initial Depth to Water (m): | 5.311 | Calculations: | Purge Start Time: | 9-16 | Purge End Time: 9-59 | | | | | |
| Depth to Bottom (m): | 9.19 | <p>8L</p> <p>3.879</p> <p>X 2</p> <p>= 7.758 L</p> | Time () min. interval (24h) | 9-22 | 9-30 | 9-35 | 9-42 | 9-52 | 9-58 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 5-34 | 5-34 | 5-34 | 5-34 | 5-34 | 5-34 | |
| Well Stick-up Height (m): | 0.871 | | Temperature (°C) | 2.1 | 1.9 | 2.1 | 2.1 | 2.1 | 2.1 | |
| Estimated Water Volume (L): | 7.758 | | pH | 6.17 | 6.19 | 5.97 | 6.11 | 6.12 | 6.15 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 423 | 387 | 388 | 388 | 401 | 404 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 105 (11m) | 212 | 197 | 196 | 197 | 204 | 206 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SLIGHTLY TURBID MILKY | MILKY | MILKY | MILKY | MILKY | SLIGHTLY MILKY | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 1 | 2.5 | 2 | 2 | 1.5 | |
| | | | Cumulative Purge Volume (L) | 1 | 2 | 4.5 | 5.5 | 7.5 | 9 | |
| | | | Total Purge Volume: | | | | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | |
| Analysis | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | |
| BH10B | T. METALS
DIST. METALS | 9-59 | PLASTIC
1X 1L
2X 125ML | ☒ Yes
☐ No | 28.9 | WELLS NOT LABELED ON ARRIVAL
BH10B IS SHALLOW
BH10A IS DEEP
Labeled by RM.
MOOSE PELLETS | | | | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0585122 Northing: 6913711

(LP31)

Photo Nos.: 4457 - 4458
~~4455 - 4456~~

| Final Groundwater Field Parameters (Following Purge) | |
|--|--------------------|
| Time (hh:mm; 24h) | 9-59 |
| Temperature (°C) | 2.1 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 206 404 |
| Cond. (µs/cm) | |
| pH | 6.15 |
| Redox (mV) | TDS (ppm) 206 |
| Turbidity (NTU) | 28.9 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|------|--|--|--|--|
| Time () minute interval: | 9-59 | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| 10M OF PERI TUBING 3/16"
8" SILICON TUBING.
ACCIDENTALLY SA PURGED AND SAMPLED THE DEEP WELL FIRST (BH10B)
SHALLOW WELL (BH10A). DRAW DOWN WAS ~2CM. |

P09-VCL



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|---|------------------------|---------------------------------|--|--|---|------|
| Well Number: | P05-04 | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMYR + RM | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT ~ 4°C | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | ✓ W/BATTERY | | | | | |
| Initial Depth to Water (m): | 3.094 | Calculations: | Purge Start Time: | 8-35 | Purge End Time: 8-55 | |
| Depth to Bottom (m): | 7.025 | 8L
3.931
x 2
= 7.862 L | Time () min. interval (24h) | 8-41 | 8-46 | |
| Submerged Tubing Depth (m): | 6.67 | | 8-51 | 8-54 | | |
| Well Stick-up Height (m): | 0.67 | | 3-10 | 3-10 | | |
| Estimated Water Volume (L): | 7.862 | | Temperature (°C) | 1.7 | 1.8 | 1.8 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | pH | 5.96 | 5.92 | 5.94 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Specific Cond. (µs/cm) | 553 | 557 | 555 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | Redox (mV) TDS | 282 | 283 | 283 |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | DO (mg/L) | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | | |
| | | Interval Purge Volume (L) | 1.5 | 2 | 1.5 | |
| | | Cumulative Purge Volume (L) | 1.5 | 3.5 | 5 | |
| | | Total Purge Volume: | | | | |
| Method: Waterra Peristaltic Disp. Bailer Steel Bailer Subm. Pump Air Lift Other | | | | | | |
| Analysis | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| P05-04 | T. METALS
D. METALS | 8-56 | PLASTIC
1L + 2X125ML | ☒ Yes
☐ No | 0-81 | |
| | | | | | STRAIGHT FORWARD | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0585115

Northing: 6913650 (WP30)

Photo Nos.: 4453

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 8-56 |
| Temperature (°C) | 1-9 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 555 |
| Cond. (µs/cm) | |
| pH | 5-94 |
| Redox (mV) TDS (ppm) | 282 |
| Turbidity (NTU) | 0-81 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 8 m PERISTALTIC TUBING 3/16"
8" SILICON TUBING |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|------------------------|-----------------------------|--|--|---|-------|
| Well Number: | BH6 | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMR + RM | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT. ~4°C | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: DUP 8 | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | ✓ / BATTERY | | | | | |
| Initial Depth to Water (m): | 3.357 | Calculations: | Purge Start Time: | 7-58 | Purge End Time: | |
| Depth to Bottom (m): | 6.646 | 6.6 L
3.283
x 2
= | Time () min. interval (24h) | 8-03 | 8-08 | |
| Submerged Tubing Depth (m): | | | 8-13 | 8-19 | | |
| Well Stick-up Height (m): | 0.74 | | 3-38 | 3-36 | → 3-36 → | |
| Estimated Water Volume (L): | 6.56 | | Temperature (°C) | 2.9 | 2.3 | 2.2 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | pH | 5.66 | 5.82 | 5.86 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Specific Cond. (µs/cm) | 518 | 522 | 522 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | Redox (mV) TDS (ppm) | 264 | 264 | 266 |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | DO (mg/L) | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR → | → CLEAR | CLEAR |
| | | Interval Purge Volume (L) | 1.5 | 1 | 1 | |
| | | Cumulative Purge Volume (L) | 1.5 | 2.5 | 3.5 | |
| | | Total Purge Volume: | 5.5 | | | |
| Method | Watera | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | |
| Analysis | ✓ | ✓ | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| BH6 | T. METALS
O. METALS | 8.21 | PLASTIC
1L X 1
125ml X 2 | ☒ Yes
☐ No | 5.49 | |
| | | | | | Comments | |
| | | | | | DUP 8 COLLECTED.
STRAIGHT FORWARD. | |

GEN CHEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V

Easting: 0585092

Northing: 6913645 (WP 29)

Photo Nos.: 4452

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------------|
| Time (hh:mm; 24h) | <u>8-21</u> |
| Temperature (°C) | <u>2.2</u> |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | <u>522</u> |
| Cond. (µs/cm) | |
| pH | <u>5.85</u> |
| Redox (mV) <u>TOS (ppm)</u> | <u>266</u> |
| Turbidity (NTU) | <u>5-49</u> |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| <u>7.5 m of peristaltic tubing 3/16"</u>
<u>8" SILICON TUBING</u>
<u>1X 2" WELL CAP</u> |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|--|----------------------|--|---|---|---------------------------|-------|
| Well Number: | P09-LCD2 | Project Number: | 1343-005.02 | Date: | 13 Sept 2014 | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | | |
| Piezometer Diameter / Screen Length: | 2" PVC/unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cloudy, light rain, humid ~70C | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: No | Recovery: | ☒ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| | e low flow | | | | but low flow | | |
| Initial Depth to Water (m): | 3.741 | Calculations: | Purge Start Time: | 0900 | Purge End Time: 0925 | | |
| Depth to Bottom (m): | 7.350 | 7.35 - 3.75 | Time (3) min. interval (24h) | 0902 0906 0909 0912 0915 0918 | 0921 | | |
| Submerged Tubing Depth (m): | ~6.75 | ~3.6 m | Depth (m) | 3.760 3.780 3.786 3.795 3.805 | | | |
| Well Stick-up Height (m): | 0.95 | > 2 L/m | Temperature (°C) | 4.0 3.7 3.5 3.4 3.3 3.3 | 3.2 | | |
| Estimated Water Volume (L): | ~7.2 | = 7.2 L | pH | 7.29 7.16 7.11 7.12 7.14 7.13 | 7.17 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 561 559 559 561 562 562 | 563 | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 938 942 949 950 952 952 | 967 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / / / / / / | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / / / / / / | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | mostly clear, faint turbid, no o/s | same as previous | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.0 0.85 0.85 0.9 0.9 0.9 | 1.25 | | |
| | | | Cumulative Purge Volume (L) | 1.0 1.85 2.60 3.5 4.4 5.2 | 6.5 | | |
| | | | Total Purge Volume: | 7.7 L | OVER → | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | e low flow | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| P09-LCD2 | Dis Metals
Total Metals
Gen Chem | 0925-0932 | 1x25ml plastic
1x1L plastic | ☒ Yes
☒ No | 1.93 NTU @ time of sample | Dis Metals field filtered | |

Same sample equipment as P01-01A except per pump instead of hydro lift



Sample Site (Con't): P09-LCD1

Field UTM Location: Zn: 080 Easting: 0593358

Northing: 6903316 $\pm 3m$ AN EPS

Photo Nos.: 146-150 AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----------------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | / / / / / / / / |
| Turbidity (NTU) | |
| DO (mg/L) | / / / / / / / / |
| SEE OVER → | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|-----------------|------|--|--|--|
| Time (4) minute interval: | 6925 | data | | | |
| Depth (m) | 3.820 | | | | |
| Temperature (°C) | 3.1 | | | | |
| pH | 7.17 | | | | |
| Cond. (µs/cm) | 563 | | | | |
| Specific Cond. (µs/cm) | 968 | | | | |
| Redox (mV) | / / / / / / / / | | | | |
| DO (mg/L) | / / / / / / / / | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | clear no o/s | | | | |
| Interval Purge Volume (L) | 1.2 | | | | |
| Cumulative Purge Volume (L) | 7.7 | | | | |
| Total Purge Volume: | 7.7 | | | | |

General Notes (Condition of well or other features)

2" PVC w/ j-plug in tact w/ metal protector + lid - all in good condition
well ID marked faintly on stick up in sharpie
Existing $\frac{5}{16}$ " + $\frac{1}{4}$ " tubing in well, used $\frac{1}{4}$ " for low flow



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|--|---|---------------------------------|---|----------------------------|-----------------|---|---------------|
| Well Number: | PO9-LCD6 | | Project Number: | 1343-005.02 | | Date: | 13 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | | Client: | YG-AAM | | Sampler: | AB AN | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | light rain, cloudy, humid ~ 90C | |
| CHV (ppm / % LEL): | not recorded | | Duplicate Collected: | ☒ YES ☐ NO | | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift |
| | | e low flow | | | | | | |
| Initial Depth to Water (m): | 5.769 | Calculations:
$7.95 - 5.75 = 2.2$
$= 2.2 \text{ L/m}$
$= 4.4$ | Purge Start Time: | 1013 | | Purge End Time: | | 1031 |
| Depth to Bottom (m): | 7.930 | | Time (3) min. interval (24h) | 1016 | 1019 | 1022 | 1025 | 1028 |
| Submerged Tubing Depth (m): | ~7 | | Depth (m) | 5.815 | 5.821 | 5.835 | 5.833 | 5.845 |
| Well Stick-up Height (m): | 0.79 | | Temperature (°C) | 4.1 | 3.8 | 3.6 | 3.5 | 3.5 |
| Estimated Water Volume (L): | ~4.5L | | pH | 7.23 | 7.20 | 7.17 | 7.18 | 7.18 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 595 | 606 | 610 | 613 | 615 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | Specific Cond. (µs/cm) | 992 | 1020 | 1033 | 1040 | 1045 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | Redox (mV) | / / / / / / / / | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | DO (mg/L) | / / / / / / / / | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | clear, no o/s | " | " | " | clear, no o/s |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | Interval Purge Volume (L) | 1.0 | 6.75 | 6.75 | 6.75 | 6.75 | 6.75 |
| | | Cumulative Purge Volume (L) | 1.0 | 1.75 | 2.5 | 3.25 | 4.0 | 4.75 |
| | | Total Purge Volume: | | | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | |
| Analysis | e low flow | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | |
| PO9-LCD6 | Dis Metals
total Metals
Gen Chem | 10:32 -
1040 | 1x125ml plastic
1x1L plastic | ☒ Yes
☒ No | 5.96 NTU at time of sample | | Dis Metals field filtered | |

large
rate



Sample Site (Con't): PO9-LCD6

Field UTM Location: Zn: 08 U

Easting: 0593313

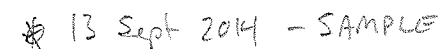
Northing: 6903251 ±3m AN GPS

Photo Nos.: 165-170 AN Camera
~~156-160 AN Camera~~

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if Required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC w/ j plug + metal stick up w/ cover - all in good condition. well ID in Sharpie on stick up
5/8" = 1/4" tubing inside well, used 1/4" for low flow sampling
Used same sample equipment as PO9-LCD1 |



12 Sept 2014 → pvrqc

11 Sept 2014 → purge

⊗ See Separate sheet for FB1 → field blank collected at this location

Other likely slightly too deep for peri pump so didn't attempt low flow based on V36

Sept 11, 16:33 → developed well dry, ~1.5 well volumes removed. Allow recharge overnight and direct sample tomorrow morning once fully recharged

Purge + Sample Summary: 11 Sept 2014 - purge details on previous page

12 Sept 2014: 0825 DTW = 11.138 DTB = 14.450 → did not fully recharge from overnight (purged dry yesterday afternoon) → leave for continued recharge
1735 DTW = 10.655 → very slow recharge - ~~developed~~ purged dry (manual water + foot valve) again removing limited water
↳ water initially gray & silty (~2.5c) then clear (~10c) before going dry

13 Sept 2014 0815 - DTW = 11.387 → proceed w/ direct sample via manual water + foot valve @ 13.0m submerged depth
↳ water faint light gray, no O/S 22 NTU



Sample Site (Cont): V37

Field UTM Location: Zn: 08 U Easting: 0593309 Northing: 6903079 ±5m AN EPS

Photo Nos.: 101-105, AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued Section From opp. page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC (no cap) inside metal stick up w/ cover, all covered w/ blue rain barrel. No plug or cap added, rain bucket provides cover |
| 5/8" water + existing in well, used for manual purge + sample. Existing tubing cut lower than top of casing so stick/branch jammed in end for retrieval → existing 5/8" cut too short, had to add new tubing (15m of 5/8") → re-used old foot valve |

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|---|---|--|---|
| Well Number: | SRK05-ETA-BR1 | Project Number: | 1343-005.02 | Date: | 13 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN |
| Piezometer Diameter / Screen Length: | 0.25m ID / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | overcast, light wind ~70C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ YES ☐ NO | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| e low flow | | | | | |
| Initial Depth to Water (m): | 7.051 | Calculations: | Purge Start Time: | 1138 | Purge End Time: |
| Depth to Bottom (m): | 13.266 | 13.25 - 7.15 = 6.1 | Time (5) min. interval (24h) | 1144 | 1146 |
| Submerged Tubing Depth (m): | ~12 | = 6.14m | Depth (m) | 7.050 | 7.050 |
| Well Stick-up Height (m): | 0.77 | = ~7.4 | Temperature (°C) | 7.1 | 6.0 |
| Estimated Water Volume (L): | ~7.4 | based on 1.5" well, this well actually smaller diameter than that | pH | 5.23 | 5.19 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 6375 | 6214 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 9759 | 9741 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | [wavy line] | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | [wavy line] | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | light brown, faint turbid no o/s | clear no o/s |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.6 | 1.25 |
| | | | Cumulative Purge Volume (L) | 0.6 | 1.85 |
| | | | Total Purge Volume: | 6.75 | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| Analysis | e low flow | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| SRK05-ETA-BR1 | Dis Metals
Total Metals
Gen Chem | 1207 - 1213 | 1x125ml plastic
1x2L plastic | ☐ Yes
☒ No | 1.16 NTU @ time of sample |
| | | | | | Dis Metals field filtered |

Sample sample equipment as P01-GIA except per pump instead hydro lift



Sample Site (Con't): SRK05-ETA-B21 *way point marked*

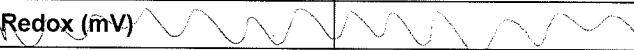
Field UTM Location: Zn: 08 U

Easting: 0582863

Northing: 6914019 $\pm$ 2m

AN camera

Photo Nos.: 61-65 AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|---|
| Time (hh:mm; 24h) | |
| Temperature ($^{\circ}$ C) | |
| DO (mg/L) | |
| Specific Cond. (μ S/cm) | |
| Cond. (μ S/cm) | |
| pH | |
| Redox (mV) |  |
| Turbidity (NTU) | |
| DO (mg/L) |  |
| ← SEE OVER | |
| | |

| Additional Purge Data — Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature ($^{\circ}$ C) | | | | | |
| pH | | | | | |
| Cond. (μ S/cm) | | | | | |
| Specific Cond. (μ S/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes: (Condition of well or other features) |
|--|
| 0.25m ID $\emptyset$ PVC tubing stick up in tailing area. Has cap and had 5/8" tubing in place, removed 5/8" tubing and replaced w/ 14m of 1/4" + 6" silicon for low flow sampling
↳ no metal stick up protruding PVC |

Same sample equipment as P01-01A except perist pump instead of hydro lift



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|--|---|
| Well Number: | SRK05-ETA-BR2 | Project Number: | 1343-005.02 | Date: | 13 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN |
| Piezometer Diameter / Screen Length: | 0.25m ID/ unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cloudy, cool, light wind ~7°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: DUP7 | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | @ low flow | | | | draw down |
| Initial Depth to Water (m): | 4.939 | Calculations: | Purge Start Time: | 12 15 | Purge End Time: |
| Depth to Bottom (m): | 19.342 | 19.35 - 4.95 | Time () min. interval (24h) | 1220 | 1225 |
| Submerged Tubing Depth (m): | ~18 | = 14.45 | Depth (m) | 5.377 | 5.455 |
| Well Stick-up Height (m): | 0.47 | ~14.5 | Temperature (°C) | 5.2 | 5.2 |
| Estimated Water Volume (L): | ~72 | ~14.5 | pH | 6.88 | 6.83 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | ~14.5 | Cond. (µs/cm) | 1748 | 1706 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | ~14.5 | Specific Cond. (µs/cm) | 2805 | 2746 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | ~14.5 | Redox (mV) | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | ~14.5 | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | ~14.5 | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | " " |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | ~14.5 | Interval Purge Volume (L) | 1.0 | 1.0 |
| | | ~14.5 | Cumulative Purge Volume (L) | 1.0 | 2.0 |
| | | ~14.5 | Total Purge Volume: | 7.0 | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | @ low flow | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| SRK05-ETA-BR2 | Dis Metals
Total Metals
Geo Chem | 12:51 -
13:02 | 125ml plastic
125ml plastic | ☒ Yes
☐ No | 4.17 NTU @ time of sample |
| | | | | | Dis Metals field filtered |

DUP 7 → same bottles and sample analysis as parent SRK05-ETA-BR2

Sample Site (Con't): SRK05-ETA-BR2

Waypoint marked

Field UTM Location: Zn: 080

Easting: 0582879

Northing: 6913997 ± 1m

AN GPS

Photo Nos.: 66-70 AN 5m

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features): |
|---|
| 0.25m 100 PVC tubing stick up in tailing area. No metal protector but PVC has cap.
was 5/8" tubing in place (red + black discoloured) but removed + replaced w/ 25m of 1/4" + 6" silicon for low flow sampling |

Sample sample equipment as SRK05-ETA-BR2



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|--|---|---|---|---|-------|-------|
| Well Number: | SRK04-3A | Project Number: | 1343-005.02 | Date: | 13 Sept 2014 | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | | |
| Piezometer Diameter / Screen Length: | 2" PVC/ unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cloudy, windy ~ 7°C | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ YES ☐ NO | Recovery: | ☒ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| | e low flow | | | | | | |
| Initial Depth to Water (m): | 6.133 | Calculations: | Purge Start Time: | 13:10 | Purge End Time: | | |
| Depth to Bottom (m): | 12.380 | $12.4 - 6.15 = 6.25$
$\approx 2 \text{ L/m}$
$= 12.5 \text{ L}$ | Time (Σ) min. interval (24h) | 13:15 | 13:20 | | |
| Submerged Tubing Depth (m): | ~ 11m | | Depth (m) | 6.150 | 6.165 | 6.160 | |
| Well Stick-up Height (m): | 0.65 | | Temperature (°C) | 5.5 | 5.6 | 5.6 | |
| Estimated Water Volume (L): | ~ 12.5 L | | pH | 3.30 | 4.08 | 5.02 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | 4843 | 4800 | 4901 | |
| | | | Specific Cond. (µs/cm) | 7720 | 7648 | 7792 | 10171 |
| | | | Redox (mV) | [wavy line] | | | 10178 |
| | | | DO (mg/L) | [wavy line] | | | 11 |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | " | " | " |
| | Interval Purge Volume (L) | | 2.0 | 2.0 | 2.0 | 2 | |
| | Cumulative Purge Volume (L) | 2.0 | 4 | 6 | 10 | | |
| | Total Purge Volume: | 24.7 NTU | | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | | |
| Analysis | | e low flow | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | |
| SRK04-3 | Dis Metals
Total Metals
Gen Chem | 1347 -
1353 | 1x 125ml plastic
1x 1L plastic | ☒ Yes
☒ No | 3.63 NTU @ time of sample | | |
| | | | | | Dis Metals field filtered | | |

b to c

1345
6.168
5.1
5.42
6285
10170
11
2
14



Sample Site (Con't): SRK04-3A

waypoint marked

Field UTM Location: Zn: 086

Easting: 0982870

Northing: 6913945 ± 1m AN EPS

Photo Nos.: 71-75 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--------------------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | <i>[wavy line]</i> |
| Turbidity (NTU) | |
| DO (mg/L) | <i>[wavy line]</i> |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features): |
|--|
| 2 x 2" PVC wells w/in metal stick up → PVC + metal stick up have caps
04-3A has 5/8" tubing existing in well, red/brown stained + discoloured, removed + replaced w/ 1/2" tubing (13m)
and 6" silicon for low flow |

Same sample equipment as SRK05-ETA-BR1 + 2



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|--|----------------------|--|--|---|---------------------------|-------|
| Well Number: | P09-ETA-2 | Project Number: | 1343-005.02 | Date: | 13 Sept 2014 | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AO AN | | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | mostly cloudy, light wind ~9°C | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | Yes NO | Recovery: | ☒ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| hydro lift | | | | | | | |
| Initial Depth to Water (m): | 12.969 | Calculations: | Purge Start Time: | 14:25 | Purge End Time: 15:00 | | |
| Depth to Bottom (m): | 18.500 | 18.5 - 13 = 5.5 m | Time (5) min. interval (24h) | 1430 1435 1440 1445 1450 1455 | 1500 | | |
| Submerged Tubing Depth (m): | ~17.5 | = 5.5 m | Depth (m) | 12.998 13.005 13.010 13.014 13.010 13.010 | 13.010 | | |
| Well Stick-up Height (m): | 0.70 | x 2 L/m | Temperature (°C) | 5.7 5.5 5.4 5.3 5.3 5.3 | 5.2 | | |
| Estimated Water Volume (L): | ~11 L | = 11 L | pH | 6.28 6.27 6.28 6.29 6.30 6.30 | 6.3 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 4183 4248 4278 4289 4295 4303 | 4299 | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 6651 6781 6838 6856 6875 6895 | 6901 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / / / / / / / / | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / / / / / / / / | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | " " " " " " | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 3.5 3.5 3.5 3.5 3.5 3.5 | 3.5 | | |
| | | | Cumulative Purge Volume (L) | 3.5 7 10.5 14 17.5 21 | 24.5 | | |
| | | | Total Purge Volume: | | | | |
| Method | Watera | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | hydro lift | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| P09-ETA-2 | Dis Metals
Total Metals
Gen Chem | 1502
- 1507 | 1 x 125ml plastic
1 x 1L plastic | ☐ Yes
☒ No | 2.95 NTU at time of sample | Dis Metals field filtered | |

Same sample equipment as P01-01A



Sample Site (Con't): POA-ETA-2

Field UTM Location: Zn: 08 U Easting: 0582700 Northing: 6913812 ± 3m AN EPS Photo Nos.: 155-160 APV Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features): |
|---|
| 2" PVC well w sealed plug inside metal stick up w cover - all in good condition
Existing 5/8" tubing in well |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | |
|--|--|-------------|---------------------------------|---|------------------------------|-------------------------------|---|---|--|
| Well Number: | PO9-ETA -1 | | Project Number: | 1343-005.02 | | Date: | 13 Sept 2014 | | |
| Approximate Date Drilled: | unknown in field | | Client: | YG-AAM | | Sampler: | AN AB | | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | mostly cloudy, light wind ~ 8°C | | |
| CHV (ppm / % LEL): | nd recorded | | Duplicate Collected: | ☒ ID: NO | | Recovery: | ☒ Good ☐ Bad | | |
| Purge Method | | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift | |
| hydro lift | | | | | | | | Other | |
| Initial Depth to Water (m): | | 8.672 | | Calculations: | | Purge Start Time: | | 1515 | |
| Depth to Bottom (m): | | 33.700 | | 33.7 - 8.7 | | Time (10 min. interval (24h)) | | 1525 1535 1545 1555 1605 1605 | |
| Submerged Tubing Depth (m): | | ~32 | | = ~25 | | Depth (m) | | 14.930 14.939 16.709 16.125 16.120 16.095 | |
| Well Stick-up Height (m): | | 0.90 | | > 2 L/m | | Temperature (°C) | | 4.5 7.2 5.9 7.2 7.4 7.5 | |
| Estimated Water Volume (L): | | ~50 L | | = 50 L | | pH | | 7.96 7.92 7.89 7.89 7.90 7.89 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | | Cond. (µs/cm) | | | | | 252.9 272.1 265.8 274.0 278.5 275.6 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | | Specific Cond. (µs/cm) | | | | | 415.4 411.0 416.0 415.1 416.7 417.2 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | | Redox (mV) | | | | | / / / / / / |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | | DO (mg/L) | | | | | / / / / / / |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | clear no o/s clear no o/s " " " " " " clear no o/s |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | | Interval Purge Volume (L) | | | | | 15 5 7.5 5.5 2.5 2.5 |
| Cumulative Purge Volume (L) | | | | | 15 20 27.5 33 35.5 38 | | | | |
| Total Purge Volume: | | | | | 38 | | | | |
| L purge slowed to match drawdown | | | | | | | | | |
| Method: | Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | |
| Analysis | hydro lift | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | | |
| PO9-ETA -1 | Dis Metals
Total Metals
Gen chem | 1607 - 1613 | 1x125ml plastic
1x1L plastic | ☒ Yes
☒ No | 11.4 NTU e
time of sample | | Dis Metals field filtered | | |

Same sample equipped as PO1-01A

b to c, measured on angle (see reverse)

try to purge to match drawdown



Sample Site (Con't): P09-ETA-1

Field UTM Location: Zn: 08 U Easting: 0582760 Northing: 6913813 ± 2m AN GPS

Photo Nos.: 155-160 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC Sealed w/ plug and metal stick up w/cover. PVC + stick up are at angle ~ 20° from vertical, concrete base is being washed out and eroded and may collapse + shift in future if not fixed / re-inforced

5/8" tubing existing in well |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|---|-----------------------------|---------------------------------|--|--|---|
| Well Number: | B48 | Project Number: | 1343-005.02 | Date: | SEPT 12 2014 |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | RMT + GMR |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY.
13°C |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☐ Good: ☒ Bad <i>see notes</i> |
| Purge Method | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| W/ GENERATOR. | PERISTALTIC | | | | |
| Initial Depth to Water (m): | 17.119 | Calculations: | Purge Start Time: | 13-48 14-03 | |
| Depth to Bottom (m): | 20.78 | <p>3.68
X 2
= 7.362</p> | Time () min. interval (24h) | 14-06 | 17-18 |
| Submerged Tubing Depth (m): | | | Depth (m) | DRY | 19-40 |
| Well Stick-up Height (m): | 0.79 | | Temperature (°C) | 6.1 | 8.1 |
| Estimated Water Volume (L): | 7.36 | | pH | 5.44 | 7.05 |
| <p>(DTB – DTW) x 2 (for 2" well diameter) = 1 well volume</p> <p>(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume</p> <p>2" casing has 0.16 USgal/ft or 2.032 l/m</p> <p>1" casing has 0.04 USgal/ft or 0.508 l/m</p> <p>8" sand pack has 0.73 USgal/ft or 9.271 l/m</p> <p>6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m</p> | | | Cond. (µs/cm) | | |
| | | | Specific Cond. (µs/cm) | 3146 | 2997 |
| | | | Redox (mV) | 1610 | 1530 |
| | | | DO (mg/L) | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | |
| | | | Interval Purge Volume (L) | 4 | 1 |
| | | Cumulative Purge Volume (L) | 4 | 6 | |
| | | Total Purge Volume: | | | |
| <p>Method: Watera Peristaltic Disp. Bailer Steel Bailer Subm. Pump Air Lift Other</p> | | | | | |
| Analysis | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| B48 | TOTAL METALS
DISS METALS | SEP 13, 2014
@ 8:30 | PLASTIC
1X1L
2X125ML | ☒ Yes
☐ No | 31.6
ON SEPT 13, 2014 |
| | | | | | Comments |
| | | | | | 1st PURGED DRY. — SEPT 12 AT 14-10.
2nd purged dry Sept 12 @ 17-23 |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 058 5148 Northing: 691 3777 (WP034) Photo Nos.: 4426

| Final Groundwater Field Parameters Following Purge | |
|--|----------------------|
| Time (hh:mm; 24h) | 17-21 (SEPT 12 2014) |
| Temperature (°C) | 5.1 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 1579 3088 |
| Cond. (µs/cm) | |
| pH | 5.1 7.05 |
| Redox (mV) 105 (PPM) | 1579 |
| Turbidity (NTU) | 31.6 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page if Required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features)

STARTED PURGING AT 13-48 BUT NEEDED LONGER TUBING, STOPPED.
CHANGED TUBING. RESTARTED AT 14-03. ~~Full~~ PURGED ~~100~~
23 m WATER/A 5/8" DRY TWICE THEN SAMPLED.
1 X FOOT VALVE.
1 X DEDICATED BAILER



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|---|---|---|
| Well Number: | SRK05-9 | Project Number: | 1343-005.02 | Date: | 13 Sept 2014 |
| Approximate Date Drilled: | unknown infield | Client: | YG-AAM | Sampler: | AB AN |
| Piezometer Diameter / Screen Length: | 1.5" PVC / unknown infield | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | mostly cloudy, ~17°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ YES ☐ NO | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| ↳ manual w/ footvalve then micro watera + footvalve | | | | | |
| Initial Depth to Water (m): | 2.736 | Calculations: | Purge Start Time: | 1710 | Purge End Time: |
| Depth to Bottom (m): | 3.954 | 3.95 - 2.75 = 1.2 m | Time (min) interval (24h) | 1713 1718 1721 1724 1733 1736 | 1739 1742 |
| Submerged Tubing Depth (m): | ~3.5 | = 1.2 m | Depth (m) | 2.775 2.815 2.880 | 2.880 2.885 2.875 |
| Well Stick-up Height (m): | 0.50 | = 1.1 L/m | Temperature (°C) | 7.7 7.0 6.4 6.0 | 6.4 6.0 6.0 |
| Estimated Water Volume (L): | ~1.35 | ~1.35 L | pH | 7.30 7.38 7.33 7.31 | 7.35 7.30 7.35 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1622 1529 1460 1434 | 1470 1460 1450 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 2415 2356 2278 2249 | 2291 2305 2292 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / / / / / | / / / |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / / / / / | / / / |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | light grey, murky, turbid, no o/s | same as previous, mostly clear, trace light green, mostly clear, no o/s |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2 2 3 1 0.5 0.5 | 0.5 0.5 0.5 |
| | | | Cumulative Purge Volume (L) | 2 2 3 4 4.5 5 | 5.5 6.0 |
| | | | Total Purge Volume: | 6.0 | 36.7 NTU |
| Method: | Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| Analysis | micro + footvalve | manual purge/sample | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| SRK05-9 | Dis Metals
Total Metals
Gen Chem | 1743
- 1755 | 1x125ml plastic
1x16 plastic | ☒ Yes
☒ No | 19.9 NTU from sample bottle (gen chem) |
| | | | | | Dis metals field filtered |

Same YST, water level type + turbidity meter as P01-012

17:24 end 3/8" manual purge

17:30 - start 3/16 micro watera purge



Sample Site (Con't): SRK05-9

Field UTM Location: Zn: 08 U Easting: 0592949 Northing: 6903158 ± 3m AN GPS

Photo Nos.: 161-165 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features):

1.5" PVC well w/ yellow stickler ID and cap on

Existing 1/4" in well and 5/8" as well on ground & added 4m of 5/8" (clean, not from ground) for manual purge as we don't have battery power for peristaltic pump today

↳ Purged 3 well volumes w/ 5/8" then add 4m of 3/4" micro in terra + foot valve for final purge and allow turbidity settle for sampling



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|-----------------------------|-----------------------------|--|--|--|
| Well Number: | MW14-125 | Project Number: | 1343-005.02 | Date: | SEP 13 2014 |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GML + RM |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST ~ 11°C |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☒ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | ✓ w/ Battery | | | | |
| Initial Depth to Water (m): | 2.004 | Calculations: | Purge Start Time: | 10-27 10-27 | Purge End Time: 11-12 |
| Depth to Bottom (m): | 3.920 | $1.916 \times 2 = 3.832$ | Time () min. interval (24h) | 10-30 | 10-39 |
| Submerged Tubing Depth (m): | | | Depth (m) | 2:36 | 2:74 |
| Well Stick-up Height (m): | 0.995 | | Temperature (°C) | 5.1 | 5.1 |
| Estimated Water Volume (L): | 3.832 | | pH | 6.07 | 6.06 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 614 | 583 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 311 | 298 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SOME MUD | TURBID |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 1.5 |
| | | Cumulative Purge Volume (L) | 1 | 2.5 | |
| | | Total Purge Volume: | 7.5 | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Disp. Bailer | Subm. Pump |
| Analysis | | | | PLASTIC BAILER | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| MW14-125 | TOTAL METALS
DISS METALS | 13-34 | PLASTIC
1L
2x 125ml | ☒ Yes
☐ No | 22.5 |
| | | | | | Comments |
| | | | | | STRAIGHT FORWARD |

GEN CHEM

Flowing
RECHARGE



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584858 Northing: 6913264 (WP040) Photo Nos.: 4470

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 13-34 |
| Temperature (°C) | 5.6 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 621 |
| Cond. (µs/cm) | |
| pH | 6.12 |
| Redox (mV) +05 (PPM) | 339 |
| Turbidity (NTU) | 22.5 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 5 m PERI TUBING 3/16" + NEW BAILER
8" SILICON TUBING
WELL WAS PURGED WITH PERISTALTIC PUMP (7.5 L) THEN LEFT TO RECHARGE.
RECOMMEND ^{DO NOT} (FOR NEXT TIME) PURGING THIS WELL FIRST IN THIS AREA AND WORKING ON ALL THIS ONE
WELL FIRST BEFORE RETURNING WITH A BAILER TO SAMPLE THE WELL.
WELL HAS A DEDICATED BAILER. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--|-----------------------------|---|--|---|-------------------|
| Well Number: | MW14-12D | Project Number: | 1343-005.02 | Date: | SEPT 13 2014 | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMK + RM | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: ☒ None | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Watertra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | ☒ w/ battery | | | | | |
| Initial Depth to Water (m): | 1.902 | Calculations: | Purge Start Time: | 11-16 | Purge End Time: 11-52 | |
| Depth to Bottom (m): | 6.350 | 4.45
x 2
= 8.9L | Time () min. interval (24h) | 11-19 | 11-23 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 1.90 | 1.9 | 1.90 → → → |
| Well Stick-up Height (m): | 0.925 | | Temperature (°C) | 3.7 | 3.3 | 3.0 → → → |
| Estimated Water Volume (L): | 8.9 | | pH | 6.01 | 6.02 | 5.90 → → → |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 579 | 3076.0 | 651 → → → |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 291 | 604.3R | 333 → → → |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | TURBID | SOME TURBIDITY → | SLIGHTLY TURBID → |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 0.5 | 3.5 → → → |
| | | Cumulative Purge Volume (L) | 1 | 1.5 | 5 → → → | |
| | | Total Purge Volume: | | | | |
| Method: | Watertra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | |
| Analysis | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| MW14-12D | T. METALS
D. METALS
GEN. CHEM. | 11-52 | PLASTIC
1L
2X 125 mL | ☒ Yes
☐ No | 1.53 | |
| | | | | | Comments | |
| | | | | | VARIED PURGE RATE
STRAIGHT FORWARD | |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584858 Northing: 6913264

Photo Nos.: 4471-4473

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 11-52 |
| Temperature (°C) | 2.9 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 780 |
| Cond. (µs/cm) | |
| pH | 5.82 |
| Redox (mV) TDS (ppm) | 397 |
| Turbidity (NTU) | 1.53 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 7.5 m perli tubing
8" silicon tubing |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--------------------------|-----------------------------|--|--|---|------|
| Well Number: | MW14-16 | Project Number: | 1343-005.02 | Date: | SEPT 13 2014 | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | RM + GMR | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
10°C | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE. | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | W/ BATTERY | | | | 9-32 | |
| Initial Depth to Water (m): | 4.985 | Calculations: | Purge Start Time: | 9-11 | Purge End Time: 9-32 | |
| Depth to Bottom (m): | 6.90 | 1.92
x 2
3.84 L | Time () min. interval (24h) | 9-15 | 9-21 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 4.98 | 4.98 | → → |
| Well Stick-up Height (m): | 0.98 | | Temperature (°C) | 2.8 | 2.2 | 2.2 |
| Estimated Water Volume (L): | 3.84 | | pH | 5.85 | 5.90 | 5.94 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1538 | 1559 | 1529 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (PPM) | 786 | 795 | 779 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | → | → |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 1.5 | 1.5 |
| | | Cumulative Purge Volume (L) | 1 | 2.5 | 4 | |
| | | Total Purge Volume: | | | | |
| Method: | Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | |
| Analysis | | ✓ | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| MW14-16 | T. METALS
DISS METALS | 9-33 | PLASTIC
1X1L
2X125ML | ☒ Yes
☐ No | 2.14 | |
| | | | | | STRAIGHT FORWARD | |

GEN CHEM.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584887

Northing: 6913289

(L1738)

Photo Nos.: 4468

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 9-33 |
| Temperature (°C) | 23 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 1510 |
| Cond. (µs/cm) | |
| pH | 5.92 |
| Redox (mV) TDS (ppm) | 770 |
| Turbidity (NTU) | 2.14 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data – Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features):

8.5 m PERI TUBING 3/16"
8" SILICON TUBING.



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|-------------------------|------------------------------|--|--|---|-------|
| Well Number: | MW14-13 | Project Number: | 1343-005.02 | Date: | SEPT 13 2014 | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMR + RM | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | LIGHT RAIN
10°C | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: DUP 10. | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | ✓ w/ BATTERY | | | | | |
| Initial Depth to Water (m): | 3.365 | Calculations: | Purge Start Time: | 9-48 | Purge End Time: 10-09 | |
| Depth to Bottom (m): | 5.005 | $= 1.64$ $\times 2$ $= 3.28$ | Time () min. interval (24h) | 9-52 | 9-59 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 3-37 | 3-37 | |
| Well Stick-up Height (m): | 0.99 | | Temperature (°C) | 3-3 | 2-3 | 2-2 |
| Estimated Water Volume (L): | 3.28 | | pH | 5-70 | 5-69 | 5-67 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1581 | 1620 | 1620 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | +05 (PPM) | 806 | 826 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR | CLEAR |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 2 | 1.5 |
| | | Cumulative Purge Volume (L) | 1.5 | 3.5 | 5 | |
| | | Total Purge Volume: | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | |
| | | ✓ | | | | |
| Analysis | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| MW14-13 | T-METALS
DISS METALS | 10-10 | PLASTIC
1L X 1
125ML X 2 | ☒ Yes
☐ No | 1.51 | |
| | | | | | STRAIGHT FORWARD | |

GEN CHEM.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V

Easting: 058494

Northing: 6913285

(LWP039)

Photo Nos.: 4469

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 10:10 |
| Temperature (°C) | 2.3 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 1612 |
| Cond. (µs/cm) | |
| pH | 5.67 |
| Redox (mV) TDS (ppm) | 826 |
| Turbidity (NTU) | 1.51 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features)

6 m per tubing 3/16
8" silicon tubing

GROUNDWATER SAMPLE COLLECTION SHEET

P1/4

| | | | | | |
|--|--|----------------------|---|--|---|
| Well Number: | P2001-2A | Project Number: | 1343-005.02 | Date: | 11 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AW |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Partially cloudy, light wind ~ 8°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ Yes ☐ No | Recovery: | ☐ Good ☒ Bad |
| Purge Method | | | | | |
| Watertra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | a low flow | | | | low flow |
| Initial Depth to Water (m): | 3.997 | Calculations: | Purge Start Time: | 1237 | Purge End Time: |
| Depth to Bottom (m): | 6.595 | 6.6 - 4 | Time (5) min. interval (24h) | 1242 | 1247 |
| Submerged Tubing Depth (m): | ~ 5.5 (raised to 5.5) | 2.6 m | Depth (m) | 4.171 | 4.235 |
| Well Stick-up Height (m): | 0.53 | 2.21 m | Temperature (°C) | 6.5 | 6.4 |
| Estimated Water Volume (L): | ~ 5.25 | ~ 5.25 | pH | 6.74 | 6.73 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 212.0 | 209.4 |
| (DTB - DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 326.1 | 324.9 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | light grey, slight turbid | Same as previous |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.35 | 0.35 |
| | | | Cumulative Purge Volume (L) | 0.35 | 0.7 |
| | | | Total Purge Volume: | 1.7 | |
| Method | | | | | |
| Watertra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | a low flow | | | | |
| Analysis | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P2001-2A | Dis Metals
Total Metals
Geo Chem | 1309
1321 | 1x125ml plastic
1x1L plastic | ☐ Yes
☒ No | 56.5 NTU at end of purge |
| Comments | | | | | |
| Dis Metals field filtered | | | | | |

UPDATE 13 Sept 2014

18:30 SAMPLE poured out + bottles destroyed)

no longer exists - see page 3 + 4 of 4

Same sample equipment as P2001-2B except per pump + low flow instead hydro lift

water turned very turbid while filling 2 L general chem bottle
filled 100ml + stopped because of turbidity

pump running @ slowest possible speed, drawdown minimized to extent possible, water seems to stay same colour clarity during purge



Sample Site (Con't): P2001-2A

Field UTM Location: Zn: 08 U Easting: 0593132 Northing: 6902866 ±3m AN GPS

Photo Nos.: 91-95 AN (Gueron)

| Final Site Indicators - Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Form of Page 5 (continued) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| <p>2 x 2" PVC both w/caps inside (tested) in metal stick up w/ cover</p> <p>Existing 5/8" + 1/4" tubing inside well, used 1/4" for low flow, just added 6" silicon + 2' 1/4" tail</p> |



GROUNDWATER SAMPLE COLLECTION SHEET

P 3/4
= 13 Sept 2014

See
P 1/4

| | | | | | |
|--------------------------------------|----------|----------------------|---------------------------------|---------------|---|
| Well Number: | P2001-2A | Project Number: | 1343-005.02 | Date: | 12 Sept 2014 |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | AB AN |
| Piezometer Diameter / Screen Length: | | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | mostly clear, cool ~ -2°C |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: | Recovery: | ☐ Good ☒ Bad |

08:00

| Purge Method | | | | | |
|--------------|-------------|--------------|------------|----------|-------|
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | | | | | |

| | | | | | | | |
|--|--|-----------------------------|--|-----------------|--|--|--|
| Initial Depth to Water (m): | | Calculations: | Purge Start Time: | Purge End Time: | | | |
| Depth to Bottom (m): | | | Time () min. interval (24h) | | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | | | | |
| Well Stick-up Height (m): | | | Temperature (°C) | | | | |
| Estimated Water Volume (L): | | | pH | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | Interval Purge Volume (L) | | | | | |
| | | Cumulative Purge Volume (L) | | | | | |
| | | Total Purge Volume: | | | | | |

| Method | Waterra | Peristaltic | Disp. Bailer | Sub. Bailer | Subm. Pump | Air Lift | Other |
|-----------|--|-----------------------|-------------------------------------|--|--|---|-------|
| Analysis | | | 2 L plastic | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| P2001-2A | Dis Metals
Total Metals
Gen Chem | 18:20
13 Sept 2014 | 1x 125 ml plastic
1x 1 L plastic | ☐ Yes
☒ No | Not recorded at well
from gen chem bottle
= 13.9 NTU | Dis Metals field filtered
collected last | |

→ SAMPLE FOR LAB SUBMIT + ANALYSIS

Sample Site (Con't): P2001-2A

See Page 2/4

Field UTM Location: Zn: _____ Easting: _____ Northing: _____ Photo Nos.: _____

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Connected to Pump (Optional, Page 4 Required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of Well or Other Features) | |
|--|--|
| <p>Purge + Sample Summary:</p> <p>11 Sept 2014: attempted purge + sample collect w/ low flow peristaltic → filled 2 x metals bottles + 1/3 gen dem bottles w/ GW w/ stable parameters, mostly clear (~50 NTU) and minimal draw down until change very grey + silty → stopped sample collect</p> <p>- purged dry w/ 5/8" + foot valve, water very dark gray + silty</p> <p>12 Sept 2014: 0815 DTW = 4.025 DTB = 6.575 } → essentially fully recharged. Developed ~15L of very dark grey + silty water until dry → well screen maybe broken? Recharged w/ very dark grey/silty water from previous day being dry</p> | |

→ 1715- DTW = 4.015 → fully recharged during day - ~~developed~~ purged dry (manual water valve) for third time, yielding very dark grey + very silty water → will attempt direct sample w/ low flow tomorrow to see if clear sample is possible

→ checked DTB of 6.265 → developing well is causing sediment intrusion as well screen must be compromised

13 Sept 2014 08:15- pulled existing 5/8" + 1/2" tubing from well → leave for day to settle (as per R/M) to sample direct w/ bailer

pt 2014 18:15 - DTW = 4.009m → proceed w/ direct sample using 1 x disposable plastic bailer (see page 3/4)



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------------------------------------|----------------|--|--|----------------------------|--|---|-----------------|---------|---------|-------------|--------------|--------------|------------|----------|-------|----------|--|------------|--|--|--|--|--|
| Well Number: | POA - GS±A | | Project Number: | 1343-005.02 | | Date: | 14 Sept 2014 | | | | | | | | | | | | | | | | | |
| Approximate Date Drilled: | unknown in field | | Client: | YG-AAM | | Sampler: | AB AN | | | | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | mostly clear ~ 5°C | | | | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | not recorded | | Duplicate Collected: | ☒ NO: No | | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift | | | | | | | | | | | | | | | | |
| | | e low flow | | | | | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 2339 | | Calculations: | Purge Start Time: | | 838 | | Purge End Time: | | | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 7.373 | | $7.35 - 2.35 = \sim 5m$
$\times 2 L/m = \sim 10 L$
$= \sim 10 L$ | Time (5) min. interval (24h) | | 843 848 853 858 903 908 | | | | | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | ~ 6.5 | | | Depth (m) | | 2.350 2.355 2.360 2.365 2.365 2.365 | | | | | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 1.24 | | | Temperature (°C) | | 8.1 8.1 8.1 8.1 8.1 8.1 | | | | | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | ~ 10 L | | | pH | | 6.80 6.76 6.75 6.75 6.76 6.76 | | | | | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB - DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | | Cond. (µs/cm) | | 853 852 852 851 849 850 | | | | | | | | | | | | | | | | | | |
| | | | | Specific Cond. (µs/cm) | | 1258 1259 1257 1255 1253 1255 | | | | | | | | | | | | | | | | | | |
| | | | | Redox (mV) | | / / / / / / | | | | | | | | | | | | | | | | | | |
| | | | | DO (mg/L) | | / / / / / / | | | | | | | | | | | | | | | | | | |
| | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | clear no o/s - - clear no o/s / / clear no o/s | | | | | | | | | | | | | | | | | | |
| | | | | Interval Purge Volume (L) | | 3 3 3 3 3 3 | | | | | | | | | | | | | | | | | | |
| Cumulative Purge Volume (L) | | 3 6 9 12 15 18 | | | | | | | | | | | | | | | | | | | | | | |
| Total Purge Volume: | | 18 L | | | | | | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method:</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Steel Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td>e low flow</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | | | | | | | | | Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | Analysis | | e low flow | | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | | | | |
| Analysis | | e low flow | | | | | | | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | | | | | | | | | | | | | | | | | |
| POA - GS±A | Dis Metals
Total Metals
Clear | 0909
0914 | 1x125ml plastic jar
1x1L plastic jar | ☐ Yes
☒ No | 1.35 NTU at time of sample | | Dis Metals field filtered | | | | | | | | | | | | | | | | | |



Sample Site (Con't): P09-GSIA

Field UTM Location: Zn: 080

Easting: 0592494

Northing: 6904832 ±2m 4N GPS

Photo Nos.: ~~176-180~~ 171-175
AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC w/cap inside metal stick up protector (no well ID on protector - verified by DTB)
↳ PVC sticks up higher than stick up protector so can't use hydralift and stick up lid doesn't close
1/4" + 5/8" already in well |

Same sample equipment as P01-GIA except per pump instead hydralift



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|--|----------------------|--|---|---|---------------------------|-------|
| Well Number: | P09 - GSI B | Project Number: | 1343-005.02 | Date: | 14 Sept 2014 | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | | |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | mostly clear ~7°C | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ NO: NO | Recovery: | ☒ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| | at low flow | | | | | | |
| Initial Depth to Water (m): | 2.170 | Calculations: | Purge Start Time: | 0930 | Purge End Time: 1030 | | |
| Depth to Bottom (m): | 29.710 | 29.7 - 2.2 | Time (5 min. interval (24h)) | 0935 0940 0945 0950 0955 1000 | 1005 | | |
| Submerged Tubing Depth (m): | ~26m | = 27.5 m | Depth (m) | 2.895 3.440 3.595 3.800 4.005 4.145 | 4.270 | | |
| Well Stick-up Height (m): | 0.92 | = 2.2 m | Temperature (°C) | 5.6 5.6 6.0 6.0 6.0 5.9 | 6.2 | | |
| Estimated Water Volume (L): | ~55L | = 55L | pH | 6.77 6.74 6.76 6.75 6.76 6.76 | 6.76 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 98.3 98.6 104.2 108.1 113.5 116.0 | 123.8 | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 156.2 156.6 164.0 170.5 176.6 184.0 | 193.0 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | /// | /// | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | /// | /// | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear no o/s " " " " " " | clear no o/s | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 2.0 2 1.75 1.75 1.75 1.75 | 1.75 | | |
| | | | Cumulative Purge Volume (L) | 2.0 4 5.75 7.5 9.25 11 | 12.75 | | |
| | | | Total Purge Volume: | 18L | OVER → | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | at low flow | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| P09 - GSI B | Dis Metals
Total Metals
Gen Chem | 1021 - 1026 | 1x 125ml plastic
1x 12 plastic | ☒ Yes
☒ No | Turbidity at time of Sample = 3.24 NTU | Dis Metals field filtered | |

Save sample equipment as adjacent "A" well

Sample Site (Con't): P09 - GSTB

Field UTM Location: Zn: 080 Easting: 0592485 Northing: 6904833 ± 3m AN EPS

Photo Nos.: 176-180 AN camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE OVER → | |

Continued
from
previous
page

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--------------|-------|--------------|--|--|
| Time (5) minute interval: | 10:10 | 10:15 | 10:20 | | |
| Depth (m) | 4.355 | 4.415 | 4.480 | | |
| Temperature (°C) | 6.765 | 6.2 | 6.1 | | |
| pH | 6.1 | 6.76 | 6.76 | | |
| Cond. (µs/cm) | 126.4 | 128.7 | 129.5 | | |
| Specific Cond. (µs/cm) | 197.7 | 201.6 | 204.0 | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | clear no o/s | " " | clear no o/s | | |
| Interval Purge Volume (L) | 1.75 | 1.75 | 1.75 | | |
| Cumulative Purge Volume (L) | 14.5 | 16.25 | 18 | | |
| Total Purge Volume: | 18 L | | | | |

| General Notes (Condition of well or other features) |
|---|
| <p>2" PVC w/ cap inside well stick up protector w/ lid → all in good condition</p> <p>1/4" PVC tubing already in well for low flow sampling</p> |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|---|
| Well Number: | SRK08-P15 | Project Number: | 1343-005.02 | Date: | 14 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | overcast, mix sun + cloud ~12°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: NO | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | @ low flow | | | | |
| Initial Depth to Water (m): | 3.178m | Calculations: | Purge Start Time: | 13 08 | Purge End Time: |
| Depth to Bottom (m): | 8.275m | 6.3-3.2 | Time (4) min. interval (24h) | 13 12 | 13 16 |
| Submerged Tubing Depth (m): | ~7.5 | ~5.1 | Depth (m) | 3.203 | 3.212 |
| Well Stick-up Height (m): | 0.37 | ~2.2/m | Temperature (°C) | 3.0 | 3.1 |
| Estimated Water Volume (L): | ~10.2 | ~10.2 L | pH | 7.03 | 6.96 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 174.2 | 98.3 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 298.0 | 167.3 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / | / |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / | / |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear no o/s | " " |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 1 |
| | | | Cumulative Purge Volume (L) | 1 | 2 |
| | | | Total Purge Volume: | 10 L | → see next page |
| Method | Watera | Peristaltic | Disp. Bailer | Sub. Bailer | Subm. Pump |
| Analysis | | @ low flow | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| SRK 08-P15 | Dis Metals
Total Metals
Gen Chem | 13:50
- 14:00 | 1 x 125ml plastic
1 x 1L plastic | ☒ Yes
☒ No | 6.40 NTU @ time of sample |
| | | | | | Comments |
| | | | | | Dis Metals field filtered |

bloc

1336

2.9

6.96

118.3

205.3

///

///

///

clear no o/s

1

7

OVER →

Sample Site (Con't): SRK08-P15

↗ w/ point marked on GPS

Field UTM Location: Zn: 08 U Easting: 0591960

Northing: 6903534 ± 0m

↗ continued from previous page AN GPS

Photo Nos.: 181-185 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|---------------------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | / / / / / / / / / / |
| Turbidity (NTU) | |
| DO (mg/L) | / / / / / / / / / / |
| SEE OVER → | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|
| Time (4) minute interval: | 1340 | 1344 | 1348 | 1352 | |
| Depth (m) | 3.216 | 3.220 | 3.223 | | |
| Temperature (°C) | 2.9 | 2.9 | 2.8 | | |
| pH | 6.96 | 6.94 | 6.97 | | |
| Cond. (µs/cm) | 120.7 | 121.5 | 122.7 | | |
| Specific Cond. (µs/cm) | 209.3 | 211.0 | 214.1 | | |
| Redox (mV) | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / |
| DO (mg/L) | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | " " | clear no o/s | | |
| Interval Purge Volume (L) | 1 | 1 | 1 | | |
| Cumulative Purge Volume (L) | 8 | 9 | 10 | | |
| Total Purge Volume | 10 L | | | | |

| General Notes (Condition of well or other features) |
|--|
| <p>2" PVC well (cap on ground, not sealed) w/ 5/8" tubing sticking out top. PVC inside metal stick up w/ lid</p> <p>↳ put cap back on well after purge + sample. Added 9m 1/4" + 6" silicon for low flow sampling</p> <p>↳ Metal tag + sharpie under stick up cap w/ well ID</p> <p>↳ Located on walking trail/road at toe of waste rock dump - first access from below "Moose Pond" road while hiking + searching, but proper access w/ sampling equipment + vehicle is from above going up + over and back down around sulphide cell from main haul road</p> |

→ Same sample equipment as P01-G1A except per pump instead hydroFL.

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|---|
| Well Number: | SRK08 - P14 | Project Number: | 1343-005.02 | Date: | 14 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AS AN |
| Piezometer Diameter / Screen Length: | 2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | mostly clear, mainly sunny ~ 12°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: DUP 9 | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | at low flow | | | | |
| Initial Depth to Water (m): | 6.710 | Calculations: | Purge Start Time: | 1436 | Purge End Time: 1500 |
| Depth to Bottom (m): | 9.875 | 9.9 - 6.7 | Time (L) min. interval (24h) | 1440 1444 1448 1452 1456 1500 | |
| Submerged Tubing Depth (m): | ~ 9 m | ~ 3.2 m | Depth (m) | 6.726 6.742 | 6.751 6.756 |
| Well Stick-up Height (m): | 0.73 | ~ 2.4 m | Temperature (°C) | 3.4 3.6 3.6 3.4 3.5 3.3 | |
| Estimated Water Volume (L): | 6.4 | = 6.4 L | pH | 6.71 6.97 6.82 6.85 6.85 6.85 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 191.4 185.5 187.2 187.0 187.1 187.4 | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 325.3 313.7 316.3 316.1 315.9 314.9 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / / / / / / | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | / / / / / / | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | faint light grey brown, etc. same as previous clear no o/s " " " " clear no o/s | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 1.25 1 1 1 1 | |
| | | | Cumulative Purge Volume (L) | 1 2.25 3.25 4.25 5.25 6.25 | |
| | | | Total Purge Volume: | 6.25 | |
| Method: | Watera | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | at low flow | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| SRK08 - P14 | Dis Metals
total Metals
Gen Chem | 15:02
- 15:13 | 1 x 125ml plastic
1 x 1L plastic | ☒ Yes
☒ No | 4.62 NTU at time of sample |
| Comments: Dis Metals field filtered | | | | | |

DUPA = field duplicate, same bottles and analysis as parent (SRK08-P14) sample



Sample Site (Con't): SRK08-P14

Field UTM Location: Zn: 080 Easting: 0591759 Northing: 6903699 ± 2 m AN GPS Photo Nos.: 186-190 AN Camera

Waypoint marked

| Final Groundwater Field Parameters (Following Purge) | |
|--|---------------------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | / / / / / / / / / / |
| Turbidity (NTU) | |
| DO (mg/L) | / / / / / / / / / / |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|---|---|---|---|---|
| Time () minute interval: | | | | | |
| Depth (m) | / | / | / | / | / |
| Temperature (°C) | / | / | / | / | / |
| pH | / | / | / | / | / |
| Cond. (µs/cm) | / | / | / | / | / |
| Specific Cond. (µs/cm) | / | / | / | / | / |
| Redox (mV) | / | / | / | / | / |
| DO (mg/L) | / | / | / | / | / |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | / | / | / | / | / |
| Interval Purge Volume (L) | / | / | / | / | / |
| Cumulative Purge Volume (L) | / | / | / | / | / |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC well w/ cap inside red metal stick up w/ cover - faint mark /ID on inside of lid of stick up protector
↳ Access well & vehicle by going up over/around and back down past sulphide cell from main haul road (side slope of rock dump)
Same sample equipment as SRK08-P15
5/8" tubing existing in well, added 10.5 m of 1/4" + 6" of silicon for low flow sampling |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|-------------------------------------|--|--|--|---|-------|
| Well Number: | PW14-01 | Project Number: | 1343-005.02 | Date: | SEPT 14 2014 | |
| Approximate Date Drilled: | - | Client: | YG-AAM | Sampler: | RM + GMR | |
| Piezometer Diameter / Screen Length: | 6" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY ~ 16°C | |
| CHV (ppm / % LEL): | - | Duplicate Collected: | ☒ ID: | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| W/ Gen 5000 W + WATERKA | | | | | | |
| Initial Depth to Water (m): | 59.673 | Calculations: | Purge Start Time: | 16:49 1708 | Purge End Time: | |
| Depth to Bottom (m): | 78.3 | $\pi r^2 \times \text{depth} \times 1000$
$0.076 \times 0.076 \times 3.142 \times 18.62 \times 1000 = 337.91 \text{ L}$ | Time () min. interval (24h) | 16:59 | 17:08 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 17:20 | 17:34 | 17:47 |
| Well Stick-up Height (m): | 1.02 | | Temperature (°C) | 4.8 | 3.9 | 3.9 |
| Estimated Water Volume (L): | 338 | | pH | 5.88 | 5.85 | 5.79 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 534 | 540 | 528 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 272 | 275 | 269 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | Clear | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 38 | 29 | 39 |
| | | | Cumulative Purge Volume (L) | 38 | 67 | |
| | | | Total Purge Volume: | 106 | 151.5 | |
| | | | | 226 | 226 | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | |
| Analysis | | | | ☒ | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| PW14-01 | T. METALS
D. METALS
GEN. CHEM | 18:00 | PLASTIC
1L
2X 125mL | ☒ Yes
☐ No | 2.5 | |
| Comments | | | | | | |

Depth
18.627

59.5 78.3

Rate.
15L / 4 min
3.25 / 1 min



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584752 Northing: 6913151 (WP46)

Photo Nos.: 4490-4491

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 1800 |
| Temperature (°C) | 3.9 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 524 |
| Cond. (µs/cm) | |
| pH | 5.69 |
| Redox (mV) TDS (PPM) | 266 |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front Page (if required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| |
|--|
| General Notes (Condition of well or other features): |
| 70 m Water 5/8" |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--------------------------------|--|--|---|---|
| Well Number: | PW14-06 | Project Number: | 1343-005.02 | Date: | SEPT 14 2014 |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMR + RM. |
| Piezometer Diameter / Screen Length: | 4" WELL ^{SEALED} OVER | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY.
15°C |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | | | WLGEN 5000W | WATERRA | |
| Initial Depth to Water (m): | 46.9915 | Calculations: | Purge Start Time: | Purge End Time: 17-20 | |
| Depth to Bottom (m): | 62.9 | $\pi r^2 \times \text{Depth} (15.9) \times 1000 = 0.00255 \times 127 L$
$3.142 \times 125.50 \times 127 L$
$4" = 10.16 \text{ cm}$ | Time () min. interval (24h) | 11-42 | 11-48 |
| Submerged Tubing Depth (m): | | | Depth (m) | | |
| Well Stick-up Height (m): | 1.00 | | Temperature (°C) | 22.1 | 22.3 |
| Estimated Water Volume (L): | 127.4 | | pH | 6.08 | 5.65 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | >4000 | >4000 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | >2000 | >2000 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR | CLEAR |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 40 | 24 |
| | | Cumulative Purge Volume (L) | 40 | 64 | |
| | | Total Purge Volume: | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | | | | ☒ |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| PW14-06 | T. METALS
DISS METALS | 1221 | PLASTIC
1L
2X 125 | ☐ Yes
☐ No | 2.52 |
| | | | | | Comments |
| | | | | | STRAIGHT FORWARD.
50 min purging |

GEN CHEM

$$4" = 10.16 \text{ cm}$$

$$r = 5.08 \text{ cm}$$

Rate.

$$156 / 2.5 \text{ m}$$

$$= 16 \text{ L} / 4 \text{ m}$$



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584476

Northing: 6913310

WP44 Photo Nos.: 4484-4487

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----------|
| Time (hh:mm; 24h) | 1221 |
| Temperature (°C) | 22.2 (?) |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | > 4000 |
| Cond. (µs/cm) | |
| pH | 4.23 |
| Redox (mV) | 165 (ppm) |
| Turbidity (NTU) | 2.52 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features)

68 m water 5/8"

NOTE. TOP CASING IS 6" THEN GOES TO 4" (see note photo 4487)



GROUNDWATER SAMPLE COLLECTION SHEET

9:07 STOPPED RUNNING.

| | | | | | | | |
|--|--|--------------------------|--|---|--|---------------------|-------|
| Well Number: | MW14-03 | Project Number: | 1343-005.02 | Date: | SEPT 14 2014 | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMR + RAY | | |
| Piezometer Diameter / Screen Length: | 6" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGHT. 15°C | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: OUP 12 | Recovery: | ☐ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| WITH GEN (HONDA 5000) - AND WATERRA | | | | | | | |
| Initial Depth to Water (m): | 53.833 | Calculations: | Purge Start Time: | 8-34 | Purge End Time: | | |
| Depth to Bottom (m): | 60.9 | | Time () min. interval (24h) | 8:51 9:01 9:53 10:00 10:05 10:11 | | | |
| Submerged Tubing Depth (m): | | 60.9 | Depth (m) | | | | |
| Well Stick-up Height (m): | 0.89 | -53.833 | Temperature (°C) | 8.9 9.6 11.1 10.8 10.7 10.8 | | | |
| Estimated Water Volume (L): | 128 | 7.067 | pH | 6.51 6.86 6.93 6.91 6.98 7.06 | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | X 6.35 | Cond. (µs/cm) | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | = 44.87 | Specific Cond. (µs/cm) | 897 853 860 847 813 815 | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | TIR ² x 7.067 | Redox (mV) | 455 434 437 431 414 415 | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | X 1000 | DO (mg/L) | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | = 128 L | Appearance & Odour (Clear, Silty, HC odours, etc.) | SLIGHTLY TURBID MILKY → SLIGHTLY MILKY → | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | 6" = 15.2 cm | Interval Purge Volume (L) | 30 33 32 28 20 24 | | | |
| | | | Cumulative Purge Volume (L) | 30 63 95 133 153 177 | | | |
| | | | Total Purge Volume: | 70.12 L BREAK TO DEAL WITH GEN. - NOT PUMPING | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | | | | W/ GEN. | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| MW14-03 | T. METALS
DUST. METALS
GEN. CHEM | 10:17 | PLASTIC
1L
2X 125ml | ☐ Yes
☐ No | 16.4 | RATE = 15L / 4 mins | |

LESS
30 mins
CONT'D
OVER
Generator
Issues
Restart
AT 9:34
High restar.
Temp
possibly due
to warm
pump(?)

PUMP CONTROL

BOX.

motor VOLT 194.4

CURR. 4.6A

FREQ. 320 HZ

6" = 15.2 cm

$3.142 \times (0.0762 \times 0.0762)$

$= 3.142 \times 0.005806$

$= 0.01824 \times 7.067 = 0.128 \times 1000 =$

Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584613

Northing: 6913290 (WP043)

Photo Nos.: 4478 # 4483

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------------|
| Time (hh:mm; 24h) <u>1017</u> | <u>1017</u> |
| Temperature (°C) | <u>11</u> |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | <u>814</u> |
| Cond. (µs/cm) | |
| pH | <u>7.07</u> |
| Redox (mV) <u>105 (ppm)</u> | <u>415</u> |
| Turbidity (NTU) | <u>16.4</u> |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|-----------------------|--|--|--|--|
| Time () minute interval: | <u>1016</u> | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | <u>11.0</u> | | | | |
| pH | <u>7.07</u> | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | <u>814</u> | | | | |
| Redox (mV) <u>105 (ppm)</u> | <u>415</u> | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | <u>SLIGHTLY MILKY</u> | | | | |
| Interval Purge Volume (L) | <u>20</u> | | | | |
| Cumulative Purge Volume (L) | <u>197</u> | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features)

65 m waterline tubing 5/8"



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | |
|--|---|--|--|--|---|----------|-------------------------------------|--|--|
| Well Number: | MW14-15 | Project Number: | 1343-005.02 | Date: | SEPT 13 2014 | | | | |
| Approximate Date Drilled: | 2014 | Client: | YG-AAM | Sampler: | GMR + RM | | | | |
| Piezometer Diameter / Screen Length: | 1.0" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
14°C | | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☐ Good ☒ Bad | | | | |
| Purge Method | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | |
| | ✓ w/ BATTERY | | | | | | | | |
| Initial Depth to Water (m): | 2.032 | Calculations: | Purge Start Time: | 12-00 | Purge End Time: | | | | |
| Depth to Bottom (m): | 3.295 | $1" \text{ WELL}$
0.775
$\times 2$
1.55
0.775×0.5
$= 0.3875$ | Time () min. interval (24h) | 12-08 | 12-12 | 13-21 | 13-56 | | |
| Submerged Tubing Depth (m): | | | Depth (m) | 2.79 | DRY | DRY | DRY | | |
| Well Stick-up Height (m): | 1.15 | | Temperature (°C) | 6.8 | 5.9 | 9.4 | 9.4 | | |
| Estimated Water Volume (L): | 0.3875 | | pH | 6.25 | 6.35 | 6.40 | 6.71 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1828 | 1746 | 1726 | 699 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 928 | 992 | 878 | 344 | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CHOCOLATE TURBID → | → | → | → | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 0.5 | 0.5 | 0.5 | | |
| | | | Cumulative Purge Volume (L) | 1.5 | 2 | 2.5 | 3 | | |
| | | | Total Purge Volume: | | | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | | |
| Analysis | | ✓ | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | | |
| MW14-15 | TOTAL METALS
DISS METALS
GEN CHEM | 12:10
SEP. 14 | PLASTIC
1X12
2X125 ML | ☒ Yes
☐ No | 21 NTU | | 1" WELL
SLOW RECHARGE. + SHALLOW | | |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 058483

Northing: 6913263 (WP041)

Photo Nos.: 4474 - 4475

| Final Groundwater Field Parameters (Following Purge) | |
|--|--------------|
| Time (hh:mm; 24h) | Sep 14 12:10 |
| Temperature (°C) | 9.4 |
| DO (mg/L) TDS (ppm) | 344 |
| Specific Cond. (µs/cm) | 699 |
| Cond. (µs/cm) | |
| pH | 6.71 |
| Redox (mV) | |
| Turbidity (NTU) | 71 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| 4.5 m perli tubing 3/16"
8" SILICON TUBING
USED REGULAR WATERBIA (5/16") TO PURGE WELL 2 MORE TIMES
AND THEN 1" BAILER TO TAKE SAMPLE (Sep 14, 2014)
12:10
RECHARGED AT 13-17.. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|---|-------------|--|--|------------------------------|---------------------------------|---|---------------------|
| Well Number: | PW14-07 | | Project Number: | 1343-005.02 | | Date: | SEPT 14, 2014 | |
| Approximate Date Drilled: | | | Client: | YG-AAM | | Sampler: | GMR + RM | |
| Piezometer Diameter / Screen Length: | 6" $\phi = 15.24\text{cm}$
$r = 0.076\text{m}$ | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | Sunny. $\sim 16^\circ\text{C}$ | |
| CHV (ppm / % LEL): | | | Duplicate Collected: | ☐ ID: NONE | | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift |
| | | | | | | w/ GEN SCOWW / WATERRA | | B |
| Initial Depth to Water (m): | 66.297 | | Calculations: | Purge Start Time: | | 14.28 | | Purge End Time: |
| Depth to Bottom (m): | 76.8 | | $\pi r^2 \times \text{depth} \times 1000$
$= 192\text{L}$ | Time () min. interval (24h) | | 14.35 14.45 14.50 14.56 15.06 | | |
| Submerged Tubing Depth (m): | | | | Depth (m) | | | | |
| Well Stick-up Height (m): | 0.93 | | | Temperature ($^\circ\text{C}$) | | 6.1 4.0 4.03 3.8 3.8 | | |
| Estimated Water Volume (L): | 192 | | | pH | | 5.81 5.67 5.62 5.54 5.52 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | | Cond. ($\mu\text{S}/\text{cm}$) | | | | |
| | | | | Specific Cond. ($\mu\text{S}/\text{cm}$) | | 796 814 802 788 796 | | |
| | | | | Redox (mV) TDS (ppm) | | 405 412 405 403 405 | | |
| | | | | DO (mg/L) | | | | |
| | | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | Clear | | |
| | | | | Interval Purge Volume (L) | | 30 50 25 30 50 | | |
| | | | Cumulative Purge Volume (L) | | 30 80 105 135 155 | | | |
| | | | Total Purge Volume: | | 195 | | | |
| Method: | Waterra | | Peristaltic | | Disp. Bailer | | Steel Bailer | |
| Analysis | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | |
| PW14-07 | T. METALS
DISS METALS | 15-08 | PLASTIC
1L
2X 125mL | ☒ Yes
☐ No | 2.54 | | | |

GEN CHEM

~~8032 768~~

$r = \frac{500}{1000} = 0.5$

Purge rate 15L/3 min
= 5L/min



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584690 Northing: 6913192 (WP045) Photo Nos.: 4488 - 4489

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 1508 |
| Temperature (°C) | 3.8 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 796 |
| Cond. (µs/cm) | |
| pH | 5.52 |
| Redox (mV) (FDS) PAM | 405 |
| Turbidity (NTU) | 2.54 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data – Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volumes: | | | | | |

| General Notes (Condition of well or other features): |
|--|
| 82 m Waterra 5/8" |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|---------------------------------------|----------------------|--|---|---|------------------------|
| Well Number: | P09-LCD4 | Project Number: | 1343-005.02 | Date: | 13 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AS AN | |
| Piezometer Diameter / Screen Length: | 2" PVC/unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | light rain, cloudy, humid ~8°C | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID? No | Recovery: | ☐ Good ☒ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | @ low flow | | | | | |
| Initial Depth to Water (m): | 7.417 | Calculations: | Purge Start Time: | 0950 | Purge End Time: | |
| Depth to Bottom (m): | 12.210 | 12.2 - 7.4 | Time (5 min. interval (24h)) | 0955 1000 | | |
| Submerged Tubing Depth (m): | ~11 | = 4.8m | Depth (m) | 8.416 8.450 11.850 | | |
| Well Stick-up Height (m): | 0.95 | | Temperature (°C) | 3.6 3.7 | | |
| Estimated Water Volume (L): | ~9.6 L | = 2 L/m | pH | 7.37 7.23 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | = 9.6 L | Cond. (µs/cm) | 520 531 | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 878 896 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear, no o/s | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.25 0.6 7.5 | | |
| | | | Cumulative Purge Volume (L) | 1.25 1.85 9.35 | | |
| | | | Total Purge Volume: | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| | @ low flow | | | | | |
| Analysis | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| P09-LCD4 | DS Metals
Total Metals
Gen Chem | 18-32
ON SEPT 15 | 1x 125ml plastic
1x 1L plastic | ☒ Yes
☒ No | 45.4 | DS Metals field filled |

Same sample equipment as P09-LCD1

10:00 - well doesn't recharge a low flow, increased pump rate to speed purge, attempt to purge 3 well volumes or dry well → switched to manual
Waterra → develop dry w/ clear water DTW post = 11.650
10:45 DTW = 11.475m, relatively slow recharge
18:15 DTW = 11.500m → virtually no recharge from this morning → attempt to purge dry w/ manual broken yield 1L in tubing



Sample Site (Con't): PO9-LCD4

Field UTM Location: Zn: 080 Easting: 0593330 Northing: 6903278 $\pm 3m$ AWGPS Photo Nos.: ~~XXXXXX~~ 4N Cavern

| Final Groundwater Field Parameters (Following Purge) | |
|--|---------------------|
| Time (hh:mm; 24h) | 1832 (Sept 15) |
| Temperature (°C) | 3.7 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 896 |
| Cond. (µs/cm) | 531 |
| pH | 7.23 |
| Redox (mV) | / / / / / / / / / / |
| Turbidity (NTU) | 45.4 |
| DO (mg/L) | / / / / / / / / / / |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / |
| DO (mg/L) | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / | / / / / / / / / / / |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 2" PVC well sealed w/ plug inside metal stick up w/ lid - all in good condition. Yellow sticker on proctor w/ well ID
Existing 5/8" tubing in well, added 13m of 1/2" + 6" silicon for low flow sampling

RECOMMEND PURGE WITH WATERRA (5/8") THEN SAMPLE WITH
BALLER. MAY NEED RETURN TRIP/DUE FOR RECHARGE. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|-------------------------------------|--|---|--|
| Well Number: | P03-03-2 | Project Number: | 1343-005.02 | Date: | 15 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN |
| Piezometer Diameter / Screen Length: | 1/2" / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Mostly clear, windy gusts -10°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ 1B: No | Recovery: | ☐ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | |
| Subm. Pump | | Air Lift | | Other | |
| Initial Depth to Water (m): | | 7.089 | | Calculations: | |
| Depth to Bottom (m): | | 34.292 | | 34.3 - 7.1 | |
| Submerged Tubing Depth (m): | | ~33 | | ~27.2 m | |
| Well Stick-up Height (m): | | 0.107 | | ~12.5 m | |
| Estimated Water Volume (L): | | ~3.4L | | ~3.4 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | | | |
| Purge Start Time: | | 1351 | | Purge End Time: | |
| Time (5) min. interval (24h) | | 1356 | | 1401 | |
| Depth (m) → can't measure drawdown - tubing + probe don't fit together | | 1406 | | 1411 | |
| Temperature (°C) | | 5.4 | | 5.4 | |
| pH | | 4.83 | | 4.79 | |
| Cond. (µs/cm) | | 213.7 | | 218.9 | |
| Specific Cond. (µs/cm) | | 338.7 | | 346.0 | |
| Redox (mV) | | 347.1 | | 349.0 | |
| DO (mg/L) | | 339.9 | | 343.3 | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | Mostly clear, very faint light grey | | Same as previous | |
| Interval Purge Volume (L) | | 1.75 | | 1.75 | |
| Cumulative Purge Volume (L) | | 1.75 | | 3.5 | |
| Total Purge Volume: | | 9 L | | | |
| Method | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | |
| Steel Bailer | | Subm. Pump | | Air Lift | |
| Other | | | | | |
| Analysis | | | | | |
| a low flow | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P03-03-2 | Dis Metals
Total Metals
Gen Chem | 1419
-1436 | 1x125ml plastic
1x1L plastic | ☒ Yes
☒ No | 1.46 NTU at time of sample |
| Comments | | | | | |
| Dis Metals field filtered | | | | | |

same sample equipment as P03-03-2 + -4

Sample Site (Con't): P03-03-2

sec P03-03-9 field sheet

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.:

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features):

Nested multichannel/CMT well w/ P03-03-4 + -9, see -9 field sheet for general well information
 Added ~35m 1/4" + 6" silica for low flow sampling



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|---|---|--|
| Well Number: | P03-05-4 | Project Number: | 1343-005.02 | Date: | 15 Sept 2014 |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | W. AB AW |
| Piezometer Diameter / Screen Length: | 1/2" PVC or HDPE / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | mostly clear, windy ~ 8° |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ YES ☐ NO | Recovery: | ☐ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| manual micro | | | | | |
| Initial Depth to Water (m): | 8.650 | Calculations: | Purge Start Time: | 1118 | Purge End Time: |
| Depth to Bottom (m): | 24.545 | 24.55 - 8.65 | Time () min. interval (24h) | 1125 | 1127 |
| Submerged Tubing Depth (m): | ~23 | ~ 15.9m | Depth (m) → can't measure drawdown, water level probe + tubing don't fit together | 1132 | 1135 |
| Well Stick-up Height (m): | 0.83 | > .125 m | Temperature (°C) | 6.2 | 5.2 |
| Estimated Water Volume (L): | ~ 2 L | = ~ 2 | pH | 6.26 | 6.14 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 1153 | 1134 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 1797 | 1826 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | clear | clear |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1.5 | 1.5 |
| | | | Cumulative Purge Volume (L) | 1.5 | 3.0 |
| | | | Total Purge Volume: | 6.5 | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| Analysis | manual micro | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P03-05-4 | Dis Metals
Total Metals
Gen Chem | 1142~ | 1 x 125ml plastic
1 x 1L plastic | ☒ Yes
☒ No | 4.72 NTU @ time of sample |
| | | | | | Dis Metals filter filtered |

Same sample equipment as P03-06-1



Sample Site (Con't): P03-05-4

Field UTM Location: Zn: 08 V Easting: 0582484 Northing: 6913117 ± 3m 4m GPS

Photo Nos.: 196-200 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data (Continued from Front of Page if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| CMT/Multiport well, 9 1/2" ports all marked w/ ID in Sharpie on plastic well. Housed in metal stick up protector w/ cap and ID sticker, all in good condition
No existing tubing, added 25m of 1/4 x 3/8" micro tubing + micro footvalve (DTr) just at limit of per pump) |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | |
|--|--|--|--|--|--|--------------------------------|------|-------|
| Well Number: | P03-06-1 | Project Number: | 1343-005.02 | Date: | 15 Sept 2014 | | | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AR AN | | | |
| Piezometer Diameter / Screen Length: | ~1/2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cloud overcast ~ 20c | | | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: NO | Recovery: | ☐ Good ☐ Bad | | | |
| Purge Method | | | | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | |
| manual micro Watera | | | | | | | | |
| Initial Depth to Water (m): | 14.920 | Calculations: | Purge Start Time: | 1008 | Purge End Time: 1030 | | | |
| Depth to Bottom (m): | 26.581 | 26.6 - 14.9 | Time (3) min. interval (24h) | 1011 | 1014 | | | |
| Submerged Tubing Depth (m): | ~25 | | Depth (m) | → can't be measured - well meter tubing can't fit together | | | | |
| Well Stick-up Height (m): | 0.85 | = 11.66 m | Temperature (°C) | 6.3 | 6.5 | | | |
| Estimated Water Volume (L): | ~1.46 | = 0.125 L/m | pH | 3.74 | 3.77 | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | = 1.46 | Cond. (µs/cm) | 3062 | 3055 | | | |
| | | Specific Cond. (µs/cm) | 4758 | 4727 | 4708 | 4751 | 4767 | 4775 |
| | | Redox (mV) | / / / / / / / / | | | | | |
| | | DO (mg/L) | / / / / / / / / | | | | | |
| | | Appearance & Odour (Clear, Silty, HC odours, etc.) | light grey / bottom | same | same | mostly clear, faint light grey | same | clear |
| | | Interval Purge Volume (L) | 1 | 1 | 1 | 1 | 1 | |
| | | Cumulative Purge Volume (L) | 1 | 2 | 3 | 4 | 5 | 6 |
| | | Total Purge Volume: | 6L | | | | | |
| | | Method | | | | | | |
| | | Analysis | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | |
| P03-06-1 | Dis Metals
total Metals
Gen Chem | 1034 - 1045 | 1x125ml plastic
1x125ml plastic | ☒ Yes
☐ No | 9.17 NTU at time of sample | Dis Metals field filtered | | |

Same sample equipment as P03-06-2



SEE P03-06-7 FIELD SHEET

Sample Site (Con't): P03-06-1

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.:

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from front of page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features)

Nested CNT/multipoint well w P03-06-7 to -1, see -7 field sheet for additional info

Micro Watertight and Footvalve already in well



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|--|----------------------|--|---|---|
| Well Number: | P03-06-2 | Project Number: | 1343-005.02 | Date: | 15 Sept 2014 |
| Approximate Date Drilled: | Unknown in field | Client: | YG-AAM | Sampler: | AB AW |
| Piezometer Diameter / Screen Length: | ~ 1/2" PVC or HDPE / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Cold, overcast ~ 2°C |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: NO | Recovery: | ☐ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| micro Waterra manual | | | | | |
| Initial Depth to Water (m): | 12.260 | Calculations: | Purge Start Time: | 0935 | Purge End Time: |
| Depth to Bottom (m): | 23.699 | 23.7-12.25 | Time (min) interval (24h) | 0937 | 0939 |
| Submerged Tubing Depth (m): | ~ 22.5 | = 11.45 m | Depth (m) | → N/A → can't measure drawdown, tubing + probe don't fit in well at same time | |
| Well Stick-up Height (m): | ~ 0.88 | + 1.25 L/m | Temperature (°C) | 4.3 | 4.1 |
| Estimated Water Volume (L): | ~ 1.43 | ~ 1.43 | pH | 3.97 | 4.79 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 2907 | 2952 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 4902 | 4920 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | / / / / / / / / | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DQ (mg/L) | / / / / / / / / | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | light brown, turbid, silty | same |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 1 |
| | | | Cumulative Purge Volume (L) | 2 | 2 |
| | | | Total Purge Volume: | 6 L | → purge water changed from brown to light grey becoming clearer ~ / volume purged |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Other |
| Analysis | micro Waterra manual | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| P03-06-2 | Dis Metals
Total Metals
Gen Chem | 0950 - 1005 | 1 x 125ml plastic
1 x 1L plastic | ☒ Yes
☒ No | 939 AU e fine AF sample and not clearing |
| | | | | | Dis Metals field filtered |

→ Same equipment as P03-06-6 plus ELR 457

Sample Site (Con't): P03-06-2

See P03-06-7

Field UTM Location: Zn: _____

Easting: _____

Northing: _____

Photo Nos.: _____

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| <p>Nested CMT/multipoint well w/ P03-06-7, -6, -1 → see -7 field sheet for additional info</p> <p>Microbacteria + Foot valve already in well</p> |

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--|--|--|---|--|---|
| Well Number: | P03-06-6 | Project Number: | 1343-005.02 | Date: | 15 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AW | |
| Piezometer Diameter / Screen Length: | ~1/2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | Cool, overcast ~3°C | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ Yes ☐ No | Recovery: | ☐ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| manual w/ micro Waterra | | | | | | |
| Initial Depth to Water (m): | 12.349 | Calculations: | Purge Start Time: | 0845 | Purge End Time: | 0913 |
| Depth to Bottom (m): | 13.627 | 13.63 - 12.35 | Time (NA) / Min Interval (24h) | 0855 | 0905 | 0913 |
| Submerged Tubing Depth (m): | ~13 | = 1.28 m | Depth (m) | N/A | | |
| Well Stick-up Height (m): | 0.94 | = 0.125 L/m | Temperature (°C) | | | |
| Estimated Water Volume (L): | 0.16 | = 0.16 L | pH | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | 3 WW ~ 0.5 L | Specific Cond. (µs/cm) | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DQ (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, black, silty, HC odours, etc.) | black, silty, thick | same as previous | turbid, black, silty |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | water black + silty immediately when starting purge, doesn't clear | Interval Purge Volume (L) | 0.5 | 0.5 | 0.5 |
| | | | Cumulative Purge Volume (L) | 0.5 | 1.0 | 1.5 |
| | | | Total Purge Volume: | 1.5 L | → purged 10 well volumes, doesn't clear at all | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Analysis | Manual micro | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| P03-06-6 | Dis Metals
Total Metals
Gen Chem | 0915 -
0933 | 1 x 125ml plastic
1 x 1L plastic | ☒ Yes
☒ No | Out of range, unreadable past field instrument level | Dis metal field filtered, 4 filters = 3/4" bottle |

proceed w/sample, very silty + turbid in bottles

Same equipment as P03-06-7 (water level)

↳ no field parameters taken during purge, water too dirty/silty/black and doesn't cover YSI probes fast enough



Sample Site (Con't): P03-06-6

SAME AS P03-06-7

Field UTM Location: Zn: 080

Easting:

Northing:

Photo Nos.:

| Final Groundwater Field Parameters (Following Purge) | |
|--|-----|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | N/A |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|-----|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | N/A | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes: (Condition of well or other features)

See reverse for details about purge (no field parameters)
↳ Can't measure drawdown because tubing + water level probe don't fit in well at same time, but recharge seems to be enough to at least match purge rate
- Micro bacteria + footvalve already in well



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--|--|---|------------------|---------|-------------|--------------|--------------|------------|----------|-------|----------|--|--|--|--|---|--|--|
| Well Number: | MW14-025 | Project Number: | 1343-005.02 | Date: | SEPT 15 2014 | | | | | | | | | | | | | | | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GARY + RM | | | | | | | | | | | | | | | | |
| Piezometer Diameter / Screen Length: | 3.75" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | | | | | | | | | | | | | | | | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: WGR NONE | Recovery: | ☒ Good ☐ Bad | | | | | | | | | | | | | | | | |
| Purge Method | | | | | | | | | | | | | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | | | |
| + 5000 Gen. + Waterra tubing | | | | | | | | | | | | | | | | | | | | | |
| Initial Depth to Water (m): | 58.135 | Calculations: | Purge Start Time: | 8-57 | Purge End Time: | | | | | | | | | | | | | | | | |
| Depth to Bottom (m): | 78.9 | $\pi r^2 \times \text{depth} \times 1000$
$(2.077)^2 \times 58.135 \times 1000$
$= 3.142 \times 1000$
$= 147 \text{ L}$ | Time () min. interval (24h) | 9:07 | 9:17 | | | | | | | | | | | | | | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | | | | | | | | | | | | | | | | | | |
| Well Stick-up Height (m): | 0.95 | | Temperature (°C) | 6.7 | 6.7 | | | | | | | | | | | | | | | | |
| Estimated Water Volume (L): | 147 | | pH | 7.05 | 7.05 | | | | | | | | | | | | | | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | | | | | | | | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 160 | 158 | | | | | | | | | | | | | | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 81 | 80 | | | | | | | | | | | | | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | | | | | | | | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | Slightly turbid | (milky) | | | | | | | | | | | | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 37 | 37 | | | | | | | | | | | | | | | | |
| | | Cumulative Purge Volume (L) | 37 | 74 | | | | | | | | | | | | | | | | | |
| | | Total Purge Volume: | | 148 | | | | | | | | | | | | | | | | | |
| <table border="1"> <tr> <td>Method</td> <td>Waterra</td> <td>Peristaltic</td> <td>Disp. Bailer</td> <td>Sigs. Bailer</td> <td>Subm. Pump</td> <td>Air Lift</td> <td>Other</td> </tr> <tr> <td>Analysis</td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td></td> </tr> </table> | | | | | | Method | Waterra | Peristaltic | Disp. Bailer | Sigs. Bailer | Subm. Pump | Air Lift | Other | Analysis | | | | | X | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Sigs. Bailer | Subm. Pump | Air Lift | Other | | | | | | | | | | | | | | |
| Analysis | | | | | X | | | | | | | | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | | | | | | | | | | | | | |
| MW14-025 | Gen. Chem.
Total Metals
Diss. Metals | 9-48 | PLASTIC
1L
2x 125mL | ☒ Yes
☐ No | 8.18 | STRAIGHT FORWARD | | | | | | | | | | | | | | | |

MW14 - Deep
58.656
stick up 0.95
147

3.75" = 9.5cm
(0.095)
r = 4.75 (0.0475)

Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584758 Northing: 6913127

^{LP}
(047)

Photo Nos.: 4492, 4493

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------------|
| Time (hh:mm; 24h) | <u>9-48</u> |
| Temperature (°C) | <u>6.8</u> |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | <u>157</u> |
| Cond. (µs/cm) | |
| pH | <u>7.05</u> |
| Redox (mV) <u>TDS (ppm)</u> | <u>80</u> |
| Turbidity (NTU) | <u>8.18</u> |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| <p><u>80 m WATERLA 5/8"</u></p> <p>APPROX PUMP SETTINGS: WATER VOLTS — <u>189.5</u>
 MOTOR CURRENT — <u>4.4A</u>
 " FREQU — <u>316 Hz</u></p> |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--------------------------------------|--|--|--|--|-------|
| Well Number: | MW14-02D | Project Number: | 1343-005.02 | Date: | SEPT 15 2014 | |
| Approximate Date Drilled: | - | Client: | YG-AAM | Sampler: | GMK + RM | |
| Piezometer Diameter / Screen Length: | 2" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY
~13°C | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air-Lift | Other | |
| | 58 | | W/ 5000 gal + Waterra | 5/16" | 4-06 | |
| Initial Depth to Water (m): | 58.656 | Calculations: | Purge Start Time: | 10-29 | Purge End Time: | |
| Depth to Bottom (m): | 78.9 | $\pi r^2 \times \text{depth} \times 1000$
$2.032 \times 20-3$
$= 41 L$ | Time () min. interval (24h) | 10-41 | 10-48 | |
| Submerged Tubing Depth (m): | | | Depth (m) | | | |
| Well Stick-up Height (m): | 0.95 | | Temperature (°C) | 4.4 | 4.8 | 4.6 |
| Estimated Water Volume (L): | 41 | | pH | 5.81 | 5.73 | 5.71 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 498 | 491 | 492 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 252 | 248 | 250 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | SLIGHTLY TURBID | CLEAR | CLEAR |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 39 | 22 | 32.5 |
| | | Cumulative Purge Volume (L) | 39 | 61 | 93.5 | |
| | | Total Purge Volume: | 116 | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air-Lift | |
| Analysis | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| MW14-02D | T. METALS
DISS METALS
GEN CHEM | 11-06 | PLASTIC
1L
2X 125mL | ☒ Yes
☐ No | 6.1 | |
| | | | | | Comments | |
| | | | | | NEED TO REMOVE OUTER CASING OR
PUMP TO FIT DOWN PVC CASING (the "strand") | |

Rate 15 L / 4 min
= 3.25 / 1 min



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584758 Northing: 6913127

Photo Nos.: 4492 - 4493

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 11-06 |
| Temperature (°C) | 4.6 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 492 |
| Cond. (µs/cm) | |
| pH | 5.69 |
| Redox (mV) TDS (PPM) | 250 |
| Turbidity (NTU) | 6.1 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| General Notes (Condition of well or other features) |
|--|
| NO CONSUMABLES. WATERRA FOR CLEANED WITH ALCONOX ON OUTSIDE
AND PURGED WITH ^{WELL} SAMPLE WATER ON INSIDE. |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|------------------------------|-----------------------------|--|---|--|----------|
| Well Number: | P03-06-7 | Project Number: | 1343-005.02 | Date: | 15 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AM | |
| Piezometer Diameter / Screen Length: | ~1/2" PVC / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | cool, overcast ~3°C | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ ID: ☒ NO | Recovery: | ☒ Good ☒ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| N/A - well dry | | | | | | |
| Initial Depth to Water (m): | DRY | Calculations: | Purge Start Time: | Purge End Time: | | |
| Depth to Bottom (m): | 11.816 m | WELL DRY
NO SAMPLE | Time () min. interval (24h) | | | |
| Submerged Tubing Depth (m): | N/A | | Depth (m) | | | |
| Well Stick-up Height (m): | 0.95 | | Temperature (°C) | | | |
| Estimated Water Volume (L): | NONE | | pH | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | | | |
| | | Cumulative Purge Volume (L) | | | | |
| | | Total Purge Volume: | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Analysis | N/A - WELL DRY | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| N/A - WELL DRY | | | | ☒ Yes
☒ No | | |

Measured w/ mini WL probe Solinst 102 (ELR)



Sample Site (Con't): P03-06-7

Field UTM Location: Zn: 08 U Easting: 058 2452 Northing: 6913 490 ± 2m A N G P S Photo Nos.: 191-195 AN (Amelco)

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continue from front of Page (if required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| AN Camera has photos for all P03-06 series wells → CNT multipart
↳ Port #7 DRY = NO SAMPLE |

GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|---------------------------|--------------------------------|--|--|---|
| Well Number: | MW 14-05 | Project Number: | 1343-005.02 | Date: | SEP 15 2014 |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMK |
| Piezometer Diameter / Screen Length: | 8" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY 16°C plus |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: 11 DUP 11 | Recovery: | ☒ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| ✓ w/ SLOW GEN + WATERRA | | | | | |
| Initial Depth to Water (m): | 53.350 | Calculations: | Purge Start Time: | 14-55 | Purge End Time: 1541 |
| Depth to Bottom (m): | 66.9 | column = 13.55 | Time () min. interval (24h) | 1500 1510 1520 1530 1540 | |
| Submerged Tubing Depth (m): | | | Depth (m) | | |
| Well Stick-up Height (m): | 0.86 | 3.142 x | Temperature (°C) | 10.2 10.3 10.5 10.9 11.3 | |
| Estimated Water Volume (L): | 246 | (0.076 x 0.076) x 13.55 x 1000 | pH | 6.44 6.37 6.4 6.42 6.42 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 3694 3726 3681 3656 3651 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 1886 1901 1877 1866 1863 | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | v. slightly milky clear | clear sulphur like odour (egg-like) |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 37.5 37.5 37.5 37.5 37.5 | |
| | | | Cumulative Purge Volume (L) | 37.5 75 112.5 150 187.5 | |
| | | | Total Purge Volume: | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift |
| Analysis | | | | ✓ | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| MW14-05 | T. METALS
DISS. METALS | 1542 | PLASTIC
1L
2x 125 mL | ☒ Yes
☐ No | 8.21 |
| | | | | | SULPHUR-LIKE ODOUR.
STRAIGHT FORWARD. |

GEN CHEM

245

Rate 15L / 4 min
= 3.25 / 1 min

pump readings
179 Volts
4.3 A
306 Hz



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584694 Northing: 6913345

(WP
049)

Photo Nos.: 4499 - 5000

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 1542 |
| Temperature (°C) | 11.3 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 3651 |
| Cond. (µs/cm) | |
| pH | 6.42 |
| Redox (mV) - TDS (PPM) | 1863 |
| Turbidity (NTU) | 8.21 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if needed | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features):

NO CONSUMABLES



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | |
|--|-------------------------|---|--|--|---|-----------------|------|
| Well Number: | MW14-04D | Project Number: | 1343-005.02 | Date: | SEPT 15 2014 | | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMR + RM | | |
| Piezometer Diameter / Screen Length: | 2 1/2 | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY
~16°C | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☒ ID: NONE | Recovery: | ☒ Good ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| ✓ w/ screen gen + waterra | | | | | | | |
| Initial Depth to Water (m): | 69.048 | Calculations: | Purge Start Time: | 16:39 | Purge End Time: | | |
| Depth to Bottom (m): | 75.2 | 3.142 x (0.0475) x 0.0475 x 7 = 3.442 x 6.152 x 2.032 = 12.5 L | Time () min. interval (24h) | 16:39 | 16:48 | | |
| Submerged Tubing Depth (m): | | | Depth (m) | 16:43 | 16:53 | 16:58 | |
| Well Stick-up Height (m): | 20.50-95 | | Temperature (°C) | 10.9 | 11.4 | 12.5 | |
| Estimated Water Volume (L): | 12.5 | | pH | 6.61 | 6.62 | 6.63 | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume

(DTB - DTW) x 1.1 (for 1.5" diameter) = 1 well volume

2" casing has 0.16 USgal/ft or 2.032 l/m
1" casing has 0.04 USgal/ft or 0.508 l/m
8" sand pack has 0.73 USgal/ft or 9.271 l/m
6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Cond. (µs/cm) | | | | |
| | | | Specific Cond. (µs/cm) | 7400 | 3700 | 3483 | 3248 |
| | | | Redox (mV) | 7200 | 1895 | 1773 | 1659 |
| | | | DO (mg/L) | | | | |
| | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | TURBID | CLEARING | SLIGHTLY TURBID | |
| | | | Interval Purge Volume (L) | 12 | 7 | 7 | |
| | | Cumulative Purge Volume (L) | 12 | 19 | 26 | | |
| | | Total Purge Volume: | | | | | |
| Method: Waterra Peristaltic Disp. Bailer Subm. Pump Air Lift Other | | | | | | | |
| Analysis: ✓ | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | |
| MW14-04D | T METALS
DISS METALS | 1730 | PLASTIC
1X1L
2X125ML | ☒ Yes
☐ No | 13.0 | | |
| | | | | | Comments | | |
| | | | | | LONG TIME TO PURGE | | |

GEN CHEM

water vol. = 6.152 m

SL
AD

16L/6min → 0.5L/20s
~~0.1~~ 1.4/1min = 1.5/1min

pumping
picks
turned
down
at
1705
CONT'D
OVER PAGE



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584648 Northing: 6913321 ^{WP} (048) Photo Nos.: 4496 - 4498

| Borehole Groundwater Field Parameters (Following Purge) | |
|---|------|
| Time (hh:mm; 24h) | 1730 |
| Temperature (°C) | 13.2 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 2855 |
| Cond. (µs/cm) | |
| pH | 6.67 |
| Redox (mV) TDS (ppm) | 1451 |
| Turbidity (NTU) | 13.0 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if required | | | | | |
|--|------------------|-------|-------|--|--|
| Time () minute interval: | 1717 | 1724 | 1729 | | |
| Depth (m) | | | | | |
| Temperature (°C) | 13.0 | 14.0 | 13.2 | | |
| pH | 6.67 | 6.66 | 6.67 | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | 3046 | 2982 | 2855 | | |
| Redox (mV) TDS (ppm) | 1548 | 1525 | 1451 | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | SLIGHTLY TURBID. | CLEAR | CLEAR | | |
| Interval Purge Volume (L) | 7.5 | 10.5 | 7 | | |
| Cumulative Purge Volume (L) | 52 | 62.5 | 69.5 | | |
| Total Purge Volume | | | | | |

| |
|---|
| <p>General Notes (Condition of well or other features):</p> <p>75m Watera. 5/8" 1"</p> <p>TECK A WAICE TO PURGE (!?)</p> |
|---|



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|---|--|--|---|--|-------|
| Well Number: | P03-03-9 | Project Number: | 1343-005.02 | Date: | 15 Sept 2014 | |
| Approximate Date Drilled: | unknown in field | Client: | YG-AAM | Sampler: | AB AN | |
| Piezometer Diameter / Screen Length: | 1/2" / unknown in field | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | mostly clear, gusty / windy ~30°C | |
| CHV (ppm / % LEL): | not recorded | Duplicate Collected: | ☒ No | Recovery: | ☐ Good ☐ Bad | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | @ low flow | | | | | |
| Initial Depth to Water (m): | 6.970 | Calculations: | Purge Start Time: | 12:49 | Purge End Time: 13:04 | |
| Depth to Bottom (m): | 10.179 | 10.2 - 6.9
~ = 3.3 m
~ .125 L/m
~ 0.41 L | Time (3) min. interval (24h) | 12:52 | 12:55 | |
| Submerged Tubing Depth (m): | ~ 9 | | Depth (m) → | N/A. can't measure drawdown, water level probe + tubing don't fit together | 12:58 | 13:01 |
| Well Stick-up Height (m): | 0.83 | | Temperature (°C) | 8.9 | 9.0 | 8.8 |
| Estimated Water Volume (L): | 0.41 L | | pH | 4.06 | 5.14 | 5.62 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | 330.2 | 330.9 | 324.5 |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | Specific Cond. (µs/cm) | 479.2 | 477.8 | 477.8 | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | Redox (mV) | | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | DO (mg/L) | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | Appearance & Odour (Clear, Silty, HC odours, etc.) | grey/yellow silty turbid | same as previous | mostly clear | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | Interval Purge Volume (L) | 0.3 | 0.3 | 0.3 | |
| | | Cumulative Purge Volume (L) | 0.3 | 0.6 | 0.9 | |
| | | Total Purge Volume: | 1.5 | 1.2 | 1.5 | |
| Method: Waterra Peristaltic Disp. Bailer Subm. Pump Air Lift Other | | | | | | |
| Analysis: @ low flow | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| P03-03-9 | Dis Metals
Total Metals
Spec Chem | 13:05 -
13:22 | 1 x 125 ml plastic
" 1 x 12 plastic | ☒ Yes
☒ No | 613 At e time of sample | |
| | | | | | Dis Metals field filled
La sample light green,
slight turbid colour in bottles | |

Same equipment as P03-05-41

slight turbid colour in bottles



Sample Site (Con't): P03-03-9

Field UTM Location: Zn: 080 Easting: 0582948 Northing: 6912879 $\pm 2m$ 4N Camera Photo Nos.: 201-205 AN Camera

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |
| | |

| Additional Purge Data (Continuation of Field Data Page if required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| Multi channel/CMT well w/ 9 1/2" channels/wells in metal stick up w/ poorly closing lid. Individual wells have no caps or seals. Individual wells are <u>not</u> marked or identified as -1 to -9, so must check each DTB to confirm against scope work/previous sample events. <u>No</u> tubing present in any well. Only metal protector marked w/ "P03-03" sticker |



Same Sample equipment as P03-03-9



Sample Site (Con't): P03-03-24

See P03-03-9 field sheet for details

Field UTM Location: Zn:

Easting:

Northing:

Photo Nos.:

| Final Groundwater Field Parameters (Following Purge) | |
|--|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| SEE PREVIOUS PAGE | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|--|
| CMT/Multichannel well tested w/ P03-03-2 + -9 → See P03-03-9 field sheet for general well info
Added 25m of 1/2" + 6" silicon for low flow sampling |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--|--|--|--|--|----------|
| Well Number: | MW 14-14 | Project Number: | 1343-005.02 | Date: | SEPT 13 2014 | |
| Approximate Date Drilled: | 2014 | Client: | YG-AAM | Sampler: | RM + GMR | |
| Piezometer Diameter / Screen Length: | 1.5" | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | OVERCAST
15°C | |
| CHV (ppm / % LEL): | ✓ | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☐ Good ☒ Bad <i>very slow</i> | |
| Purge Method | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| X - mostly | ✓ - initially | | | | | |
| Initial Depth to Water (m): | 1.531 | Calculations: | Purge Start Time: | 12-22 | Purge End Time: | |
| Depth to Bottom (m): | 3.500 | <i>1" well</i>
<i>1.97</i>
<i>1.969</i>
<i>X 0.5</i>
<i>2.69845</i>
<i>0.985</i> | Time () min. interval (24h) | 12-27 12-29 | SEP 14 12:05 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 3.12 | DRY | DRY |
| Well Stick-up Height (m): | 0.885 | | Temperature (°C) | 7.3 | 6.9 | 6.7 |
| Estimated Water Volume (L): | 0.9845 | | pH | 6.45 | 6.5 | 6.62 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 2128 | 2156 | 2091 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 105 (PPM) | 1084 | 1099 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | some turbidity | Turbid | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.75 | 0.25 | 0.25 |
| | | Cumulative Purge Volume (L) | 0.75 | 1.01 | 1.25 | |
| | | Total Purge Volume: | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| MW 14-14 | T. METALS
DISS. METALS
GEN. CHEM | 8-36
SEPT 16 2014 | PLASTIC
1 L
2 x 125 mL | ☒ Yes
☐ No | 19.1 | |

2-3.5
3m @
13:27

Shallow
T. Metals
DISS metals
Gen Chem.



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 058484 Northing: 6913250

(WP42) Photo Nos.: 4476-4477

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------------------|
| Time (hh:mm; 24h) | 0836 Sept 16 2014 |
| Temperature (°C) | ~ 6.7 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | ~ 2091 |
| Cond. (µs/cm) | |
| pH | ~ 6.62 |
| Redox (mV) TDS (ppm) | ~ 1107 |
| Turbidity (NTU) | 19.1 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features):

4-5' per ft tubing 3/16" } But see recommendation below
8" SILICON TUBING }

Very turbid (chocolate) and extremely ^{slow} recovery (>24 hrs)
Low sample volume. Collected 1/2 bottles for metals and about 1/2 bottle for gen chem. (Sept 16)

Recommend purging with micro waterer at least twice - remove tubing - return later to bail with 1/2" bailer

GROUNDWATER SAMPLE COLLECTION SHEET

16

| | | | | | | | |
|--|--|----------------------|--|--|--|----------|-------|
| Well Number: | P03-01-8 | Project Number: | 1343-005.02 | Date: | 4/8/09/2014 | | |
| Approximate Date Drilled: | unknown | Client: | YG-AAM | Sampler: | GMR + RM | | |
| Piezometer Diameter / Screen Length: | 0.5 / unknown | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGAT ~15°C | | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: No. | Recovery: | ☒ Good? ☐ Bad | | |
| Purge Method | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | |
| | ✓ w/ Battery | | | | | | |
| Initial Depth to Water (m): | 5.723 | Calculations: | Purge Start Time: | 10-22 | Purge End Time: | | |
| Depth to Bottom (m): | 10.060 | | Time () min. interval (24h) | 10-28 10-32 10-37 10-44 10-49 10-54 | | | |
| Submerged Tubing Depth (m): | | | Depth (m) | small casing, could not fit water tape | | | |
| Well Stick-up Height (m): | | | Temperature (°C) | 6.3 5.64 5.73 5.72 5.85 6.0 | | | |
| Estimated Water Volume (L): | ~0.54 | | pH | 5.17 5.8 5.9 6.1 6.1 5.92 | | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 7400 7400 7400 7400 7400 7400 | | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 7200 7200 7200 7200 7200 7200 | | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | LOOKS LIKE DILUTED ANTI-FREEZE Green blue → → → → see photos | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 0.5 0.5 0.5 0.5 0.5 0.5 | | | |
| | | | Cumulative Purge Volume (L) | 0.5 1 1.5 2.0 2.5 3 | | | |
| | | | Total Purge Volume: | | | | |
| Method | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other |
| Analysis | | ✓ | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | |
| P03-01-8 | T. METALS
DISS METALS
GEN. CHEM. | 10-55 | PLASTIC
1L
2x 125 mL | ☒ Yes
☐ No | 6.94 | see over | |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V

Easting: 0583179

Northing: 6912761

(WP050)

Photo Nos.:

4507 - 4508 13

| Final Groundwater Field Parameters (Following Purge) | |
|--|--------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | 6.0 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | > 4000 |
| Cond. (µs/cm) | |
| pH | 5.92 |
| Redox (mV) TDS (ppm) | > 2000 |
| Turbidity (NTU) | 6.94 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page if Required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features)

NESTED WELLS (see photo). You can work out which ones are
(MULTI CHANNEL)
8 & 2 by counting down from the highest tube to the lowest
tube (9, 8, 7, 6 etc). Wells are 5/8" o/d Waterra.
Consumables. 11m of Perfl tubing + 8" silicon tubing

GROUNDWATER SAMPLE COLLECTION SHEET

16

| | | | | | | | | | |
|--|--|---|--|--|---|------------------------------------|-------|------|-------|
| Well Number: | P03-01-2 | Project Number: | 1343-005.02 | Date: | 10/09/2014 | | | | |
| Approximate Date Drilled: | unknown | Client: | YG-AAM | Sampler: | GMR + RM | | | | |
| Piezometer Diameter / Screen Length: | 0.5 / unknown | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | BRIGAT. SOME CLOUD ~15°C | | | | |
| CHV (ppm / % LEL): | — | Duplicate Collected: | ☐ ID: None | Recovery: | ☒ Good ☐ Bad | | | | |
| Purge Method | | | | | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | | | | |
| | w/battery | | | | | | | | |
| Initial Depth to Water (m): | 5.800 | Calculations: | Purge Start Time: | 11-10 | Purge End Time: | | | | |
| Depth to Bottom (m): | 39.325 | 0.000156
 $+ 3.142$
 $= 0.00049$
 $= 0.01644$
 $= 16.44$
 $= 16.2$
 100%
 $column 33-5$
 $1.25 cm$ | Time () min. interval (24h) | 1116 | 1121 | 1131 | 1141 | 1151 | 12:01 |
| Submerged Tubing Depth (m): | | | Depth (m) | small casing, could not fit water type | | | | | |
| Well Stick-up Height (m): | | | Temperature (°C) | 5.8 | 5.6 | 5.6 | 5.1 | 5.0 | 5.0 |
| Estimated Water Volume (L): | ~4.2 | | pH | 6.78 | 6.89 | 6.94 | 6.94 | 6.95 | 6.94 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 554 | 468 | 410 | 415 | 415 | 416 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (PPM) | 278 | 241 | 209 | 211 | 211 | 213 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | VERY SLIGHTLY TURBID → → → Clear → | | | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 1 | 1 | 1 | 1 | 1 |
| | | Cumulative Purge Volume (L) | 1 | 2 | 3 | 4 | 5 | 6 | |
| | | Total Purge Volume: | | | | | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump | Air Lift | Other | | |
| Analysis | | ✓ | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments | | | |
| P03-01-2 | T. METALS
DISS. METALS
GEN. CHEM | 12:10 | PLASTIC
1L
2X 125ML | ☒ Yes
☐ No | 2.65 | LONG PURGE
BUT STRAIGHT FORWARD | | | |



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0583179 Northing: 6912761 (WP050) Photo Nos.: 4507 - 4511

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 1210 |
| Temperature (°C) | 5.0 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 418 |
| Cond. (µs/cm) | |
| pH | 6.94 |
| Redox (mV) TDS (ppm) | 213 |
| Turbidity (NTU) | 2.65 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

| |
|--|
| <p>General Notes (Condition of well or other features):</p> <p>9m peris tubing 5/16"</p> |
|--|



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|---------------------------|-----------------------------|--|--|---|------|
| Well Number: | TH86-2 | Project Number: | 1343-005.02 | Date: | SEPT 16 2014 | |
| Approximate Date Drilled: | — | Client: | YG-AAM | Sampler: | GMK + RM | |
| Piezometer Diameter / Screen Length: | 2" STEEL | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY
WIND 16°C + | |
| CHV (ppm / % LEL): | / | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☒ Good ☐ Bad | |
| Purge Method | | | | | | |
| Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| | ✓ WITH BATTERY | | | | | |
| Initial Depth to Water (m): | 1.755 | Calculations: | Purge Start Time: | 14-05 | Purge End Time: | |
| Depth to Bottom (m): | 11.410 | 9.645
x 2
= 19.290 | Time () min. interval (24h) | 14-11 | 14-21 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 1.77 | 1.77 | 1.77 |
| Well Stick-up Height (m): | 0.43 | | Temperature (°C) | 6.9 | 5.4 | 5.3 |
| Estimated Water Volume (L): | 19.29 | | pH | 9.26 | 8.48 | 7.07 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB - DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 77 | 187 | 241 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 38 | 97 | 122 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | CLEAR - SOME SILTY PARTICLES | → | → |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 1 | 4 | 3 |
| | | Cumulative Purge Volume (L) | 1 | 5 | 8 | |
| | | Total Purge Volume: | 14 | 10 | 12 | |
| Method | Watera | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | |
| Analysis | | ✓ | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | |
| TH86-2 | T. METALS
DISS. METALS | 14:55 | PLASTIC
1X 1L
2X 125ML | ☒ Yes
☐ No | 9.440 | |
| | | | | | VEG AROUND STICK UP REMOVED. | |

GEN CAEM



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0383536 Northing: 6912494 (052) Photo Nos.: 4525 - 4526

| Final Groundwater Field Parameters (Following Purge) | |
|--|------|
| Time (hh:mm; 24h) | 1455 |
| Temperature (°C) | 5.4 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 245 |
| Cond. (µs/cm) | |
| pH | 7.01 |
| Redox (mV) TDS (ppm) | 121 |
| Turbidity (NTU) | 9.40 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (Required) | | | | | |
|---|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

| General Notes (Condition of well or other features) |
|---|
| 12.5 m perfl tubing
8" of silicon tubing.
2" WELL CAP |



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | | | | |
|---|------------------------------------|-----------------------------|--|--|-----------------|-----------------|--|----------|--------------|
| Well Number: | TH86-5 | | Project Number: | 1343-005.02 | | Date: | SEPT 16 2014 | | |
| Approximate Date Drilled: | | | Client: | YG-AAM | | Sampler: | GMR - RM | | |
| Piezometer Diameter / Screen Length: | 2" STEEL | | Project Name: | September 2014 Faro Groundwater | | Weather/Temp: | OVERCAST ~ 15°C | | |
| CHV (ppm / % LEL): | | | Duplicate Collected: | ☒ YES ☐ NO | | Recovery: | ☐ Good ☐ Bad | | |
| Purge Method | | | | | | | | | |
| Waterra | | Peristaltic | | Disp. Bailer | | Subm. Pump | | Air Lift | |
| HYDRO LIFT | | | | | | | | | |
| Initial Depth to Water (m): | 8.747 | Calculations: | Purge Start Time: | 12-59 | | Purge End Time: | 13-47 | | |
| Depth to Bottom (m): | 27.5 | 18.76
X 2
= 37.52 | Time () min. interval (24h) | 1304 | 1310 | 1318 | 1324 | 1331 | |
| Submerged Tubing Depth (m): | | | Depth (m) | 8.82 | 8.82 | 8.82 | 8.82 | 8.82 | 8.82 |
| Well Stick-up Height (m): | 1.215 | | Temperature (°C) | 5.2 | 3.7 | 3.8 | 3.7 | 3.7 | 3.9 |
| Estimated Water Volume (L): | 37.52 | | pH | 6.36 | 7.05 | 6.77 | 7.05 | 7.05 | 6.57 |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | | | | |
| (DTB - DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 868 | 858 | 861 | 850 | 863 | 858 |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (PPM) | 445 | 438 | 439 | 439 | 439 | 436 |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | TURBID BLACK | → * | → * | → * | → * | CLEARER GREY |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 16 | 16 | 16 | 16 | 18 | 16 |
| | | Cumulative Purge Volume (L) | 16 | 32 | 48 | 64 | 82 | 98 | |
| | | Total Purge Volume: | | | | | | | |
| Method: ☒ Waterra ☐ Peristaltic ☐ Disp. Bailer ☐ Subm. Pump ☐ Air Lift ☐ Other | | | | | | | | | |
| Analysis: ☒ | | | | | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | | Comments | | |
| TH86-5 | T. METALS
D. METALS
GEN CHEM | 13-47 | PLASTIC
1 L
2X 125ML | ☒ Yes
☐ No | 8.79 | | STRAIGHT FORWARD INTERESTING BLACK PARTICLES. | | |

* BLACK PARTICLES IN WATER (4522)
 PHOTO
 23
 24



Sample Site (Con't): _____

Field UTM Location: Zn: 08V- Easting: 0583587 Northing: 6912570

Photo Nos.: 4520 - 4521 ⁴⁵²⁴

| Final Groundwater Field Parameters (Following Purge) | |
|--|-------|
| Time (hh:mm; 24h) | 13-47 |
| Temperature (°C) | 3.6 |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | 855 |
| Cond. (µs/cm) | |
| pH | 6.54 |
| Redox (mV) TDS (ppm) | 436 |
| Turbidity (NTU) | 8.79 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data — Continued from Front of Page if required | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features):

NO CONSUMABLES.



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | | |
|--|--------------------------------------|--|--|--|---|--|
| Well Number: | MW14-045 | Project Number: | 1343-005.02 | Date: | SEPT 15 2014 | |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMK + RM | |
| Piezometer Diameter / Screen Length: | 3" x 75' | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | SUNNY ~ 14°C | |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☐ Good ☐ Bad? | |
| Purge Method | | | | | | |
| Watertra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other | |
| w/ 5000W GEN + WATERTRA | | | | | | |
| Initial Depth to Water (m): | 61.180 | Calculations: | Purge Start Time: | 1530 | Purge End Time: SEE NOTES BELOW. | |
| Depth to Bottom (m): | 75.2625 | Water Column (14.02m) | Time () min. interval (24h) | 1559 16:07 1612 1623 | | |
| Submerged Tubing Depth (m): | | | Depth (m) | | | |
| Well Stick-up Height (m): | 0.95 | | Temperature (°C) | 7.6 7.3 7.2 7.3 | | |
| Estimated Water Volume (L): | 99.287L | 3.142 x (0.0475 x 0.0475) x 14.02 x 1000 = 99.287L | pH | 6.71 6.73 6.74 6.74 | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | | | |
| (DTB - DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | 74000 74000 74000 | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) TDS (ppm) | 72000 72000 72000 | | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | 3 3 2.5 2 | | |
| | | | Cumulative Purge Volume (L) | 3 6 8.5 10 | | |
| | | | Total Purge Volume: | | | |
| Method | Watertra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Analysis | SEPT 17 28-30 | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) | Comments |
| MW14-045 | T. METALS
DISS METAL
GEN CHEM. | 8-1730 | PLASTIC
1L
2X 125ML | ☒ Yes
☐ No | 2550 AU 11:18
SEPT 17. | Bailed 10 L (SEPT 16)
DRAWING DOWN THE WATER COLUMN AND VERY TURBID.
INSUFFICIENT WATER FOR PURGING + SAMPLING.
DTB IS NOT 75m - CLOSER TO 62
RETURNED SEPT 17 TO COLLECT SAMPLE WITH BAILER |

DTB COLUMN

| | |
|----------|-------|
| MW14-020 | -78.9 |
| PW14-01 | -78.3 |
| PW14-07 | -76.8 |
| MW14-03 | -60.9 |

SEPT 17

Depth to 6



Sample Site (Con't): _____

Field UTM Location: Zn: 08V Easting: 0584648 Northing: 6913321

WP
(048)

Photo Nos.: 4496 - 4498

| Final Groundwater Field Parameters (Following Purge) | |
|--|---------|
| Time (hh:mm; 24h) | |
| Temperature (°C) | ~ 7.3°C |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | ~ 6.74 |
| Cond. (µs/cm) | ~ 74000 |
| pH | |
| Redox (mV) TDS (ppm) | 72000 |
| Turbidity (NTU) | 11.18 |
| DO (mg/L) | |
| | |
| | |
| | |

| Additional Purge Data - Continued from Front of Page (if required) | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume | | | | | |

General Notes (Condition of well or other features)

Depth to bottom is incorrect on table.
Depth to bottom, is closer to the screen
bottom at 62m - 63m. not enough water column to pump
water and too turbid/muddy. checked by ~~using~~ using
a bailer to collect water (Photo 4501)

CONSUMABLE - 1X BAILER

RETURNED PM ON SEPT 16 TO BAIL 10L
THEN COLLECTED SAMPLE ON SEPT 17 (AM)
~~to collect sample~~ USING
BAILER.



GROUNDWATER SAMPLE COLLECTION SHEET

| | | | | | |
|--|---------------------|---|--|---|--|
| Well Number: | SRK08-P-16 | Project Number: | 1343-005.02 | Date: | OCT 15 2014 |
| Approximate Date Drilled: | | Client: | YG-AAM | Sampler: | GMR + CJS |
| Piezometer Diameter / Screen Length: | 2" PVC | Project Name: | September 2014 Faro Groundwater | Weather/Temp: | -4°C PARTLY CLOUDY |
| CHV (ppm / % LEL): | | Duplicate Collected: | ☐ ID: NONE | Recovery: | ☐ Good ☐ Bad |
| Purge Method | | | | | |
| Waterra | Peristaltic | Disp. Bailer | Subm. Pump | Air Lift | Other |
| Initial Depth to Water (m): | 7.297 | Calculations: | Purge Start Time: | Purge End Time: | |
| Depth to Bottom (m): | 7.316 | $0.019 \times 2 = 0.038$
$420 \times 1.1 = 462$
$38m$ | Time () min. interval (24h) | | |
| Submerged Tubing Depth (m): | | | Depth (m) | | |
| Well Stick-up Height (m): | 0.73 | | Temperature (°C) | NOT ENOUGH | |
| Estimated Water Volume (L): | | | pH | | |
| (DTB - DTW) x 2 (for 2" well diameter) = 1 well volume | | | Cond. (µs/cm) | WATER FOR SAMPLE. | |
| (DTB-DTW) x 1.1 (for 1.5" diameter) = 1 well volume | | | Specific Cond. (µs/cm) | | |
| 2" casing has 0.16 USgal/ft or 2.032 l/m | | | Redox (mV) | 38 mV | |
| 1" casing has 0.04 USgal/ft or 0.508 l/m | | | DO (mg/L) | | |
| 8" sand pack has 0.73 USgal/ft or 9.271 l/m | | | Appearance & Odour (Clear, Silty, HC odours, etc.) | | |
| 6 5/8" sand pack has 0.50 USgal/ft or 6.35 l/m | | | Interval Purge Volume (L) | | |
| | | Cumulative Purge Volume (L) | | | |
| | | Total Purge Volume: | | | |
| Method: | Waterra | Peristaltic | Disp. Bailer | Steel Bailer | Subm. Pump |
| Analysis | | | | | |
| Sample ID | Parameters Analyzed | Sample Time | Container Types | Preservative | Turbidity (NTU) |
| | | | | ☐ Yes
☐ No | |
| | | | | | |

unknown



Sample Site (Con't): _____

Field UTM Location: Zn: ~~CV~~

Easting: 0592198

Northing:

6903145.

(WP
103.)

Photo Nos.:

8515-8516

Final Groundwater Field Parameters (Following Purge)

| | |
|------------------------|--|
| Time (hh:mm; 24h) | |
| Temperature (°C) | |
| DO (mg/L) | |
| Specific Cond. (µs/cm) | |
| Cond. (µs/cm) | |
| pH | |
| Redox (mV) | |
| Turbidity (NTU) | |
| DO (mg/L) | |
| | |
| | |
| | |

Additional Purge Data – Continued from Front of Page (if required)

| | | | | | |
|--|--|--|--|--|--|
| Time () minute interval: | | | | | |
| Depth (m) | | | | | |
| Temperature (°C) | | | | | |
| pH | | | | | |
| Cond. (µs/cm) | | | | | |
| Specific Cond. (µs/cm) | | | | | |
| Redox (mV) | | | | | |
| DO (mg/L) | | | | | |
| Appearance & Odour (Clear, Silty, HC odours, etc.) | | | | | |
| Interval Purge Volume (L) | | | | | |
| Cumulative Purge Volume (L) | | | | | |
| Total Purge Volume: | | | | | |

General Notes (Condition of well or other features):

WATER 5/8" IN WELL. SIDE OF TRAIL.
↑
LEFT IN WELL.