REPORT NO. 118026/2

FINAL REPORT - 2014 WINTER DRILLING PROGRAM, NFRC REACH, FARO MINE, YT

Prepared for:

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1 INTRODUCTION

1.1 SCOPE OF REPORT

This report summarizes the results of the 2014 Winter Drilling Program completed on the Haul Road upgradient of the North Fork of Rose Creek (NFRC) aimed at interception of seepage from the Intermediate Dump (Sulphide Cell) at the Faro Mine, Yukon.

This report summarizes field work and subsequent analysis of field data collected between February 13th and March 22nd, 2014.

1.2 TERMS OF REFERENCES

Zinc concentrations in the NFRC have significantly increased in the fall of 2013, notably since reduction in stream flow in November 2013. Detailed synoptic water quality surveys in the NFRC carried out by on-site staff (TEES) and outside consultants (EDI) along the reach of the Intermediate Dump (between stations R7 and X2) indicated that highly impacted seepage is entering the NFRC under the portion of the NFRC covered by the haul road (referred to as "rock drain").

A detailed evaluation of contaminant loading (Zn and sulphate)[1] and geochemical fingerprinting[2] indicated that highly contaminated seepage from the Intermediate Dump (likely the "Sulphide Cell") is the most probable source of this contamination.

Based on this analysis, RGC proposed a drilling program aimed at (i) delineating the current extent of this contaminant plume and (ii) installing a series of pumping wells to intercept this seepage (see Figure 1-1 reproduced from the original proposal). Initially, RGC had recommended drilling several small diameter "test holes" from the haul road (for Options 3 and 4) to identify subsurface condition and groundwater quality conditions. Provided that highly impacted seepage could be identified, larger diameter pumping wells should then be installed to intercept this seepage (preferably at Option 3).

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[1] Email from C. Wels (RGC) to A. Turcotte (YG-AAM) dated December 6, 2013

[2] Email from C. Wels (RGC) to A. Turcotte (YG-AAM) dated December 18, 2013

However, a subsequent cost-benefit analysis using preliminary quotes for drilling cased holes through >40m of waste rock (provided by Midnight Sun Drilling) indicated that it would be more cost effective to drill all exploratory holes with a larger diameter casing suitable for installation of pumping wells[3].

On the request of YG-AAM, RGC prepared a scope of work for all field work and subsequent design of a seepage interception system[4]. This proposed scope of work included preparation of a drilling tender for selection of a suitable drilling subcontractor.

RGC was subsequently retained by YG-AAM to complete the proposed scope of work under contract # C00022012.

This final report of the 2014 Winter Drilling Program summarizes all field work completed by end of March 2014 and subsequent data interpretation completed by June 2014. Additional testing and monitoring in the new wells installed during the 2014 Winter Drilling program is planned for July 2014 (Phase 2 NFRC work) and will be summarized under separate cover.

1.3 SCOPE OF WORK

The scope of work comprised four main tasks:

- Task 1: Design of Drilling Program
- Task 2: Execution & Supervision of Field Work
- Task 3: Analysis and Interpretation of Field Work
- Task 4: Reporting & Project Management

Task 1 included development of a drilling tender, specific operating procedures for drilling and sampling, well installation and hydraulic testing as well as a health and safety plan (HSP) for the winter field work.

Due to the anticipated difficult drilling conditions (through waste rock) the drilling tender required drilling techniques using casing advance (using Dual Rotary or Symmetrix systems). In an attempt to gain control of the water quality impact on NFRC as quickly as possible, priority was given to drilling contractors who could mobilize to site at the earliest time possible (i.e. mid-February considering lead time for material orders). Midnight Sun Drilling (MSD) of Whitehorse, YT, was selected as the drilling

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[3] Email from C. Wels (RGC) to A. Turcotte (YG-AAM) dated January 9, 2014

[4] RGC proposal dated January 20, 2014 and entitled “Proposal - 2014 Winter Drilling Program & SIS Design, Intermediate Dump, Faro Mine, Yukon”

contractor for this project owing to their local drilling experience (including winter drilling) and their ability to meet the stringent time frame.

Task 2 comprised the scheduling of the drilling subcontractor, coordination for support from TEES on-site staff, supervision and direction of the drilling program, preliminary sample analysis and continuous communication with YG-AAM staff on the progress of the program.

Task 3 comprised analysis and interpretation of all field work, including preparation of drill logs and geological sections, analysis of hydraulic testing data, and interpretation of groundwater levels, water quality and geochemical testing data with the aim to delineate the seepage plume and to design a suitable seepage interception system for this area.

This report presents the results of Task 2 and Task 3.

1.4 REPORT ORGANIZATION

This report comprises the following technical sections:

- **Section 2 – Field Methods and Results** summarizes the field work completed and presents the results of drilling, well installation, and physical and chemical testing of the wells.
- **Section 3 – Discussion** provides an interpretation of the key findings and discusses the implications for seepage interception in this area.
- **Section 4 – Conclusions and Recommendations** summarizes the main conclusions of this field study and provides recommendations for future hydrogeological work.

2 FIELD METHODS & RESULTS

2.1 OVERVIEW

The 2014 Winter Drilling Program at the Faro Mine Site was conducted from February 13th 2014 to March 22nd 2014. The investigation consisted of drilling, installation of monitoring and pumping wells, hydraulic testing, water sampling, and groundwater surveys on the newly installed wells. All related field work tasks, including logging the drill cuttings, groundwater sampling and monitoring during flow tests, well installation, development supervision, and water level and quality sampling were supervised by Tilman Roschinski (RGC) and Alex Trapp (RGC). On-site support was provided by Tlicho Engineering & Environmental Services Ltd. (TEES) who provided operational assistance and analyzed preliminary groundwater samples in their on-site laboratory.

A total of seven (7) boreholes were drilled, three (3) of which were completed as pumping wells with stainless steel screens (“PW-14” series) and the remaining four (4) were completed as PVC monitoring wells (“MW-14” series). Out of the four monitoring wells, two were installed as dual nested monitoring wells, and two as single standpipe piezometers. Figure 2-1 shows the locations of the completed wells. Due to the exploratory nature of the work the locations of some of the wells were altered from the initial proposal in accordance with findings during the field work to better suit the purpose of the program.

Note that due to budgetary constraints, the total meterage of the drilling program was limited to approximately 500 m. The original scope of work (for the initial program) had assumed drilling of nine (9) boreholes. However, depth to water and depth to “fresh” bedrock was typically deeper than originally anticipated at most locations. The number of boreholes was therefore reduced from nine (9) to seven (7) to stay within the original drilling budget. This reduction in the number of boreholes was considered acceptable in light of the apparent lack of highly impacted seepage encountered in the target areas.

2.2 BOREHOLE DRILLING

Drilling was performed by Midnight Dun Drilling Inc. of Whitehorse, YT using a 2007 Sandvik Marlin M5 Truck mounted Air Rotary drill rig equipped with a 350psi/1050cfm air compressor and a Mack flatdeck / Hiab truck for support. The boreholes were drilled with direct circulation using an 8” Symmetrix drill bit that locks into a 11.5” casing shoe on 10” casing. Thus the 10” casing was advanced along with the drill bit in an 11.5” diameter borehole. This method provided the most reliable way of advancing the borehole in the challenging drilling conditions (through waste rock and overburden soils) and prevented the drill and drill casing from becoming stuck in the borehole. Water was injected only at depth, past the water table when clay-rich, wet drill cuttings were preventing circulation of air through the annulus between the drill string and the casing. Drill cuttings were discharged at the surface through a cyclone.

All drill cuttings were sampled, bagged and logged at 1 m intervals: first, establishing the relative proportions of clay, silts, sands, gravels and/or cobbles; then, describing color, texture, moisture and composition. The drill bit pulverized most of the drill cuttings into a fine, silt-sized powder and therefore the exact grain-size distribution in the formation was difficult to identify.

Field measurements of paste pH and electrical conductivity (EC) were measured on each sample using a solids-to-water ratio of approximately 1:2.5 (by volume). Based on the field paste pH/EC measurement, 35 waste rock samples were selected for additional analysis by SGS in Burnaby, B.C. Lab analyses included measurements of rinse pH and EC, Acid-Base Accounting (ABA) tests, and shake flask extraction (SFE).

Air lift testing and analysis for water quality of formation water was originally planned but could not be executed at any of the boreholes during drilling due to a combination of (i) difficulty in lifting the casing to expose the natural formation (ii) insufficient submergence below water table relative to depth to water and/or (iii) low recharge of natural formation.

2.3 WELL INSTALLATION

Table 2-1 summarizes the well construction details, including the approximate coordinates, total depth, screening interval(s), well stickup, screened lithology and depth to water. The type of well installation was determined based on the lithology, estimated borehole yield, and initial water quality. Boreholes were only completed as a 6-inch diameter pumping well if either (i) adequate well yield and/or (ii) significant water quality impacts (based on field EC and initial zinc concentrations determined by the on-site lab) were observed.

The pumping wells (designated as “PW14”) were installed using 6” diameter 20-slot 304L stainless steel ‘wire-wrap’ screens manufactured by Variperm of Calgary, Alberta, with Schedule 40 soft steel water well riser pipe to surface. PW14-01 is screened across both the overburden (colluvium and glacial till) and shallow bedrock. PW14-01 and PW14-07 are screened in overburden (glacial till and glaciofluvial sediments) only. PW14-07 was installed with two screening intervals that are hydraulically connected. The upper screen is intended to intercept potentially perched seasonal seepage flow (if present).

At PW14-06, a 6" slot 20 stainless steel screen was originally installed from 44.5 m to 63.4 m bgs. However, this screen was compromised (filter pack sand was observed entering the screen during development). Hence, a second (internal) 4" diameter stainless steel screen was installed from 51.1 m to 61.8 m bgs with a 4" riser pipe that connects to the 6" riser pipe with a K-packer at 43.3 m bgs.

At all well locations, the 10” welded steel casing was pulled up to expose the screening interval and bentonite seal above the filter pack but the remaining 10” casing was left in place to protect the well string from coarse waste rock. The annulus between the well string and the 10” steel casing was sealed using bentonite chips.

At many locations, water yields encountered during drilling were low to very low (<< 0.1 L/s) and/or water quality was not significantly impacted. At those locations, the borehole was completed as a monitoring well instead of a pumping well (see Figure 2-1). The monitoring wells (designated as “MW14”) were completed with flush-threaded Schedule 80 PVC pipe using 20-slot screen sections capped at the base with non-perforated end caps. Well diameters used were 2”, 4”, or 6” nominal diameter.

One borehole (BH-03) was completed as a single (6”) monitoring well. Two boreholes (BH-02 and BH-04) were completed as dual nested monitoring wells. In those wells, a 2” nominal diameter PVC well was installed in the deeper screened interval, and a 4” nominal diameter well was installed in the shallower interval. The wells were distinguished in name with the suffix “D” for the deeper well and “S” for the shallower well.

The coordinates of the wells and geodetic elevation of the top of casing (top of steel protective casing) were surveyed by Yukon Engineering Services (YES) in early October 2014 (see Table 2-1).

Table 2-1.

Well Installation Details, 2014 Winter Drilling Program

Well ID	Coordinates (LT Level 800)		Date of Installation	Drilled to	Depth to bottom	Screening Interval	Screened Lithology	Screen material	Well Stickup[6] (Steel Casing)	Top of Casing (TOC)	DTW Mar 08 2014	DTW Mar 10 2014
	Northing	Easting		m bgs[1]	m b TOC	m bgs			m ags[2]	m bgs[1]	m b TOC	m b TOC
PW14-01	584752.0	6913152.0	Feb 26, 2014	78.0	78.3	61.0 - 76.0	Overburden	SS 6"	0.97	1147.48	59.51	frozen
MW14-02S	584760.0	6913129.0	Mar 2, 2014	78.0	78.9	59.5 - 65.5	Overburden	PVC 4"	0.97	1146.15	57.52	57.53
MW14-02D	584760.0	6913129.0	Mar 2, 2014			72.0 - 78.0	Overburden	PVC 2"	0.97	1146.15	58.50	58.48
MW14-03	584615.0	6913290.0	Feb 15, 2014	60.0	60.9	44.7 - 56.3	Overburden	PVC 6"	0.93	1157.52	54.32	54.51
MW14-04S	584655.0	6913319.0	Feb 27, 2014	74.0	75.2	47.2 - 61.7	Overburden/bedrock	PVC 4"	0.91	1159.82	60.82	61.23
MW14-04D	584655.0	6913319.0	Feb 27, 2014			64.8 - 74.0	Bedrock	PVC 2"	0.91	1159.82	69.28	69.47
MW14-05	584695.0	6913348.0	Feb 21, 2014	65.5	66.9	48.0 - 65.3	Overburden/bedrock	PVC 6"	0.91	1161.96	53.63	53.73
PW14-06	584480.0	6913308.0	Mar 10, 2014	67.0	62.9	44.6 - 63.2	Waste rock/overburden/bedrock	SS 4"	0.96	1158.10	-	48.74
PW14-07	584692.0	6913191.0	Mar 7, 2014	78.0	76.8	56.1 - 65.1	Overburden	SS 6"	0.97	1151.97	66.32	66.31
						71.1 - 77.1	Overburden					

1. m bgs = meters below ground surface
2. m ags = meters above ground surface
3. m amsl = meters above mean sea level
4. DTW = depth to water
5. m b TOC = meters below top of steel casing
6. Ground surface and stickup from ground vary with seasons due to snowfall and road grading

2.4 WELL DEVELOPMENT

Well development was completed by Midnight Sun Drilling using air-lifting and/or pumping to remove cuttings/fine sediment present inside the well and in the immediate vicinity of the well screen. Airlifting was achieved using an Ingersoll-Rand 200psi/400cfm air compressor, or the drill rig's compressor (on PW14-06 and PW14-07). The compressed air was delivered using a 1" diameter PVC tremie line inserted inside the well. Development using air lifting was initiated by progressively supplying compressed air inside the well to force water out at the collar. Discharge water was collected with a bucket or through a tarp set up over the well.

The successful development of a well by air partially depended on the well yield. Development using airlifting did not provide a continuous flow of water in wells with a low recharge rate (MW14-03, MW14-04S, MW14-02D, MW14-05). In PW14-01, the water could not be airlifted due to insufficient submergence and in PW14-07 the compressed air forced its way out between the well and the 10" casing, shutting down the test. Only PW14-06 was developed by airlifting for the full planned duration of two hours.

Given the difficulties with air lifting all wells were subsequently developed using a submersible pump as much as possible. Pumping was performed using a 1hp Grundfos electrical submersible pump, installed inside the well screen and coupled to the 1" diameter PVC tremie line, or a 5hp Grundfos electrical submersible pump connected to a 2" steel pipe.

Turbidity, pH and electrical conductivity (EC) of the purged water were monitored and recorded at regular intervals until completion of well development. At the end of well development, a water sample was collected for analysis of dissolved zinc at the on-site laboratory (as initial feedback to determine future drilling targets).

Table 2-2 summarizes the results of well development and the initial water quality observed (final) field EC and dissolved zinc concentrations (analyzed in on-site lab).

Table 2-2.

Results of Well Development

Well ID	Well Diameter	Well Yield Airlifting	Well Yield Pumping	Volume Pumped	Last EC^1 Value	Last Dissolved Zinc Value	Tests performed	Comments
	mm	(L/s)	(L/s)	L	(mS/cm^2)	mg/L		
PW14-01	152	-	> 1.0	12,260	0.463	0.48	step-test, constant rate	clear
MW14-02S	98	-	> 1.0	25,500	0.304	0.02	airlift, pumping	clear
MW14-02D	52	-	-	-	-	-	Waterra	no water recovered
MW14-03	152	< 0.01	-	305	0.465	< DL	airlift, Waterra pump, pumping	very slow recovery, cloudy water
MW14-04S	98	-	-	-	2.51	0.02	airlift, bailer	bailer sample only
MW14-04D	52	-	-	-	-	0.01	bailer	bailer sample only
MW14-05	152	0.06	0.01	750	2.46	1.16	airlift, pumping	cloudy
PW14-06	102	0.19	0.35	8,500	19.45	3,311	airlift, step-test, constant rate	cloudy orange at end of pumping
PW14-07	152	0.15	0.5	24,700	1.06	1.31	airlift, step-test, constant rate	slightly cloudy

1. EC = electrical conductivity
2. mS/cm = milliSiemens per centimeter

2.5 HYDRAULIC TESTING

Following well development, hydraulic testing was performed on those wells with sufficient recharge: PW14-01, MW14-02S, PW14-06, and PW14-07. Both step-testing and constant rate testing was conducted to establish the hydraulic properties of the well and surrounding aquifer.

The pump was placed 1.5 m from the bottom of the well and pre-test water levels were recorded after installation of the pump. Water levels were recorded after shut off of the pump until the water level had recovered to within at least 70% of the static water level.

Water level drawdown and subsequent recovery were monitored with a Solinst TLC 100m water level tape and recorded. Manual water level readings were taken at logarithmic time intervals and recorded in a log sheet. In addition, the well performance was monitored with a downhole pressure transducer and onboard data logger (Solinst Levelogger®) at 10 second intervals. Water levels in neighbouring wells were also recorded where the distance to the pumping well permitted useful data collection.

Table 2-3 summarizes pertinent information on the hydraulic testing completed during the 2014 Winter Drilling Program. The recovery of the constant discharge tests were analyzed using the Theis method. The software program AQTESOLV PRO4.0, licensed to RGC, was used to fit the analytical solution to the testing data and to determine hydraulic properties of the screened aquifer material. Outputs from AQTESOLV showing the best fit of these analytical solutions to the recovery data are presented in Appendix C. Hydraulic testing results are summarized and discussed further in section 3.2.

Table 2-3.

Scope of Hydraulic Testing.

Well ID	Type of test	Pumping rate	Duration	Maximum drawdown	Well Yield Pumping	Comments
		L/s	mins	m	(L/s)	
PW14-01	step test	0.63, 1.01	245	0.52	> 1.0	
	constant rate	0.95				
MW14-02S	constant rate	0.95	330	1.66	> 1.0	
MW14-02D	-	-	-		-	2" well, to be completed
MW14-03	-	-	-		-	development only, slow recharge
MW14-04S	-	-	-		-	slow recharge, not sufficient water
MW14-04D	-	-	-		-	2" well, to be completed
MW14-05	constant rate	0.058	256	10.72	0.01	
PW14-06	step test	0.19, 0.63	9, 54	0.04, 11.54	0.35	step test data from well development
	constant rate	0.32	243	2.85		
PW14-07	step test	0.32, 0.57, 0.91	39, 66, 82	0.92, 1.92, 4.27	0.5	
	constant rate	0.91	92	5.10		
	constant rate	1.42	150	8.51		too much drawdown, test ended early

2.6 WATER QUALITY SAMPLING

Upon completion of development and/or the pumping test(s), RGC collected a water sample and shipped it to Maxxam Analytics (in Burnaby, B.C.) for further analysis. All samples were collected following SOPs. This involved collecting field readings of temperature, pH, EC, and oxidation-reduction potential (ORP) with a calibrated YSI field meter before sampling and then collecting samples in pre-washed bottles provided by Maxxam.

1L of unfiltered, un-acidified samples was collected for major ion (i.e. SO_4, Cl) and miscellaneous inorganics, such as alkalinity. Separate samples were collected for total and dissolved metal analysis. RGC filtered and acidified these samples in the field using materials supplied by Maxxam.

Table 2-4 summarizes the date of sampling and some field measurements collected during sampling. These data are likely indicative of general water quality characteristics but measurements were collected prior to adequate well development and purging. Consequently, these initial water quality results are interpreted with caution.

Laboratory reports with full water quality results (general chemistry, total and dissolved metals) are presented in Appendix D. Water quality results are discussed further in Section 3.3.

Table 2-4.

Field water quality results, February/March 2014.

Well ID	Date sampled	Field pH	Field EC (mS/cm)	Field Temp. (°C)
PW14-01	28-Feb-14	5.96	0.463	1.91
MW14-02S	4-Mar-14	7.12	0.304	0.47
MW14-03	2-Mar-14	7.62	0.456	3.42
MW14-05	4-Mar-14	6.62	2.462	6.57
PW14-06	20-Mar-14	4.26	19.45	19.5
PW14-07	14-Mar-14	5.60	0.97	1.8

2.7 GEOCHEMICAL TESTING OF WASTE ROCK

RGC collected a sample of drill cuttings at every meter of drill depth. Samples were collected directly from the rig’s cyclone into pre-labeled, 5-gallon bags. These samples were stored at the respective drill locations until the end of the field program.

A subsample of the silt and clay-sized fraction from each bag was placed into pre-labeled Ziploc bags and stored in a heated facility prior to measuring paste pH and EC. Paste pH and EC were determined by mixing approximately 50 to 70 grams of sample with deionized water at a ratio of approximately 1:2.5 (by volume) and then measuring pH and EC with a Hanna Instruments HI 98130 high range pH/conductivity tester. Samples were processed in batches of ten using a beaker that was washed with deionized water between batches. The conductivity meter was calibrated daily and the pH probe was calibrated at least every 2 hours as required.

Paste pH and EC values are shown on the borehole logs in Appendix B. Paste pH and EC data were used to select 35 waste rock samples that were considered representative of waste rock over particular depth intervals. These samples were delivered to SGS in Burnaby, B.C. and the following static testing was completed:

- Rinse pH and EC
- Modified ABA, with total S, paste pH, fizz test, and carbonate neutralization potential (NP)
- Metals by Aqua regia with ICP-MS finish
- Shake flask extraction (SFE) at a liquid-to-solid ratio of 3:1 with ICP-MS analysis for metals, plus Hg, Cl, F, and general parameters

These tests are standard in the mining industry. Static testing data for the 35 waste rock samples are summarized in Table 2-5 and complete results are provided in Appendix E.

Table 2-5.

Summary of Static Testing Data, 2014 Winter Drilling Program.

Sample ID	Acid Base Accounting						Shake Flask Extraction		
	Rinse pH	Rinse EC	Sulfur	AP	NP	Net NP	Total Acidity t	Sulphate	Zinc
		uS/cm	%	calc.	modified		mg CaCO3/L	mg/L	mg/L
BH1 - 8	7.76	1103	0.44	12	16.7	5	4.28	230	0.003
BH1 - 20	7.44	1860	0.87	24	24.4	1	4.95	600	0.003
BH1 - 20d	7.58	1675	0.87	23	23.5	0	4.74	560	0.002
BH1 - 32	8.66	361	0.35	11	63.3	52	#N/A	57	0
BH1 - 53	8.04	81.1	0.1	3	24.5	21	2.39	8	0
BH2 - 19	7.34	1244	0.58	14	11.5	-3	4.65	466	0.006
BH2 - 45	8.85	387	0.32	10	41.4	31	#N/A	40	0.005
BH3 - 4	6.97	935	3.36	104	17.4	-86	2.96	122	0.021
BH3 -10	4.34	3390	3.21	88	3.6	-85	196.86	1544	88.2
BH3 - 16	6.46	2550	3.53	104	15.2	-89	6.26	1248	0.032
BH3 - 20	6.85	2710	2.21	65	16.7	-48	9.05	860	0.206
BH3 - 25	7.37	1167	0.66	19	12.6	-6	8.14	362	0.004
BH3 - 28	6.9	1184	1.09	32	10.5	-21	6.7	349	0.003
BH3 - 34	4.33	2940	2.55	72	4.6	-67	478.66	1389	147
BH3 - 34d	4.36	3300	2.45	69	4.1	-65	428.52	1513	135
BH4 - 8	7.22	1728	0.59	15	21.6	7	6.85	576	0.002
BH4 - 16	4.13	1684	4.99	147	4	-143	25.1	454	5.61
BH4 - 20	3.61	7030	7.2	207	-3.5	-210	959.02	2272	572
BH4 - 30	5.05	1980	8.28	254	4.5	-250	32.85	478	10
BH4 - 41	4	6880	2.69	72	-3.8	-76	549.64	2304	377
BH5 - 6	7.86	2150	1.02	28	20.4	-7	10.8	851	0.045
BH5 - 12	7.9	1990	0.93	24	17.8	-6	11.33	817	0.058
BH5 - 20	4.08	1730	3.41	93	-0.5	-94	54.68	621	4.64
BH5 - 27	4.46	1445	0.69	18	3.8	-14	18.94	469	3.35
BH5 - 35	6.54	541	0.57	13	2.8	-10	8.7	124	0.007
BH6 - 7	7.28	536	2.82	87	14	-73	10.36	153	0.031
BH6 - 11	5.64	2880	2.58	74	31.4	-42	288.04	1204	173
BH6 - 22	5.29	3510	1.95	51	7.1	-44	204.65	1666	85.2
BH6 - 22d	5.13	3430	2.02	52	7.2	-45	241.05	1807	99.6
BH6 - 33	8.1	2960	1.2	31	15.4	-16	11.2	1131	0.005
BH6 - 40	7.26	2010	2.87	83	15.9	-67	13.56	1170	0.644
BH7 - 10	8.08	938	0.46	13	49.8	37	10.79	246	0.007
BH7 - 18	8.29	1022	0.47	14	76.3	63	11.98	180	0.002
BH7 - 30	7.65	2070	1.59	46	13.3	-33	10.35	783	0.08
BH7 - 35	7.75	1342	0.86	25	15.9	-9	10.78	405	0.037

3 DISCUSSION OF RESULTS

3.1 TARGET ZONES

The 2014 Winter Drilling Program was designed assuming that seepage impacting the NFRC at NF2A, immediately downstream of the rock drain, was originating from the Intermediate Dump (possibly the Sulphide cell). Furthermore, drilling targets were established assuming that groundwater flow generally follows pre-mining topography.

Figure 3-1 shows the final drill locations superimposed on the inferred pre-mining topography in the study area. Three different areas were targeted in the 2014 Winter Drilling Program for potential seepage interception:

- A fence of wells located along the western toe of the Upper Intermediate Dump (MW14-3, -4 and -5) targeting the sediments/shallow bedrock along the western side slope of the original NFRC valley (Area 1)
- A fence of wells located along the main haul road (above the rock drain) (PW14-1, MW14-2 and PW14-7) targeting the deeper sediments of the western portion of the original NFRC valley (Area 2)
- A single well located about 12m west of CH12-MW007 (PW14-6) targeting the shallow sediments/shallow bedrock in the original drainage line from the Sulphide Cell towards the S-Cluster SIS (Area 3).

In summary, highly impacted groundwater (Zn ~3,300 mg/L) at adequate well yield for seepage interception (~0.3 L/s) was only encountered in the well-defined pre-mining drainage line to the west of the rock drain (Area 3). In Area 1, water quality was only slightly impacted (Zn < 1 mg/l) and well yields were inadequate for seepage interception (< 0.01 L/s). In Area 2, well yields were significant (0.5 to greater than 1 L/s) but water quality was only modestly impacted (Zn ~1 mg/l).

The following sections 3.2 to 3.4 provide more details on the hydrostratigraphy, groundwater levels and groundwater quality observed in the different target areas.

Section 4.4 provides an initial discussion of the implications for the design of a seepage interception system for the study area.

3.2 HYDROSTRATIGRAPHY

Figure 3-2 shows an east-west cross-section from the Intermediate Dump towards the NFRC in proximity of the haul road. The cross-section illustrates the main hydrostratigraphic units encountered during drilling.

In Area 1, the following hydrostratigraphy was observed:

- ~42m of mixed waste rock (PAG/NAG), overlying
- 7-12 m of glacial till (clayey/silty sand and/or gravel), overlying
- 3-4 m weathered bedrock, overlying
- fresh phyllite bedrock.

In Area 2, the following hydrostratigraphy was observed:

- ~50-60m of clean waste rock (NAG), overlying
- 2-5m of alluvium (clean gravel) near NFRC (at PW14-2 only), overlying
- >20m of glacial till (clayey silt, some sand and gravel) and/or glaciofluvial sediments (silty/clayey sand and gravel)

In Area 3, the following hydrostratigraphy was observed:

- ~46m of mixed waste rock (PAG/NAG), overlying
- ~4m of colluvium/glacial till (silty sand, some gravel), overlying
- 3-4 m weathered bedrock, overlying
- fresh phyllite bedrock.

It should be emphasized that determination of the in-situ grain size distribution and hence interpretation of geomorphological origin of the drill cuttings was very challenging due to the crushing of the natural material caused by the Symmetrix drilling method. Drilling in fresh phyllite bedrock in Areas 1 and 2 did not intersect any significant water bearing structures (typically very dry, dusty drilling). However, the upper, weathered and possibly fractured bedrock is inferred to have moderate permeability, at least in some locations (e.g. at PW14-06).

Hydraulic testing data for five wells yielded sufficient data for analysis. The results of the analysis are presented in Table 3-1 and suggest that the glacial till sediments in the area are generally of low to very low permeability whereas the fluvial and glaciofluvial sediments in the NFRC valley have moderate to high permeability, likely due to the presence of layers of clean sand and/or gravel.

Table 3-1.

Hydraulic Testing Analyses Results.

Well	Aquifer Thickness (m)	Transmissivity (m2/s)	Hydraulic Conductivity (m/s)	Test analyzed
PW14-01	3	2.3E-04	7.7E-05	Recovery
MW14-02S	3	5.8E-04	1.9E-04	Recovery
MW14-05	12	7.3E-07	6.1E-08	Recovery
PW14-06	3	2.8E-05	9.3E-06	Recovery
PW14-07	4	4.0E-04	1.0E-04	Recovery

3.3 GROUNDWATER LEVELS

The static groundwater levels observed on March 10, 2014 in the various wells and the inferred position of the groundwater table are also shown in the geological cross-section (Figure 3-2).

The following observations can be made:

- In Area 1, the groundwater levels are approximately 8-12 m below the natural (pre-mining) topography and hence significantly below the base of the waste rock; the nested well completed in this area (MW14-4S/D) indicates a strong downward gradient (to be confirmed by continuous monitoring)
- In Area 2, the groundwater levels gradually approaches natural (pre-mining) topography (from west to east); in proximity of the historic (now buried) NFRC stream channel (at PW14-02S/D), the inferred water table intersects pre-mining topography and mounds about 1-2m into waste rock (Note: natural NFRC sediments may have settled in this area due to the weight of the overlying waste rock); the nested well completed near the buried NFRC (MW14-2S/D) indicates a moderate downward gradient (to be confirmed in future monitoring)
- In Area 3, the groundwater level is only about 2 m below the natural (pre-mining) topography (similar to the water level observed at near-by monitoring well CH12-MW007)[5]; note, that the geodetic groundwater level in this area is slightly higher (by about 2-3m) than in Area 1 (at MW14-03 (to be confirmed after surveying of the well top-of-casings);

It should be emphasized that these groundwater levels are preliminary and additional, regular monitoring will be required to determine whether low-yielding wells have fully recovered. Note also that groundwater levels can be expected to be near their lowest seasonal level in March due to winter

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[5] Note that PW14-6 is significantly off the geological cross-section shown in Figure 3-2

baseflow conditions. Seasonal water level monitoring will be required to determine the seasonal variations in groundwater levels in these newly completed wells.

The apparent strong local gradients between the wells in Area 1 may indicate a heterogeneous aquifer system, perhaps through highly localized preferential flow paths through the waste rock that eventually drain into the underlying fractured bedrock.

3.4 GROUNDWATER QUALITY

The original work scope proposed sampling at discrete depths during drilling by airlifting. However, depth-discrete sampling was not possible due to the inability to airlift groundwater during drilling.

As a result, the detection (and potential screening) of depth-discrete zones of highly-impacted water, if present, was not possible. Instead, the screening intervals for the pumping wells were designed conservatively long, i.e. targeting most of the saturated overburden and bedrock intercepted in the borehole.

Table 3-2 summarized selected water quality data for the wells sampled in February and March 2014 during the 2014 Winter Drilling Program. Wells MW14-03 and MW14-05 are low-yielding wells that recharge over a period of hours to days. Consequently, there was not sufficient time to purge all drill water from the wells and hence water quality data for these wells may not be representative of aquifer conditions.

The available water quality data clearly indicate that highly-impacted seepage that is characterized by EC and zinc was only intercepted in well PW14-06 (near CH12-MW007). This well is located within a historic drainage channel and screens in colluvium/glacial till and underlying weathered bedrock.

Table 3-2.

Selected water quality results (from Maxxam Analytics) for groundwater samples collected in February/March 2014.

Parameter	Unit	PW14-01	MW14-02S	MW14-03	MW14-05	PW14-06	PW14-07
Lab Conductivity	uS/cm	463	304	749	3,440	20,200	917
Lab pH	pH	6.91	7.88	8	7.69	4.23	6.6
Diss. Sulphate (SO4)	mg/L	58.5	24.1	79	1,550	-	-
Dissolved Metals							
Cadmium (Cd)	ug/L	0.051	0.022	0.031	0.124	2,890	0.277
Cobalt (Co)	ug/L	5.56	0.77	2.36	12.5	7,660	7.97
Manganese (Mn)	ug/L	1,900	106	413	1680	582,000	1,250
Nickel (Ni)	ug/L	19.3	1.1	9.0	52.8	12,900	20.6
Zinc (Zn)	ug/L	926	17.8	27.4	32.9	3,350,000	1,050
Notes							
samples shown in shaded cells were not completely developed							

It should be noted that the water from pumping well PW14-06 is significantly more impacted than the latest water quality results available for the nearby monitoring well CH12-MW007 (which was collected on September 12, 2013). Specifically, lab EC was 20 mS/cm at well PW14-06 compared to 16 mS/cm at CH12-MW007. The Zn concentration in water from PW14-06 was also higher than in well CH12-007 (i.e. 3,350 mg/L Zn at PW14-06 vs. 1,530 mg/L Zn at CH12-MW007). Additional sampling of wells PW14-01 and CH12-MW007 is recommended to confirm the very high Zn concentrations observed at PW14-06 and to determine whether Zn concentrations at CH12-MW007 have reached similarly levels.

The water quality impacts observed in the wells located in Area 1 were typical of “slightly-impacted” groundwater observed in other monitoring wells in the area (e.g. P96-6). The most impacted well in Area 1 (at MW14-05) showed moderately elevated field-EC (and sulphate) but zinc concentrations were very low (~0.032 mg/L), i.e. four orders of magnitude lower than in seepage from the Sulphide Cell. Seepage with such low zinc concentrations cannot explain the observed increase in zinc load (and zinc concentration) in the NFRC (see section 3.6 below).

The water quality observed in the pumping wells PW14-01 and PW14-07 located further downgradient in the NFRC valley (Area 2) showed slightly more elevated dissolved zinc concentrations (~1.0 mg/l) but lower EC (and sulphate) concentrations than in Area 1. This water quality can also not explain the observed increase in zinc load (and zinc concentration) in the NFRC at NF2A and NF2. Notably, peak concentrations of zinc and other trace metals in seepage collected at NF2A during the winter low flow period (see Figure 3-7) are significantly higher than observed at either PW14-01 and PW14-07 (c. Tables 3-2 and 3-5). This suggests that the deeper groundwater intercepted in the NFRC aquifer is not the primary source of contamination to NFA and ultimately NFRC (see Section 3.6 below).

The water quality observed in monitoring well MW14-2S shows very little impact by seepage (i.e. field EC=0.3 mS/cm and Zn~ 0.018 mg/L). This well is screened in shallow sediments across the water table and located in close proximity of the buried NFRC. Water quality at this location is very similar to that observed in the NFRC upstream of the rock drain (at NF1) and downstream of the rock drain (at NF2B) (see Table 3.3 below). This is an important observation that would suggest that the zinc loading to NFRC is likely occurring downstream (i.e. to the south) of MW14-2S.

It should also be noted that water quality in monitoring well SRK05-SP2, located immediately downgradient of the rock drain (near NF2) and screened in glaciofluvial sediments shows very limited impact (Zn ~0.135 mg/l). This would suggest that the highly impacted seepage reaching NF2A (and ultimately the NFRC) likely follows a very shallow, potentially perched, pathway. Such a shallow, concentrated and potentially perched seepage is difficult to identify using available drilling techniques from the top of the waste rock (requiring casing advance) and even more difficult to intercept using pumping wells.

3.5 WASTE ROCK CHARACTERIZATION

Data from static testing are illustrated in Figures 3-3, 3-4, 3-5 and 3-6. The plots help distinguish potentially acid-generating (PAG) waste rock from non-PAG waste rock. Waste rock that is characterized by a NP:AP ratio of 3:1 or higher is considered non-PAG. PAG waste rock is characterized by a NP:AP ratio that is lower than 1:1 (see Figure 3-3).

The majority of waste rock samples from boreholes located along the haul road (i.e. BH1, BH2 and BH7) are non-PAG. Waste rock samples from boreholes drilled on the lower bench of the Intermediate Dump (BH3, BH4, BH5 and BH6) are PAG. Drill hole BH4 was characterized by the highest AP values.

Figures 3-4 compares the NP:AP ratio to the net neutralizing potential (NNP) of a waste rock sample. NNP is calculated as the difference between NP and AP. Figure 3-5 compares NNP to rinse pH values. The majority of samples from BH3, BH4, BH5 and BH6 have a negative NNP and a low rinse pH, which suggestions that any buffering potential has already been depleted.

Table 3-3 provides summary statistics of ABA testing for the seven drill holes. These summary statistics support the assertion that waste rock samples from boreholes BH3, BH4, BH5, and BH6 are PAG and that waste rock from the boreholes in the haul road (BH1, BH2, and BH7) are predominantly non-PAG. This finding agrees well with reports that the haul road was predominantly constructed from calc-silicate waste rock and calciferous phyllite (ICAP, 1996; SRK, 2004).

Table 3-4 provides ABA summary statistics for different waste rock types at the Faro Mine Site compiled by SRK (2004)[6]. A comparison of data from the current study (Tables 2-4 and 3-3) with these previously-collected data indicates that the rock material sampled at BH3, BH4, BH5, and BH6 exhibit characteristics of sulphide rocks sampled in the Main and Intermediate dumps. However, the sulphide content is generally much lower and NNP less negative than for waste rock material classified as "sulphide material". These results are consistent with historic air photos and anecdotal information that suggest that the lower level of the Intermediate Dump contains non-segregated waste rock that includes pockets of sulphidic material but not the massive sulphide material known to have been placed in the Sulphide Cell.

Table 3-3.

Summary statistics of geochemical analyses, 2014 Winter Drilling Program.

Borehole	Acid Base Accounting				AR Digestion		Shake Flask Extraction		
	Rinse pH	Rinse EC	S2-	Net NP	Sulfur	Zinc	Total Acidity t	Sulphate	Zinc
		uS/cm	%		%	ppm	mg CaCO3/L	mg/L	mg/L
BH1	7.90	1016	0.47	16	0.54	893	4.09	291	0.002
BH2	8.10	816	0.39	14	0.45	884	4.65	253	0.006
BH3	5.95	2272	2.21	-59	2.30	3942	142.14	923	46.3
BH4	4.80	3860	4.45	-134	3.90	7532	314.69	1217	193
BH5	6.17	1571	1.12	-26	1.31	2557	20.89	576	1.62
BH6	6.45	2554	2.01	-48	2.15	3257	128.14	1189	59.7
BH7	7.94	1343	0.78	14	0.84	1619	10.98	404	0.032

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[6] SRK June 2004. Geochemical Studies of Waste Rock at the Anvil Range Mining Complex, Phase 3 Report. Project Reference Number: SRK 1CD003.11.610.

Table 3-4.

Summary of previous ABA studies at the Faro Mine site (modified from SRK 2004)

Doc	Sample	Rock type	S %	NP	NNP	NP/AP	paste pH
Sched D	Core	Schist	0.5	39	23	3.4	8.1
Closure Plan	Core		0.3	60	51	6.8	8.3
ICAP	WRD		1.1	10	-24	0.3	6.7
SRK 2002	WRD		6	13	6	0.9	6
Sched D	Core	Sulphide	24.9	27	-752	0	6
ICAP	WRD		17.9	-3	-561	0	4.7
SRK 2002	WRD		18.6	-13	-551	-0.1	3.7
Sched D	Core	Calc-silicate	0.4	89	77	15.7	8.9
Closure Plan	Core		0.2	79	73	27.7	9.1
ICAP	WRD		0.4	63	50	4.8	8.3
SRK 2002	WRD		1.1	43	13	1.5	7.2
Sched D	Core	Intrusive	0.3	19	9	1.7	8.2
ICAP	WRD		0.6	12	-8	0.3	6.3
SRK 2002	WRD		0.7	16	1	1.1	6.4

Figure 3-6 compares the SFE Zn data with SFE pH. A strong correlation between these parameters is not apparent. Note that SFE Zn concentrations can vary widely (from almost 0 to 600 mg/L Zn) in moderately acidic conditions (pH ~4.5 to 6.0). Zn is known to be mobile under circum-neutral as well as acidic conditions. While elevated zinc may indicated local “hot spots” where oxidation occurs and zinc is produced from oxidation of sphalerite, elevated zinc observed in selected waste rock samples may also be indicative of zones (or layers) of preferred flow paths where seepage high in zinc is percolating through the waste originating from other source areas (e.g. from the sulphide cell).

In general, the geochemical testing results indicate that the lower bench of the Intermediate Dump (at least in BH3, BH4, and to a lesser extent BH5) is likely a source area that contributes to high concentrations of Zn in the groundwater. However, seepage originating from this mixed waste rock material is likely to exhibit lower metal concentrations than seepage from the Sulphide Cell.

3.6 CONTAMINANT LOADING TO NFRC

Water quality in North Fork Rose Creek is monitored routinely in the reach between upstream of the rock drain and the confluence with the South Fork of Rose Creek. Figure 2-1 shows the surface water monitoring stations (in yellow) in the NFRC along the study reach.

During the 2013/2014 fall and winter period, TEES took water quality samples at stations NF2A, NF2B, NF2 and X2 three times per week for field parameters and on-site lab analysis of zinc. In addition, EDI sampled a more comprehensive list of stations along the NFRC once a week for analysis of full water quality (general chemistry and total/dissolved metals). In addition, streamflow measurements were taken by TEES at NF2 and X2 using the salt dilution method.

Figure 3-7 shows time trends of dissolved zinc at NFRC surface water monitoring stations NF2A, NF2 and X2. The estimated instantaneous stream flows at stations at NF2 and X2 are shown for comparison.

The following conclusions can be drawn from surface water quality monitoring data presented in Figure 3-7:

- The highest water quality impact is observed at station NF2A in the western side channel of the original NFRC stream channel now covered by the Haul Road rock drain. Zinc concentrations at NF2A increased from around 2 mg/L (in late November 2013) to as high as 8-10 mg/L and finally 14 mg/L before this sampling site froze up.
- The impacted stream flow from NF2A (western channel) and the unimpacted water from the eastern channel (NF2B) combine just upstream of station NF2. Zinc concentrations at NF2 increased from about 0.5 to 0.7 mg/L (in early December 2013) to a high of 1.2 to 1.4 mg/L during the winter low flow period (January to March 2014).
- Station X2 exhibited a gradual increase in zinc concentrations from around 0.4 mg/L (in late November 2013) to a high of 1.2 mg/L during the winter low flow period (January to March 2014).

Note that monitoring station NF2 is located only a few meters downstream of the confluence of NF2A (highly impacted) and NF2B (unimpacted). As a result water quality at this station is very sensitive to the exact location of sampling and water quality cannot be assumed to be representative of "well-mixed" NFRC water. This likely explains the significantly higher zinc concentrations observed at NF2 compared to at X2 during the period early December 2013 to mid-January 2014 when seepage from NF2A showed particularly high impacts. Once seepage at NF2A had entirely frozen up (early February) water quality at NF2 and X2 were very consistent (Figure 3-7).

In contrast, NFRC stream water can be assumed to be well-mixed at station X2, some 800m downstream of the confluence of NF2A and NF2B. Hence, water quality observed at X2 was used for estimation of contaminant loads to NFRC beneath the rock drain.

Load balance calculations were completed using stream water quality collected in the NFRC for the winter low flow period. Table 3-5 shows the water quality observed at various surface water monitoring stations along this reach of the NFRC on January 14, 2014. Streamflow measurements taken on January 15 2014 were 570 L/s at NF2 but only 290 L/s at X2. According to TEES, this low streamflow measurement at X2 is not reliable due to incomplete mixing at station X2 at the time. Hence the streamflow estimate for NF2 was used for estimation of contaminant loads in the NFRC[7].

Assuming a total stream flow of 570 L/s and a representative zinc concentration of 0.653 mg/L the total zinc load in NFRC is estimated to be about 32.2 kg/day. Note that similar, but slightly lower, total zinc loads were estimated at NF2/X2 for similar low flow in the early winter (19.3 kg/day zinc on November 28, 2013). The observed zinc loads entering the NFRC in the rock drain reach are very significant. For example, the zinc load entering the NFRC along the rock drain reach represents about 40% of the total zinc load currently intercepted in the S-cluster SIS.

Table 3-5.

Selected water quality results in NFRC along the study reach (collected by EDI on January 14, 2014).

Parameter	**Unit**	**NF1**	**NF2A**	**NF2B**	**NF2**	**X2**
Lab Conductivity	uS/cm	353	427	262	295	289
Lab pH	pH	7.93	7.84	8.01	7.84	7.88
Diss. Sulphate (SO4)	mg/L	28.5	108	20.8	38.1	33.5
Dissolved Metals						
Cadmium (Cd)	ug/L	0.06	4.74	0.025	1.06	0.425
Cobalt (Co)	ug/L	0.1	30.7	0.1	7.07	2.74
Manganese (Mn)	ug/L	71.8	1460	18.2	350	182
Nickel (Ni)	ug/L	0.6	44.9	<0.5	10.4	4.55
Zinc (Zn)	ug/L	23.1	7030	20.9	1700	652
Notes:						
samples taken January 14 2014 by EDI						

Conservative mixing calculations were used to estimate the relative contribution of NF2A and NF2B to the observed total stream flow and zinc load to NF2/X2. Assuming complete mixing of NF2A and NF2B and no additional sources of zinc, the contribution of the highly impacted flow from NF2A (with 7.03 mg/L zinc) is estimated to contribute about 51 L/s or 9% to the total stream flow in NFRC (at

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[7] Detailed stream flow surveys and cross-sectional sampling at NF2 and X2 conducted by ERL subsequently on July 7, 2014 confirmed these assumptions and total contaminant load estimates entering the NFRC downstream of the rock drain (see RGC letter report submitted to YG on September 16, 2014 entitled "*REV-1 Progress Report - Phase 2 NFRC Drilling Program, Faro Mine, Yukon*" for more details).

NF2/X2) but 31.2 kg/day (or 97%) of the total zinc load. In contrast, stream flow emerging at NF2B (with 0.02 mg/L zinc) provides the vast majority of stream flow (519 L/s or 90%) but only 3% of the zinc load in NFRC (at NF2/X2). Note that the small zinc load at NF2B originates from the reach upstream of the rock drain.

Additional loading calculations were completed for a suite of contaminants of concern (sulphate, cadmium, cobalt, manganese, nickel and zinc) to determine the likely source(s) of the contaminant loads in NF2A and ultimately in the NFRC at NF2/X2. The potential contaminant sources considered here are as follows:

- PW14-06 representing highly impacted seepage from the Sulphide Cell
- PW14-01 representing modestly impacted groundwater from the NFRC aquifer (beneath the rock drain)
- P05-04 representing modestly impacted groundwater from the NFRC aquifer (in Zone 2 outwash area)

Table 3-6 lists the estimated seepage flows required to explain the incremental contaminant load for the various contaminants of concern entering the NFRC beneath the rock drain[8]. These flows suggest that a very small amount of seepage from the Sulphide cell or a very large flow from the impacted aquifer (PW14-1), or a combination of the two sources, is required to explain the significant increase in zinc load (in the order of 30 kg/day) between NF1 and NF2. Moreover, the geochemical signature of water from PW14-01 and P05-04 suggests that neither of these sources is a likely source of loads to NFRC.

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[8] For this calculation, the incremental load entering the NFRC under the rock drain on January 14, 2014 was estimated as follows: 570 L/s x [Zn @X2] – 519 L/s x [Zn @NF2B]

Table 3-6.

Flow rates of different potential sources required to account for incremental load in NFRC between NF1 (pond) and X2.

Parameter	PW14-06 (Sulphide Cell)	PW14-01 (NFRC aquifer)	P05-04 (Zone 2 Outwash Area)
Flow required to explain SO_4 Load	0.44	151	52.5
Flow required to explain Cd Load	0.24	13,500	120
Flow required to explain Co Load	0.20	270	1450
Flow required to explain Mn Load	0.14	42	1225
Flow required to explain Ni Load	0.18	120	90
Flow required to explain Zn Load	0.11	390	85

3.7 IMPLICATIONS FOR SEEPAGE INTERCEPTION DESIGN

Based on the results of the 2014 Winter Drilling Program only one pumping well (PW14-06) showed sufficient water quality impact and well yield to operate on a continuous basis for seepage interception. Although the well yield of this pumping well is relatively small (0.3 L/s or 5 USGPM), the potential for interception of contaminant load (particularly Zn load) is very high due to the highly impacted nature of the local seepage. For example, assuming a zinc concentration of 3,300 mg/L and a sustainable well yield of ~0.3 L/s this well could potentially intercept 82 kg/day (or 30 t/yr) of zinc which is equal to the total zinc load removed by the entire S-cluster SIS between October 2012 and September 2013.

Based on our current understanding of groundwater flow in the study area the highly impacted groundwater observed at PW14-06 is moving in a southwesterly direction towards the S-Cluster SIS.

However, there is a (small) hydraulic gradient from this area towards Area 1 and Area 2 hence groundwater movement from this zone towards NF2A (in high permeability channel in glacial till and/or fractured bedrock) cannot be ruled out at this time.

We recommend that pumping well PW14-06 be operated on a trial basis throughout the 2014 summer period (ideally from July to freeze-up 2014) (see also section 4.3).

No significant seepage was intercepted along the fence of wells drilled along the western toe of the Upper Intermediate Dump (Area 1). The overburden soils and shallow bedrock encountered in this area appeared to be of low to very low permeability which is consistent with the relatively low zinc concentrations observed.

Note that the absence of highly impacted seepage in the three boreholes completed does not rule out the presence of high-permeability zone(s) that can carry highly-impacted seepage towards the rock drain area. However, load balance calculations suggest that a flow of approximately 0.07 L/s of highly- impacted seepage (with water quality observed at PW14-06) would be sufficient to explain the increased zinc concentrations in NF2A and NF2. In other words, a seepage zone of very limited lateral extent (possibly perched seepage at the toe of the waste rock and/or seepage along fractured bedrock) could be responsible for the observed zinc load to NF2A.

As such it would be difficult (and costly) to identify such a discrete zone by drilling, in particular with drilling through 40m of waste rock (with casing advance) required in this area. We therefore recommend that other options for seepage interception be explored (see Section 4.3 below) before additional drilling in Area 1 is considered.

Significant groundwater flow was intercepted in the more permeable glaciofluvial sediments present in the NFRC valley (Area 2). Individual well yields at PW14-1, MW14-2S and PW14-7 are sufficient for effective operation of seepage interception wells. However, preliminary water quality results obtained to date do not indicate that the glaciofluvial sediments are significantly impacted. For example, sampling of groundwater pumped from PW14-01 (after several hours of pumping) showed a zinc concentration of about 1 mg/L. Assuming a sustainable pumping rate of say 2 L/s for this pumping well, the total zinc load recovered would represent only 0.6 t/yr or less than 2% of the estimated total zinc load entering the NFRC in the reach of the rock drain.

In our opinion, pumping wells with zinc concentrations less than at least 20-50 mg/L should not be operated in this area since they would not significantly reduce the zinc load to NFRC while reducing storage volume in the Faro Pit. We therefore recommend that other options for seepage interception be explored (see section 4.3 below).

4 RECOMMENDATIONS

4.1 COMPLETION OF FIELD WORK

We recommend that the following field work be completed:

- Hydraulic testing (by means of mini-pumping tests and/or slug testing) of those low-yielding monitoring wells which did not have adequate well diameter and/or well yield for pump testing (MW14-2D, MW14-3, and MW14-4S/D)
- Weekly monitoring of water levels in all MW14 and PW14 wells (plus CH2-MW07) until June 2015.
- Confirmatory water quality sampling of all MW14 and PW14 wells (plus CH2-MW07) and regular quarterly groundwater sampling until June 2015. Groundwater samples should be sampled using standard operating procedures (EDI protocol) and submitted to an accredited laboratory for analysis of a full suite of water quality parameters (major ion chemistry, dissolved metals)

4.2 PUMPING TRIAL

We recommend that pumping well PW14-06 be equipped with a submersible pump and hooked up to the insulated and heat-traced 2” discharge line and operated on a trial basis as soon as possible. The maximum pump capacity should be 1.0 L/s and the initial target pumping rate should be set to 0.3 L/s. For the trial period, the pump could be operated by a float switch[9].

For long-term operation of these relatively low-yielding pumping wells consideration should be given to operating the pump on a Variable Flow Drive (VFD) for longer-term operation.

Depending on the sustainable well yield in PW14-06 and the observed drawdown in nearby CH12-MW07 observed during this pumping trial consideration should be given to installing additional pumping wells in this historic drainage channel.

4.3 STUDY OF ADDITIONAL SEEPAGE MITIGATION OPTIONS

In light of the low probability of success in intercepting the seepage to NF2A via pumping wells from the toe of the Upper Intermediate Dump (Area 1) and the main haul road (Area 2) we recommend

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[9] Note that PW14-06 is equipped with a 6” steel riser pipe but is equipped with an inner well screen of only 4” nominal diameter. Hence a 3” submersible pump will be required for this well.

that alternative options for interception of impacted seepage/stream flow at the downstream toe of the rock drain (in immediate proximity of NF2A) be evaluated.

We recommend that the following options for seepage interception be evaluated (in order of priority):

1. Seepage interception at NF2A: The simplest option would be to bring in an excavator, dig a small excavation at NF2A, “install” a manhole supported by gravel backfill and trial pump this sump with a sump pump for a period of time (several hours to a day) to evaluate the influence of this pumping on water quality at NF2 (this water could be discharged back into NFRC downstream of NF2 for this initial experiment). This trial pumping would be most effective during winter base flow conditions when stream flows are very low and the area is not flooded. If successful, a more permanent sump could be installed in this area with permanent power and discharge line to the S-cluster and/or the top of the haul road.

2. Seepage interception up-gradient of the rock drain: In the author’s opinion, it is unlikely that highly impacted seepage from immediately upgradient of the rock drain is causing the observed increase in zinc load to NFRC under the rock drain. However this possibility should be tested prior to implementing more costly seepage interception measures. To this end, we recommend to drill several (shallow) monitoring wells along the toe of the Intermediate Dump immediately upstream of the haul road (along the western side of the NF1 pond). We recommend installation of shallow (say 2-3m deep) piezometers using a small portable drill rig or, alternatively, installation of shallow standpipe piezometers (using ‘drive points’) which can be pushed in manually or with the aid of an excavator. If highly impacted seepage (with Zn >20-50 mg/L) is observed in this area, then a shallow seepage interception system (comprised of a shallow drain and/or a fence of pumping wells) should be designed and installed.

3. Seepage interception beneath the rock drain: if the two options described above are not successful then more far-reaching (and costly) options for seepage interception beneath the rock drain would have to be considered, including:

   - Push a road down the side slope of the rock drain for access to drill additional holes north and south of MW14-02S/D (just west of the historic buried stream channel)

   - Cut a slot into the rock drain (or breach the rock drain entirely) to allow direct access to the currently buried section of NFRC and to allow surface inspection and identification of the specific area of seepage and install a seepage interception system (likely a shallow interceptor trench) at that location.

In our opinion, the second sub-option (surface inspection after waste rock removal) has a far greater chance of successful identification and ultimately collection of seepage. Based on the information to date, we suspect that the impacted seepage enters the western side channel of the NFRC in the reach between MW14-02S and NF2A, hence we recommend that excavation (or drilling) would proceed from the downstream toe of the rock drain (near NF2A) in a northerly direction.

Note that any permanent breach of the rock drain would have implications for closure design (flood control) and would need approval from the closure design team. In addition, geotechnical considerations would have to be evaluated by a qualified geotechnical engineer prior to any excavation.

We recommend that Options 1 and 2 be evaluated as soon as possible. Only if it can be shown that seepage interception upstream and/or downstream of the rock drain is not successful in mitigating the zinc loading to NFRC along the rock drain reach, should the more costly Option 3 be considered.

5 CLOSURE

Robertson GeoConsultants Inc. (RGC) is pleased to submit this report titled Final Report – 2014 Winter Drilling Program, NFRC Reach, Faro, YT.

This report was prepared by Robertson GeoConsultants Inc. for the use of the Yukon Government – Assessment and Abandoned Mines.

We trust that the information provided in this report meets your requirements at this time. Should you have any questions or if we can be of further assistance, please do not hesitate to contact the undersigned.

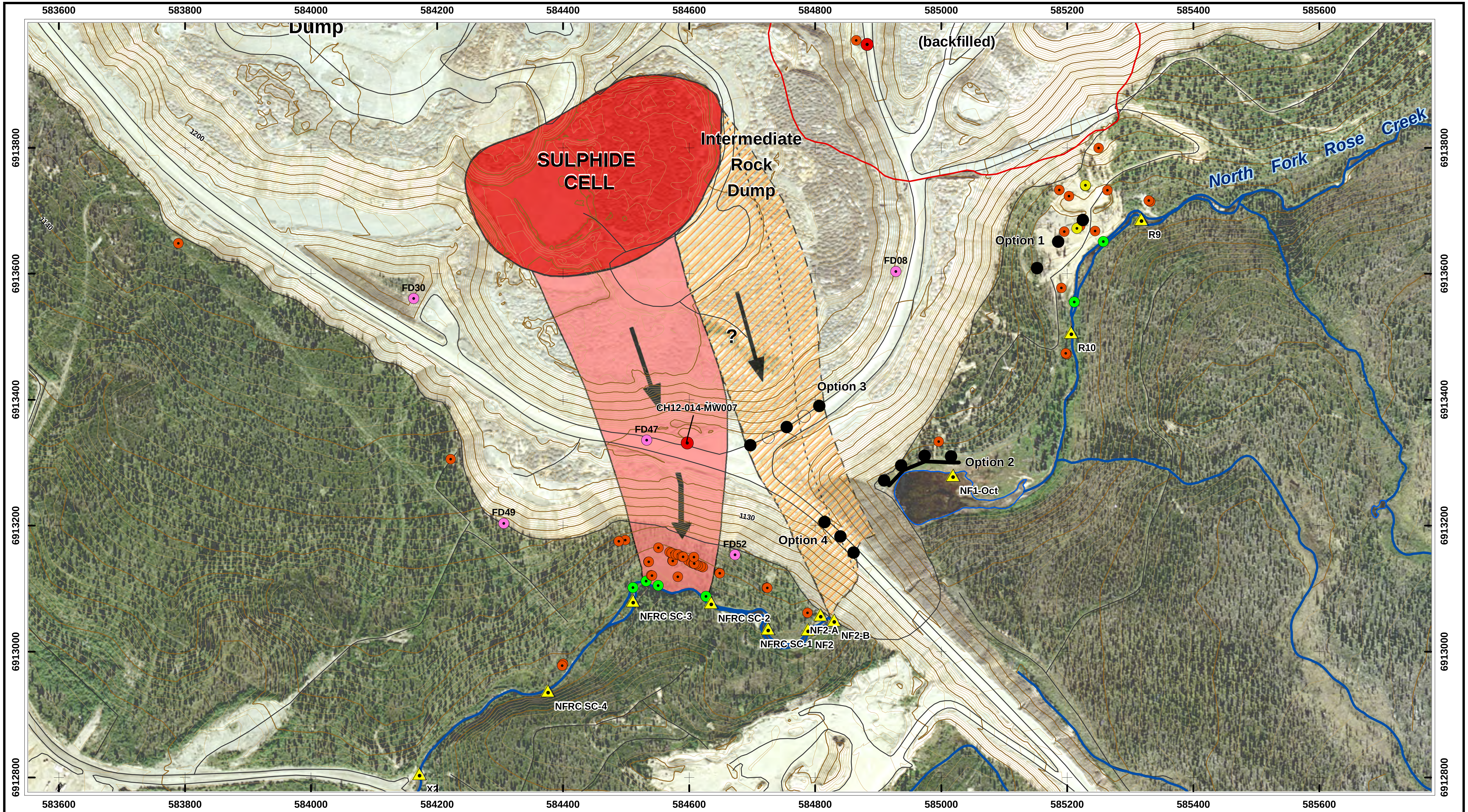
Respectfully Submitted,

ROBERTSON GEOCONSULTANTS INC.

Prepared by:	**Reviewed by:**
Tilman Roschinski, M.Sc., P.Geo.	Christoph Wels, Ph.D., M.Sc., P.Geo.
Consulting Hydrogeologist	Principal Hydrogeologist

END

FIGURES



Seepage Mitigation Options, NFRC

Anvil Range Mining Complex

Legend

○ Proposed Well

● Proposed Well

▲ Surface Water Station

— Zone II Pit Outline

● Drive Point

● Monitoring Well

● Other Well (not Monitored Routinely)

● Seep Monitoring Station

PROJECTION: UTM
ZONE: 8
DATUM: NAD 83
UNITS: Metres
CONTOUR INTERVAL: 2m

N
W E
S

SCALE: 1:5,500

0 75 150 225 300 375
Meters

NAD 83/UTM Zone 8N

Yukon Government

CLIENT: Yukon Government
PROJECT: NFRC Drilling Program
REPORT: RGC 118026
LOCATION: Anvil Range Mining Complex,YT, Canada

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FIGURE: 1 - 1

DATE: Dec.18, 2013
DRAWN BY: LR
FILE: Faro_Site_11_1APR2014.mxd

Well ID	Easting	Northing	Screening Interval from (m bgs)	Screening Interval to (m bgs)
PW14-01	584752	6913152	61.0	76.0
MW14-02S	584760	6913129	59.5	65.5
MW14-02D	584760	6913129	72.0	78.0
MW14-03	584615	6913289	44.7	56.3
MW14-04S	584655	6913319	47.2	61.7
MW14-04D	584655	6913319	64.8	74.0
MW14-05	584695	6913348	48.0	65.3
PW14-06	584480	6913308	44.6	63.2
PW14-07	584693	6913191	56.1	65.1
	584693	6913191	71.1	77.1

LEGEND

⊕	2014 Monitoring Well
⊗	2014 Pumping Well
●	Existing Monitoring Well
—	Zone II Pit Outline
—	Dump Outline

'As-Built' 2014 Winter Drilling Program

Intermediate Dump, NFRC

SCALE 1: 2,000

NAD 83 CSRS UTM Zone 8N

Yukon Government

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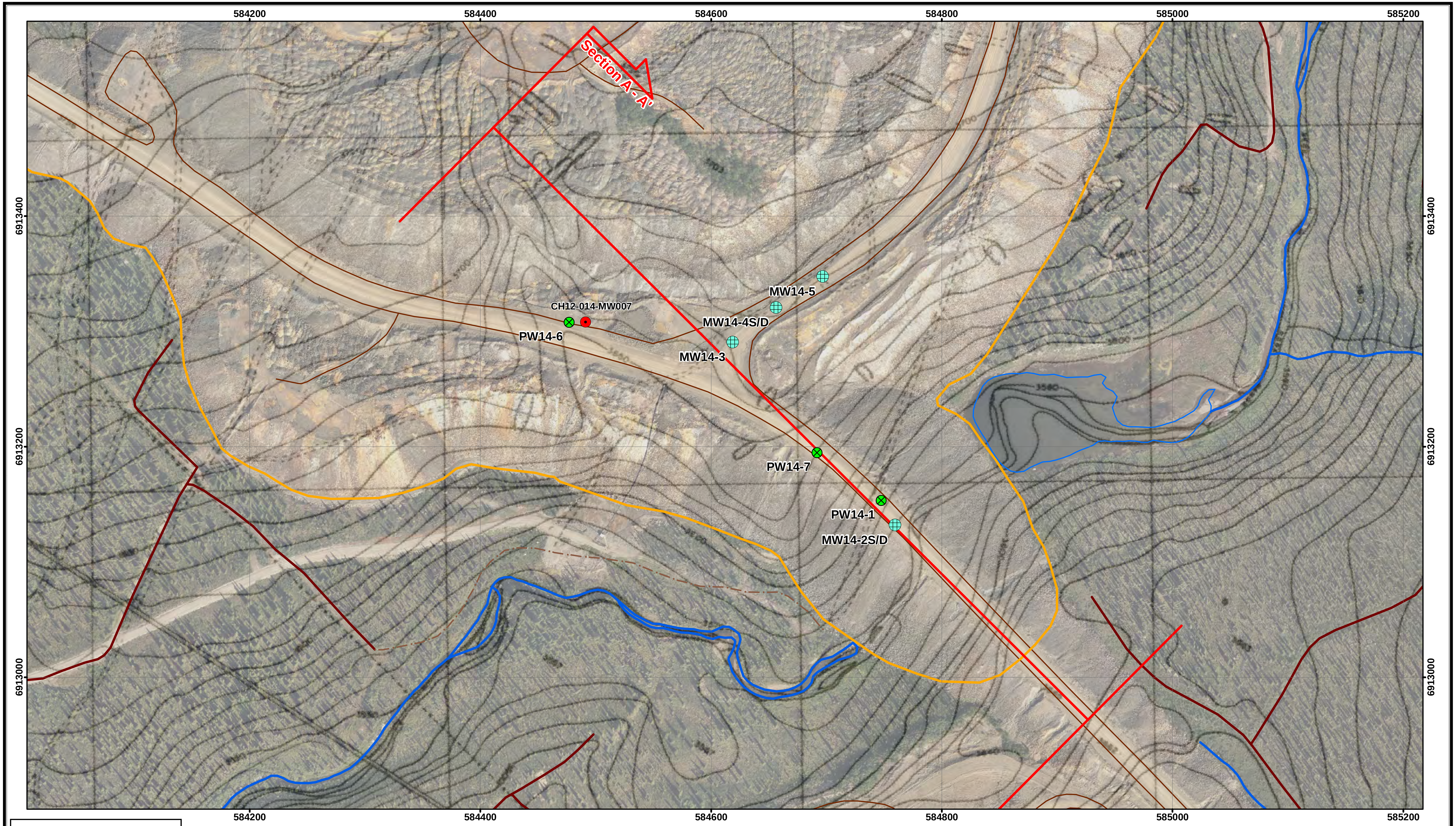
Figure: 2 - 1

CLIENT: Yukon Government
PROJECT: NFRC Drilling Program
REPORT: RGC 118026
LOCATION: Anvil Range Mining Complex,YT, Canada

DATE: Oct 7, 2014
DRAWN BY: LR
FILE: Faro_CompletedWells_1apr2014-2K.mxd



Legend

- 🟢 Drilled Monitoring Well
- ⊗ Pumping Well
- ● Monitoring Well
- — Section Line A - A'

Premining Contour Map

Intermediate Dump, NFRC

SCALE 1: 3,000

NAD 83 CSRS UTM Zone 8N

Yukon Government

CLIENT: Yukon Government
PROJECT: NFRC Drilling Program
REPORT: RGC 118026
LOCATION: Anvil Range Mining Complex,YT, Canada

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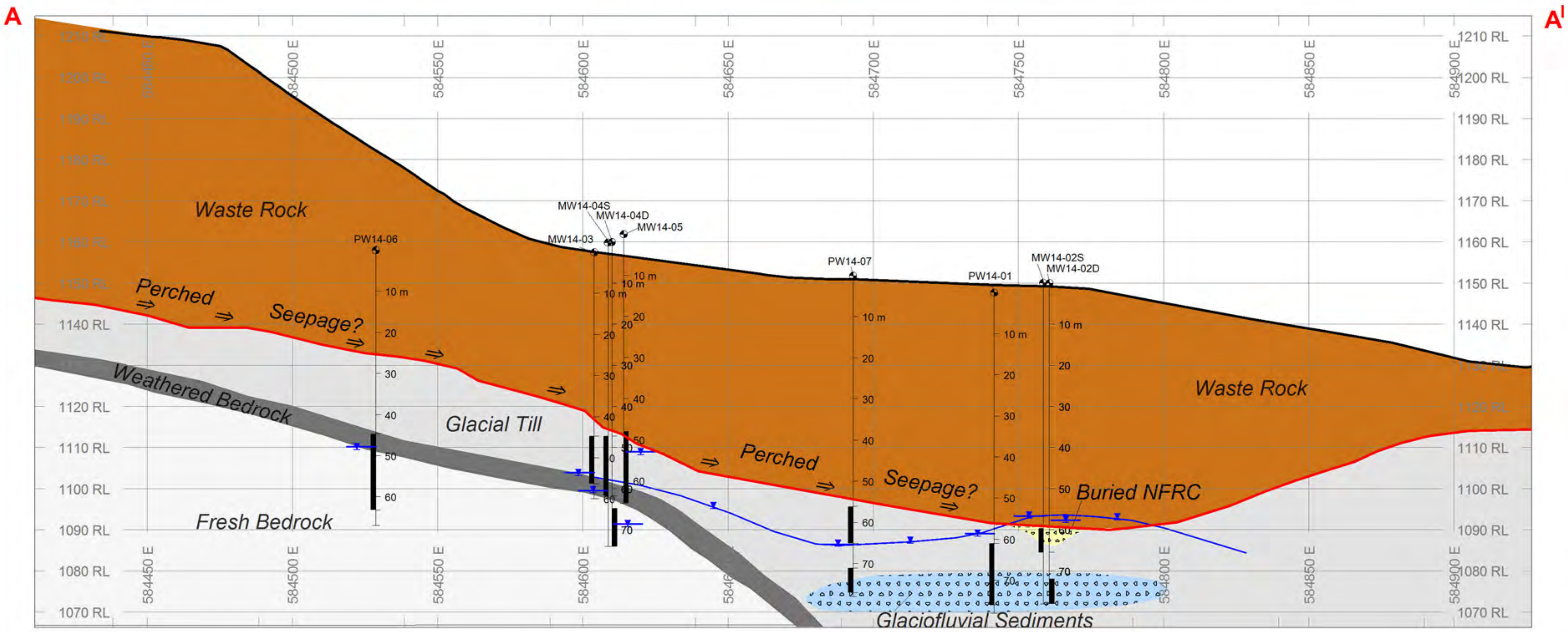
FIGURE: 3 - 1

DATE:March 3, 2014
DRAWN BY: LR
FILE: Faro_ProposedWells_PremineTopo_1apr2014-3K.mxd



TOPOGRAPHY

- Current Topography
- Premine Topography

ROCK CODES	PAT	LABEL	DESCRIPTION
Unit	🟧	WR	Waste Rock
	▢	GT	Glacial Till
	▨	GFS	Glaciofluvial Sediments
	▢	fBR	Fresh Bedrock
	■	wBR	Weathered Bedrock
	▨	NFRC	Alluvium

- Water Table Elevation (m)
- Screen Interval (m)

SECTION SPECS:

REF. PT. E, N	584669 m	6913220 m
EXTENTS	727.7 m	148.6 m
SECTION TOP, BOT	1215 m	1066 m
TOLERANCE +/-	115 m	
VERTICAL EXAG.	2	

SCALE 1 : 2400

(m)

-20 0 20 40 60

NAD83 / UTM zone 8N

AZIMUTH = 134.9°

N W E S

Figure: 3 - 2

Client: Yukon Government

Robertson GeoConsultants Inc.

Project: NFRC Drilling Program

Project No: 118026

Report: 118026

Last Update: Mar 31, 2014

Anvil Range Mining Complex, YT, Canada

Drawn: K.H.

Original File: faromine.gpf

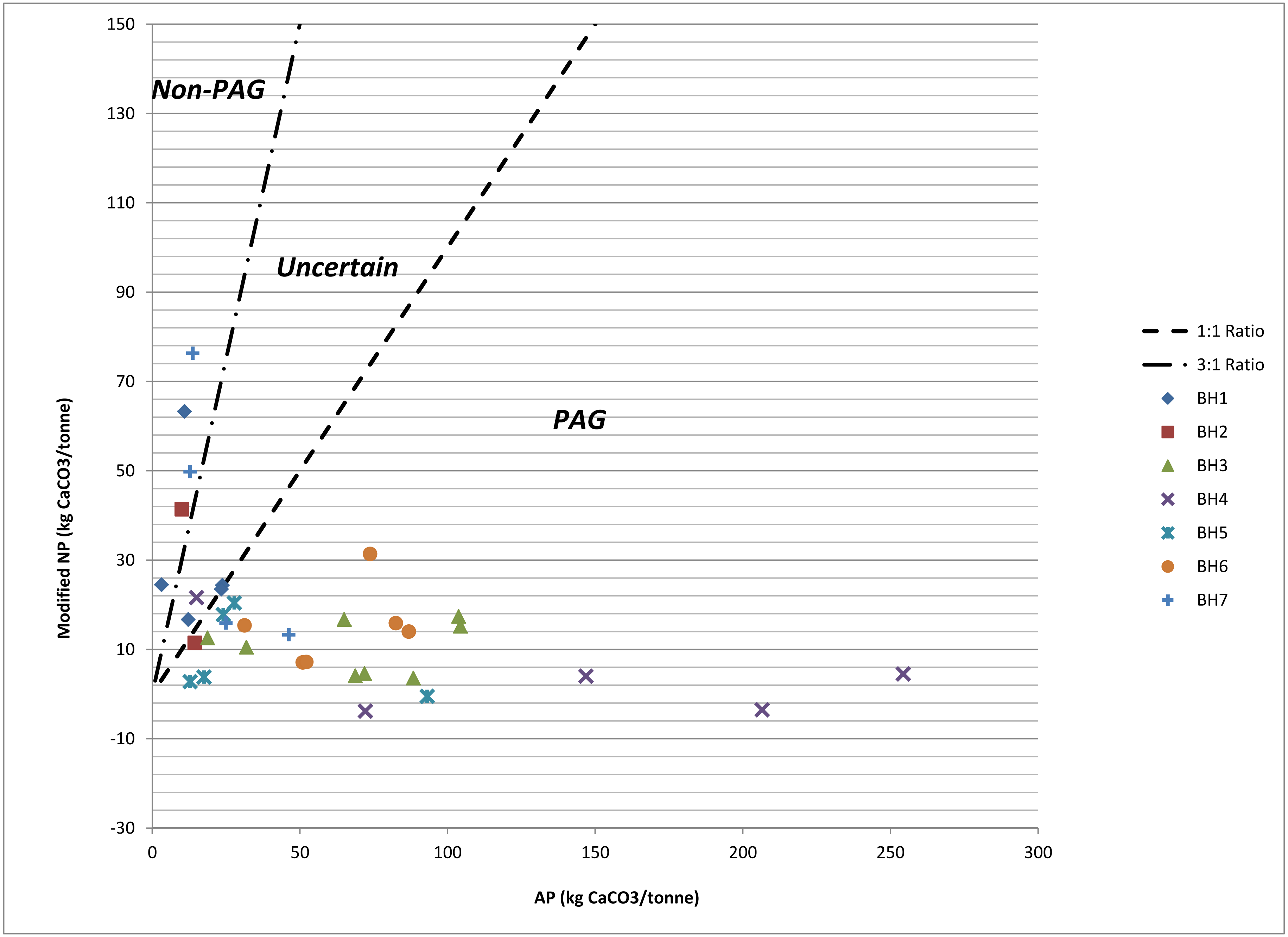


Figure 3-3. AP versus NP for 2014 Waste Rock Samples.

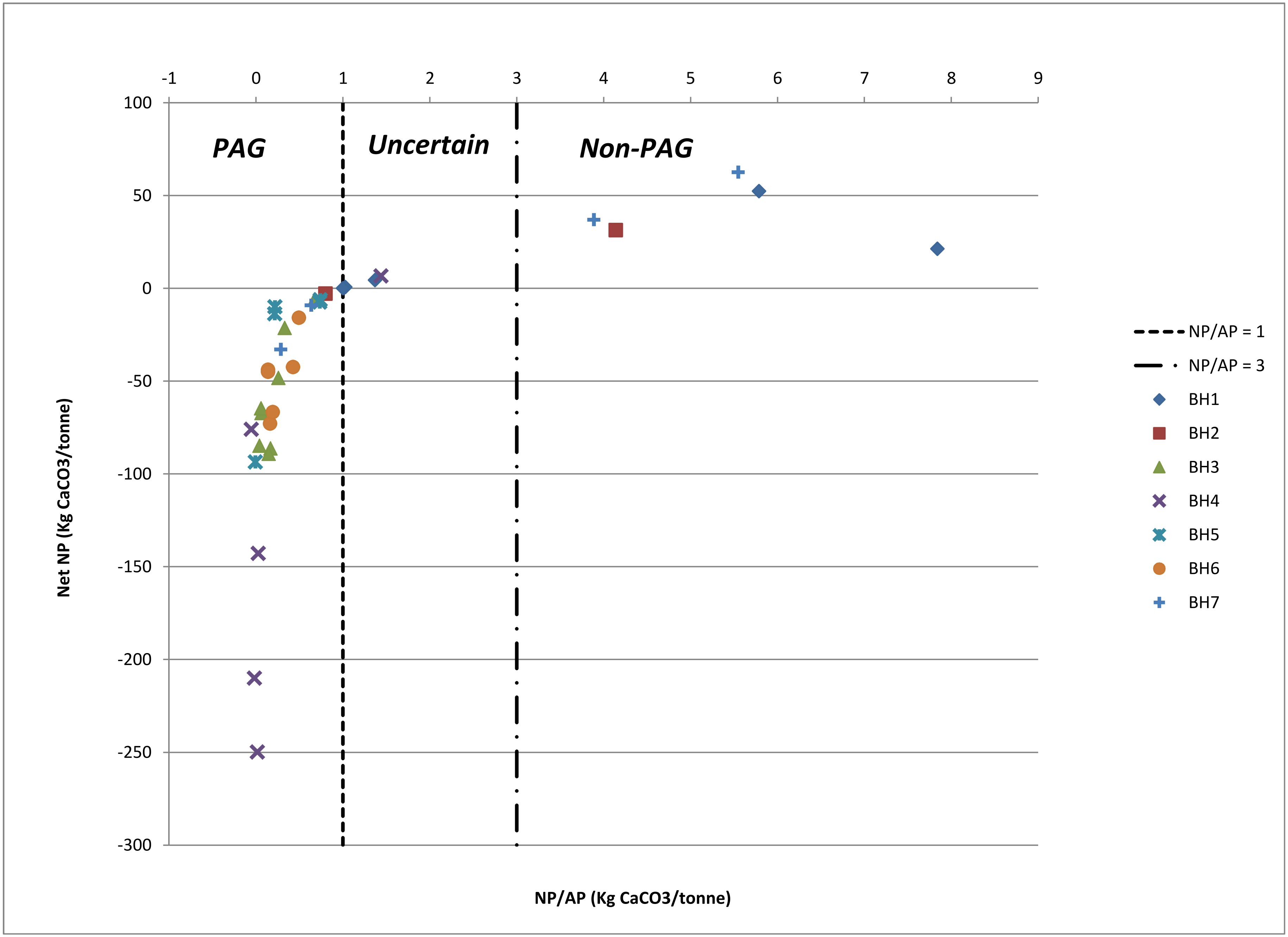


Figure 3-4. NP/AP versus NNP for 2014 Waste Rock Samples.

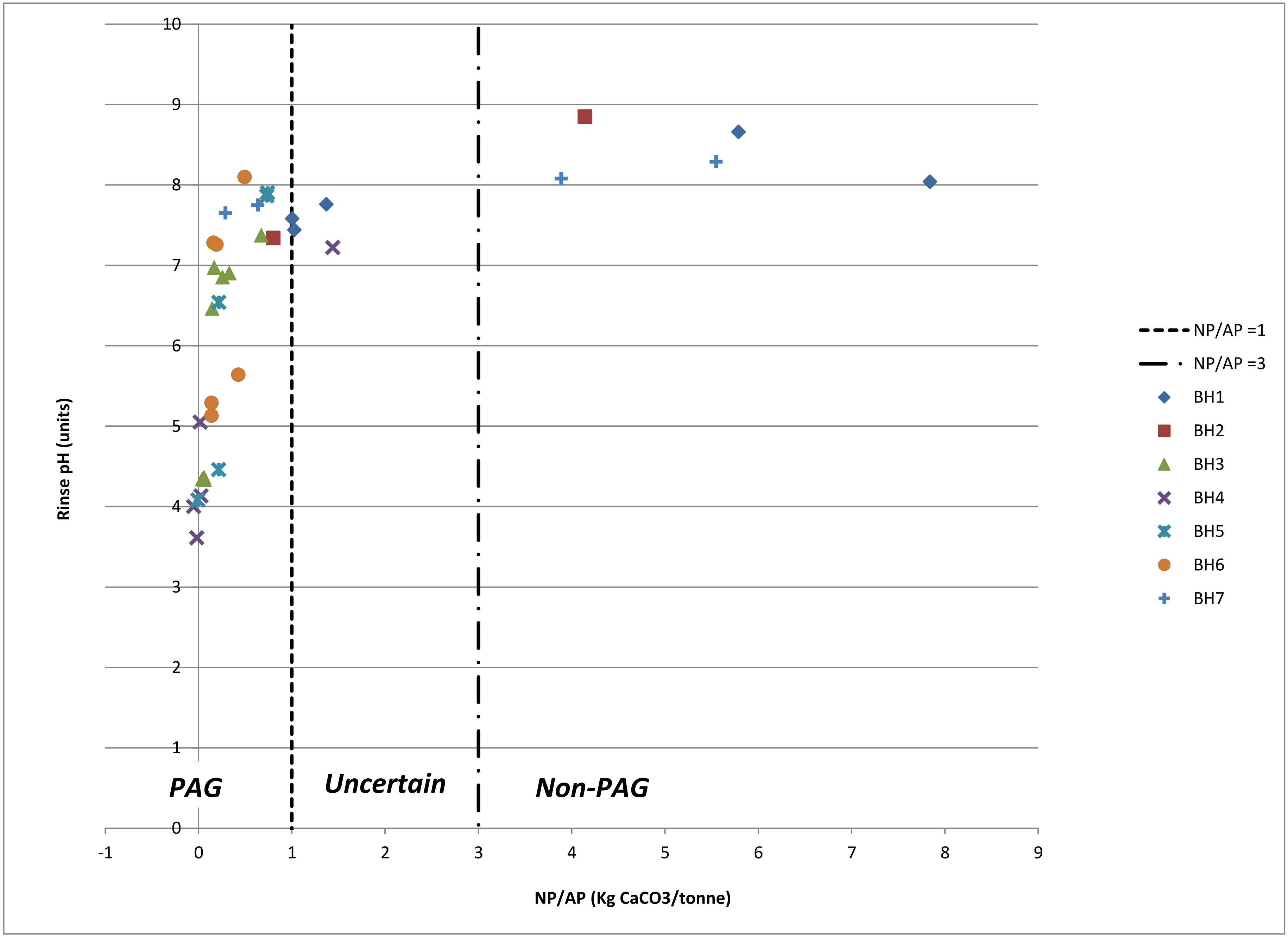


Figure 3-5. NP/AP versus Rinse pH for 2014 Waste Rock Samples.

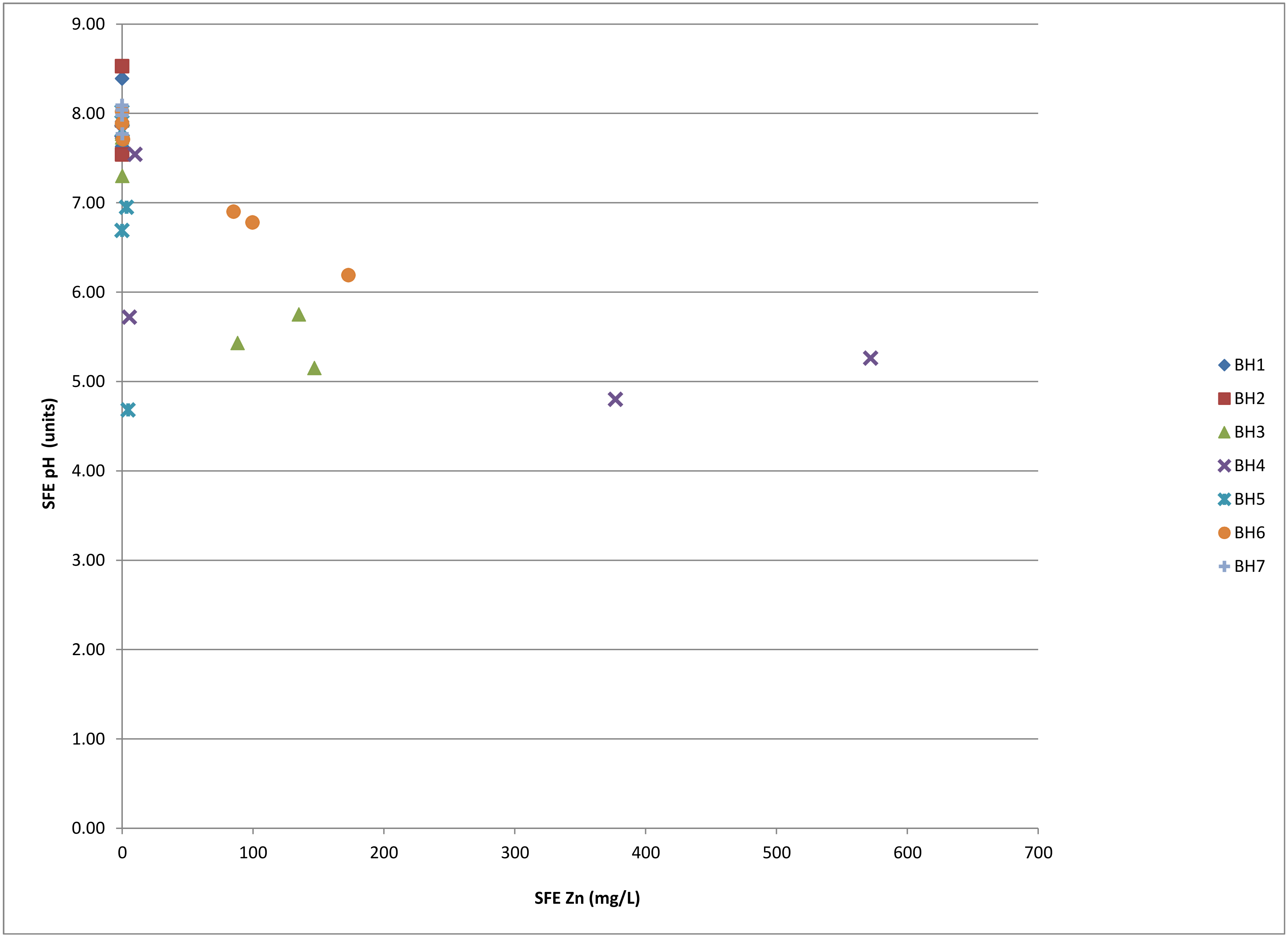
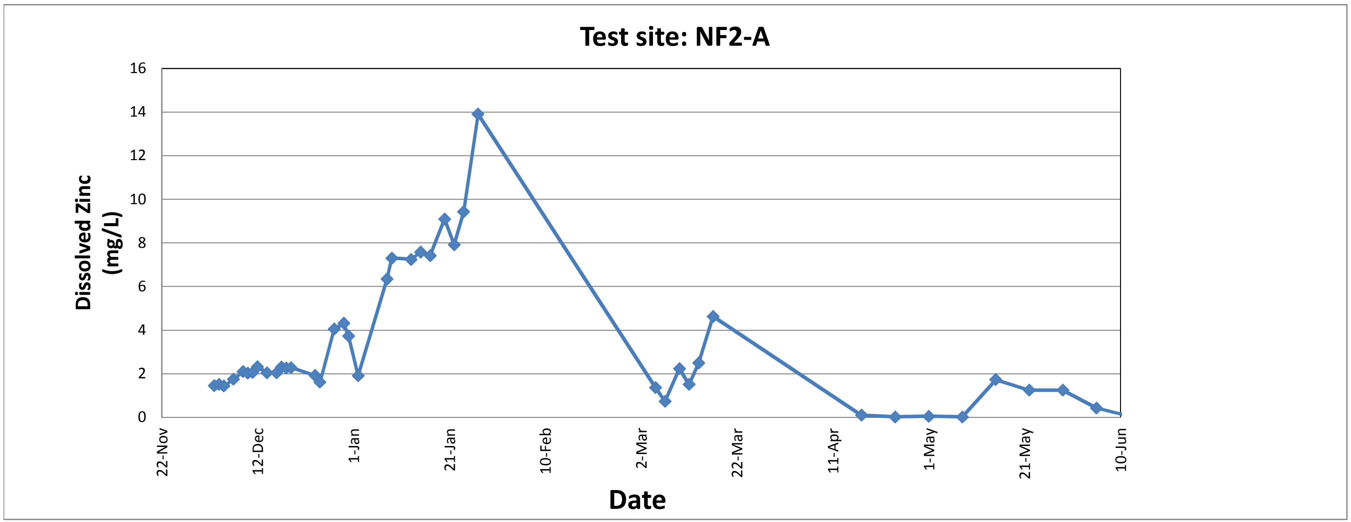
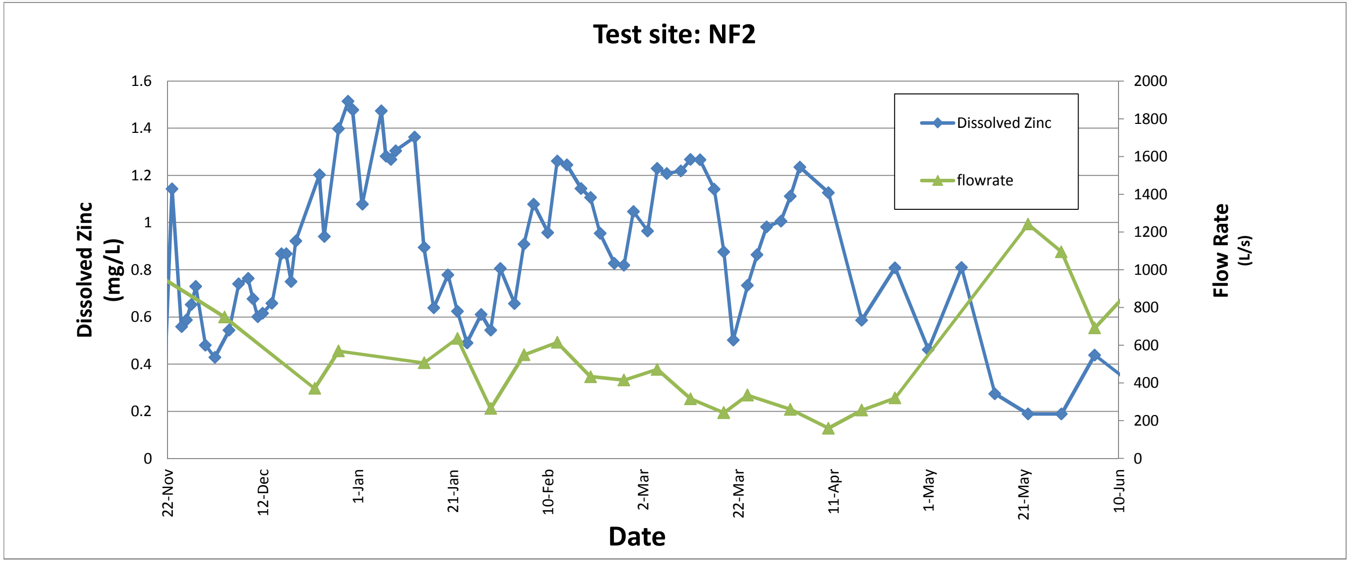


Figure 3-6. SFE Zinc for 2014 Waste Rock Samples.





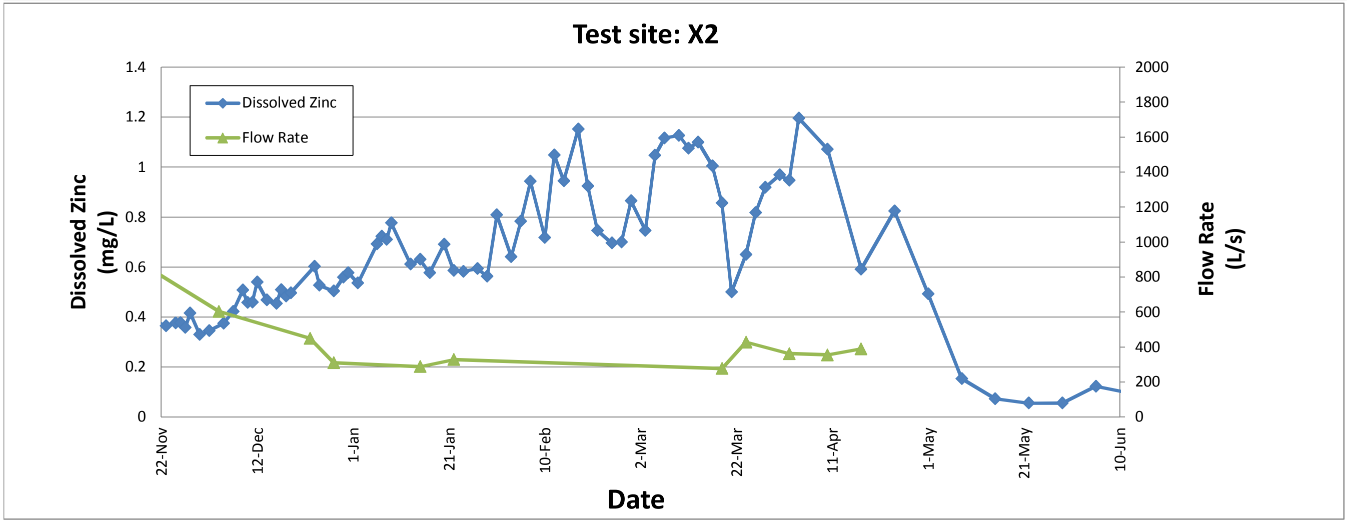


Figure 3-7. Time trends of zinc in selected surface water monitoring stations along NFRC reach (winter/spring 2014).

APPENDIX A

Photo Log Of Drilling and Well Installation

Photo A1: Setup of the Symmetrix drilling system. An 8" Symmetrix drill bit locks into a 11.5" casing shoe on 10" casing.

Photo A2: Site operations during drilling. Drill on the left with support truck on the right. The hose diverts the compressed air and drill cuttings into the cyclone to the left of the drill. Additional length of drill string can be seen on the ground between the trucks.

Photo A3: An additional length of casing has been lifted up to align with the drill casing in the ground. A welder is preparing the joint in preparation for welding the sections together.

Photo A4: The drillers are preparing a stainless steel well screen that is to be inserted into the finished borehole to complete the pumping well installation at PW14-01.

Photo A5: The installation of the 6-inch diameter PVC well screen MW14-03. The drillers are adjusting the width of the centralizer that keeps the well centered inside the borehole.

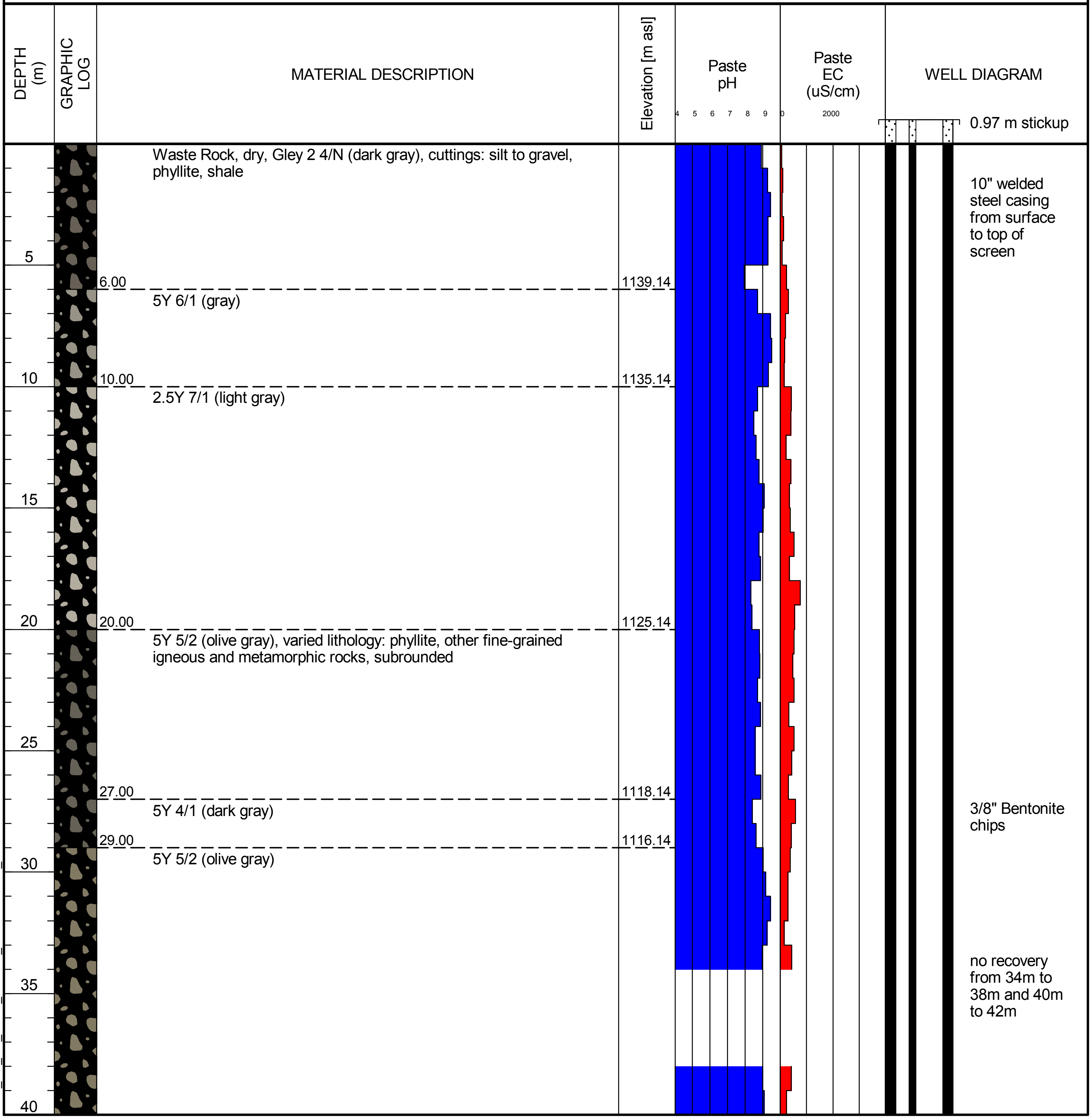
Photo A6: A finished well installation. Approximately 1 m of the drill casing has been left to stick up out of the ground to protect the well inside. The well is marked with the well name and spray-painted bright orange for visibility. A lockable lid protects the well from weather and tampering.

APPENDIX B

Borehole Logs

WELL NUMBER MW14-02

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon
DATE STARTED 2/28/14 **COMPLETED** 3/2/14
GROUND ELEVATION 1145.135 m **HOLE SIZE** 11.5 in
DRILLING CONTRACTOR Midnight Sun Drilling Inc.
NORTHING 584760 **EASTING** 6913129
DRILLING METHOD Symmetrix
GROUND WATER LEVELS:
LOGGED BY Tilman Roschinski **CHECKED BY** Christoph Wels
AT TIME OF DRILLING ---
NOTES Driller: Carl MacKenzie; Elevation Surveyed Oct 2014
▼ **AT END OF DRILLING** 56.55 m / Elev 1088.59 m
AFTER DRILLING ---

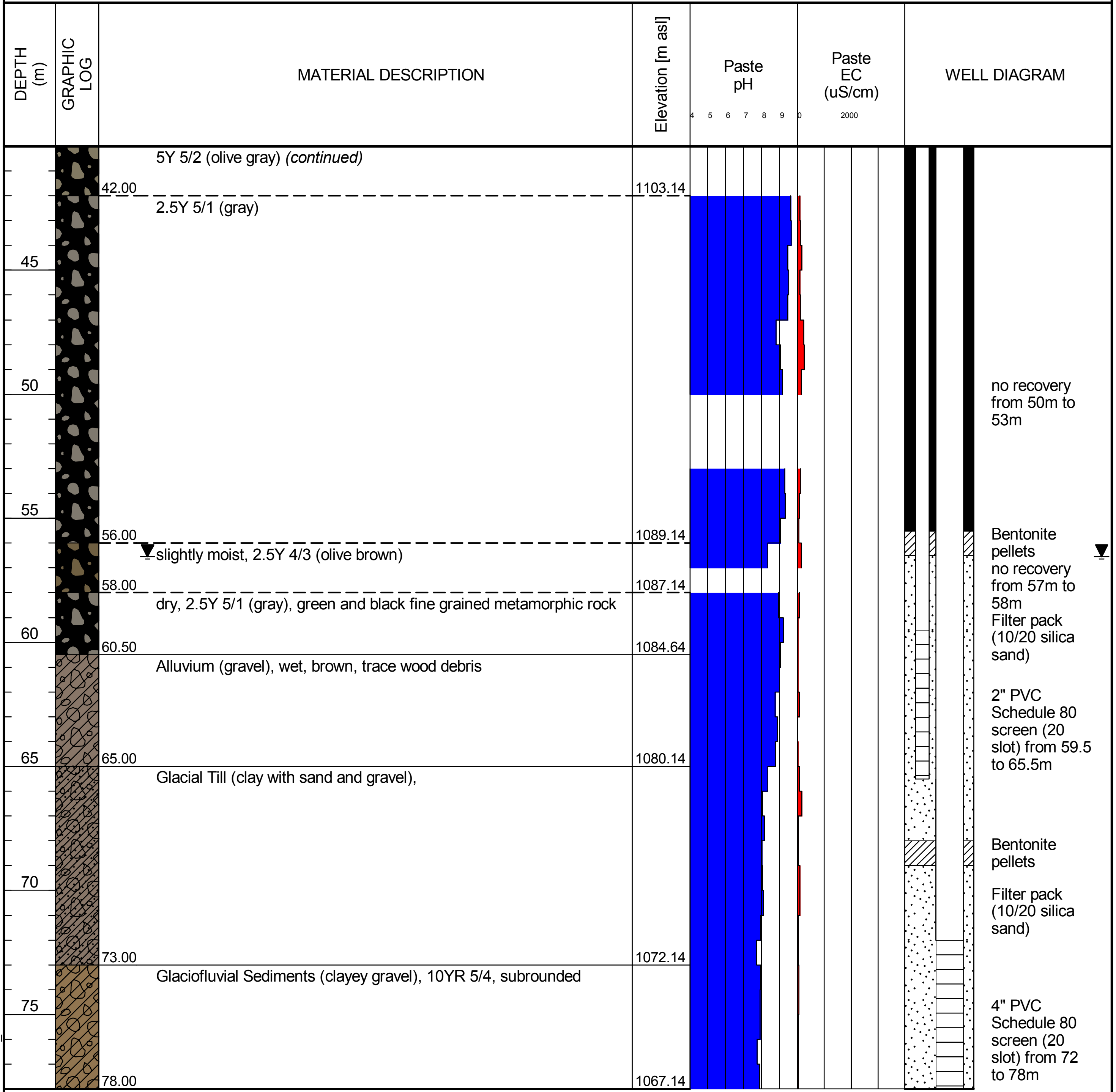


DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
	Waste Rock, dry, Gley 2 4/N (dark gray), cuttings: silt to gravel, phyllite, shale	
6.00	5Y 6/1 (gray)	1139.14
10.00	2.5Y 7/1 (light gray)	1135.14
20.00	5Y 5/2 (olive gray), varied lithology: phyllite, other fine-grained igneous and metamorphic rocks, subrounded	1125.14
27.00	5Y 4/1 (dark gray)	1118.14
29.00	5Y 5/2 (olive gray)	1116.14

(Continued Next Page)

WELL NUMBER MW14-02

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon



DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
	5Y 5/2 (olive gray) *(continued)*	
42.00	2.5Y 5/1 (gray)	1103.14
56.00	slightly moist, 2.5Y 4/3 (olive brown)	1089.14
58.00	dry, 2.5Y 5/1 (gray), green and black fine grained metamorphic rock	1087.14
60.50	Alluvium (gravel), wet, brown, trace wood debris	1084.64
65.00	Glacial Till (clay with sand and gravel),	1080.14
73.00	Glaciofluvial Sediments (clayey gravel), 10YR 5/4, subrounded	1072.14
78.00		1067.14

Bottom of hole at 78.00 m.

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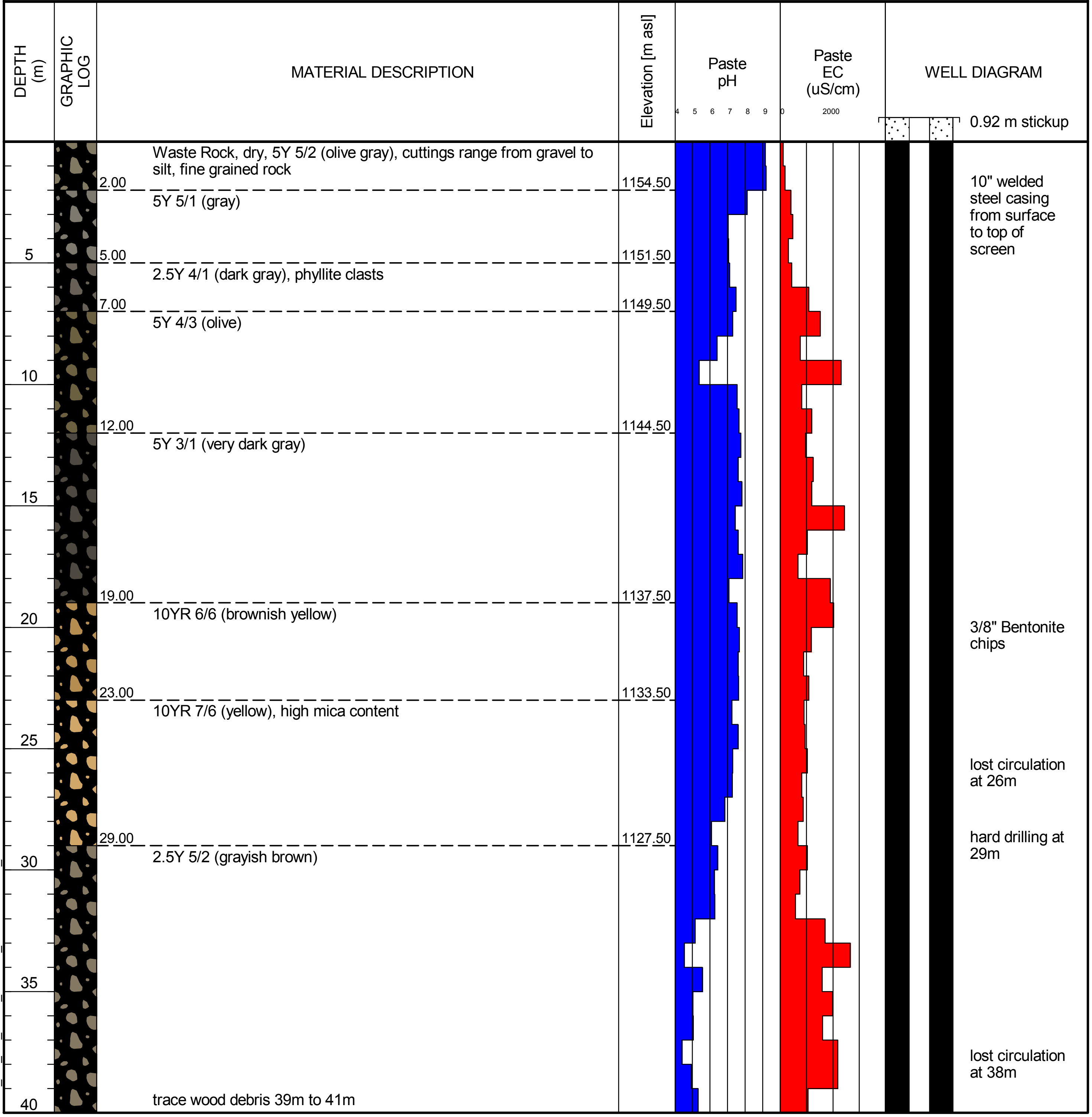
WELL NUMBER MW14-03

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon
DATE STARTED 2/14/14 **COMPLETED** 2/15/14
GROUND ELEVATION 1156.504 m **HOLE SIZE** 11.5 in
DRILLING CONTRACTOR Midnight Sun Drilling Inc.
NORTHING 584615 **EASTING** 6913290
DRILLING METHOD Symmetrix
GROUND WATER LEVELS:
LOGGED BY Tilman Roschinski **CHECKED BY** Christoph Wels
AT TIME OF DRILLING ---
NOTES Driller: Carl MacKenzie; Elevation Surveyed Oct 2014
AT END OF DRILLING ---
▽ **AFTER DRILLING** 53.61 m / Elev 1102.89 m



DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
	Waste Rock, dry, 5Y 5/2 (olive gray), cuttings range from gravel to silt, fine grained rock	
2.00	5Y 5/1 (gray)	1154.50
5.00	2.5Y 4/1 (dark gray), phyllite clasts	1151.50
7.00	5Y 4/3 (olive)	1149.50
12.00	5Y 3/1 (very dark gray)	1144.50
19.00	10YR 6/6 (brownish yellow)	1137.50
23.00	10YR 7/6 (yellow), high mica content	1133.50
29.00	2.5Y 5/2 (grayish brown)	1127.50
	trace wood debris 39m to 41m	

0.92 m stickup

10" welded steel casing from surface to top of screen

3/8" Bentonite chips

lost circulation at 26m

hard drilling at 29m

lost circulation at 38m

(Continued Next Page)

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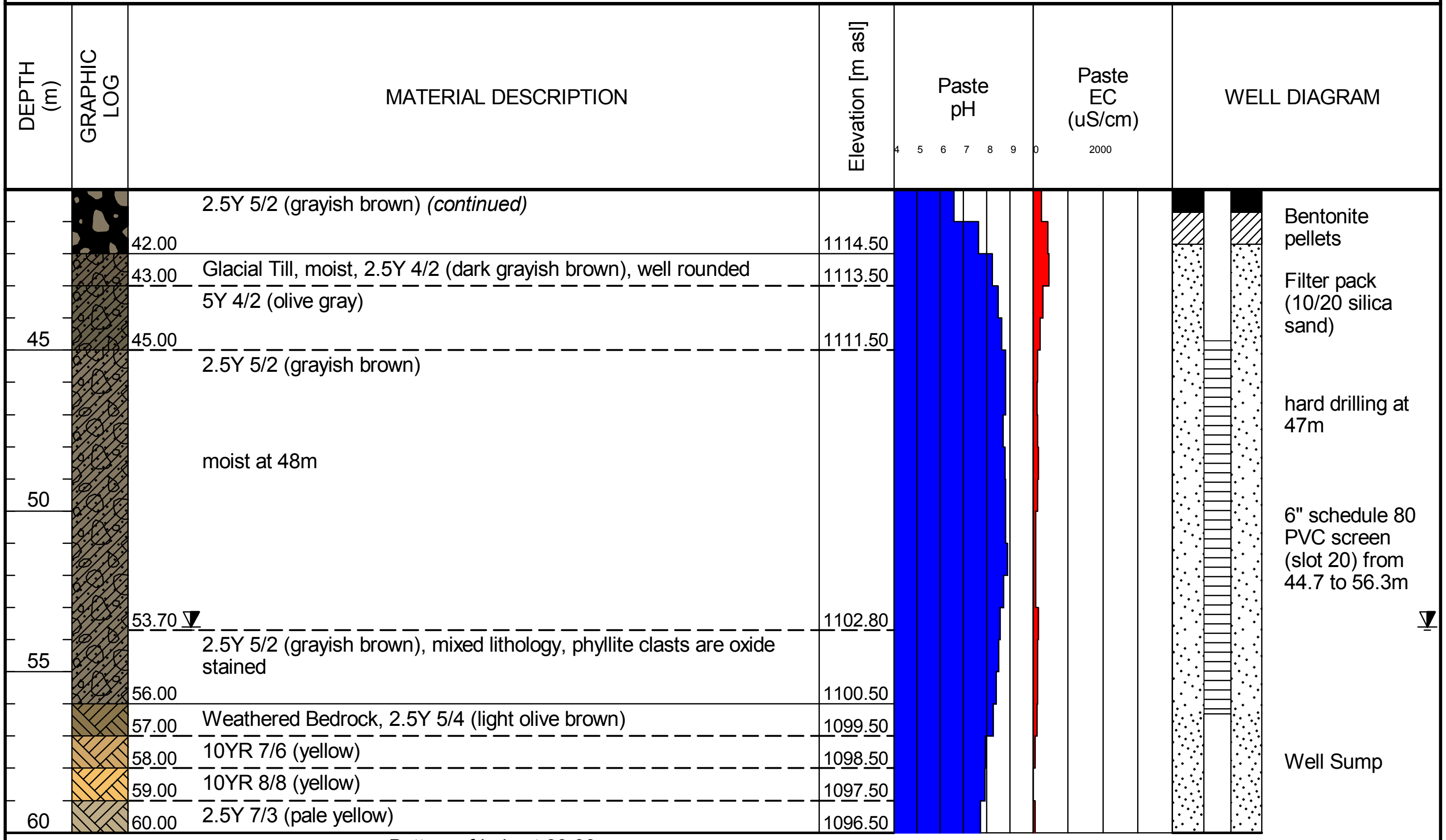
WELL NUMBER MW14-03

PAGE 2 OF 2

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon



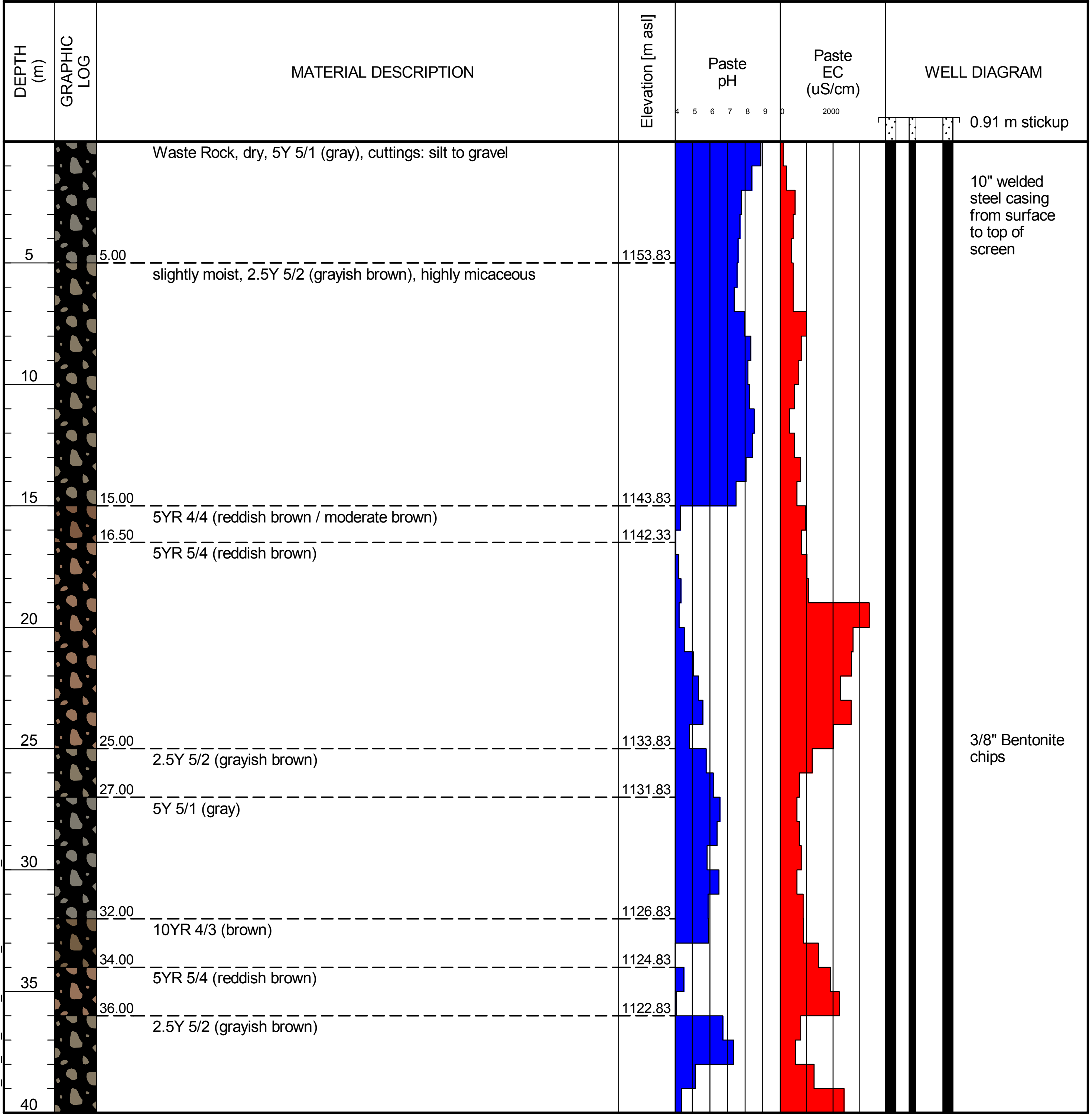
42.00	2.5Y 5/2 (grayish brown) *(continued)*	1114.50
43.00	Glacial Till, moist, 2.5Y 4/2 (dark grayish brown), well rounded	1113.50
45.00	5Y 4/2 (olive gray)	1111.50
53.70 ▼	2.5Y 5/2 (grayish brown) moist at 48m	1102.80
56.00	2.5Y 5/2 (grayish brown), mixed lithology, phyllite clasts are oxide stained	1100.50
57.00	Weathered Bedrock, 2.5Y 5/4 (light olive brown)	1099.50
58.00	10YR 7/6 (yellow)	1098.50
59.00	10YR 8/8 (yellow)	1097.50
60.00	2.5Y 7/3 (pale yellow)	1096.50

Bottom of hole at 60.00 m.

WELL NUMBER MW14-04

PAGE 1 OF 2

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon
DATE STARTED 2/16/14 **COMPLETED** 2/27/14
GROUND ELEVATION 1158.832 m **HOLE SIZE** 11.5 in
DRILLING CONTRACTOR Midnight Sun Drilling Inc.
NORTHING 584655 **EASTING** 6913319
DRILLING METHOD Symmetrix
GROUND WATER LEVELS:
LOGGED BY Tilman Roschinski **CHECKED BY** Christoph Wels
AT TIME OF DRILLING ---
NOTES Driller: Carl MacKenzie; Elevation Surveyed Oct 2014
▼ **AT END OF DRILLING** 60.32 m / Elev 1098.51 m
▽ **AFTER DRILLING** 68.57 m / Elev 1090.26 m



DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
	Waste Rock, dry, 5Y 5/1 (gray), cuttings: silt to gravel	
5.00	slightly moist, 2.5Y 5/2 (grayish brown), highly micaceous	1153.83
15.00	5YR 4/4 (reddish brown / moderate brown)	1143.83
16.50	5YR 5/4 (reddish brown)	1142.33
25.00	2.5Y 5/2 (grayish brown)	1133.83
27.00	5Y 5/1 (gray)	1131.83
32.00	10YR 4/3 (brown)	1126.83
34.00	5YR 5/4 (reddish brown)	1124.83
36.00	2.5Y 5/2 (grayish brown)	1122.83

(Continued Next Page)

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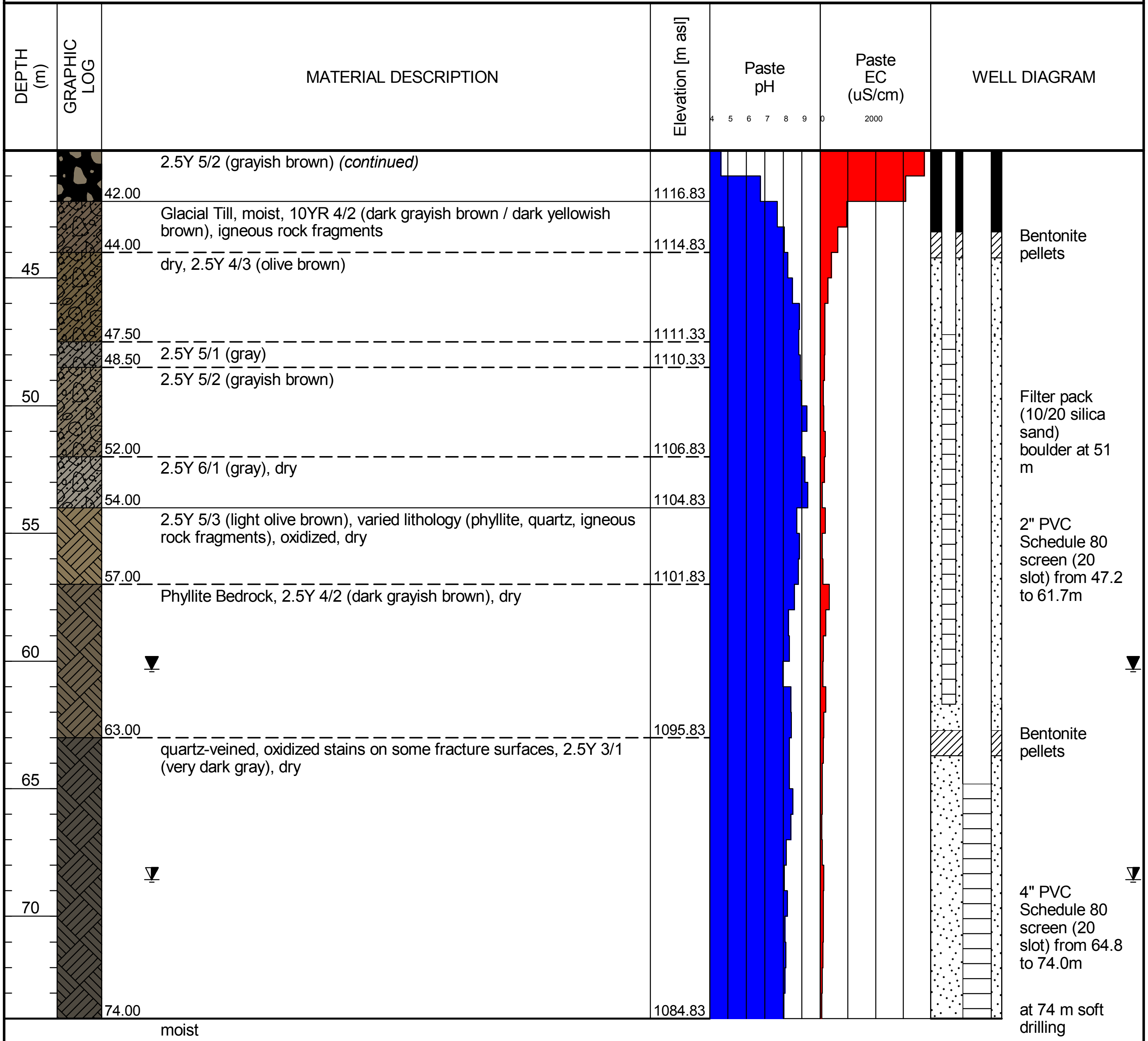
WELL NUMBER MW14-04

CLIENT Government of Yukon - AAM

PROJECT NAME NFRC 2014 Winter Drilling Program

PROJECT NUMBER 118026

PROJECT LOCATION Faro Mine, Yukon



DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
	2.5Y 5/2 (grayish brown) *(continued)*	
42.00	Glacial Till, moist, 10YR 4/2 (dark grayish brown / dark yellowish brown), igneous rock fragments	1116.83
44.00	dry, 2.5Y 4/3 (olive brown)	1114.83
47.50	2.5Y 5/1 (gray)	1111.33
48.50	2.5Y 5/2 (grayish brown)	1110.33
52.00	2.5Y 6/1 (gray), dry	1106.83
54.00	2.5Y 5/3 (light olive brown), varied lithology (phyllite, quartz, igneous rock fragments), oxidized, dry	1104.83
57.00	Phyllite Bedrock, 2.5Y 4/2 (dark grayish brown), dry	1101.83
63.00	quartz-veined, oxidized stains on some fracture surfaces, 2.5Y 3/1 (very dark gray), dry	1095.83
74.00	moist	1084.83

Bottom of hole at 74.00 m.

Bentonite pellets

Filter pack (10/20 silica sand) boulder at 51 m

2" PVC Schedule 80 screen (20 slot) from 47.2 to 61.7m

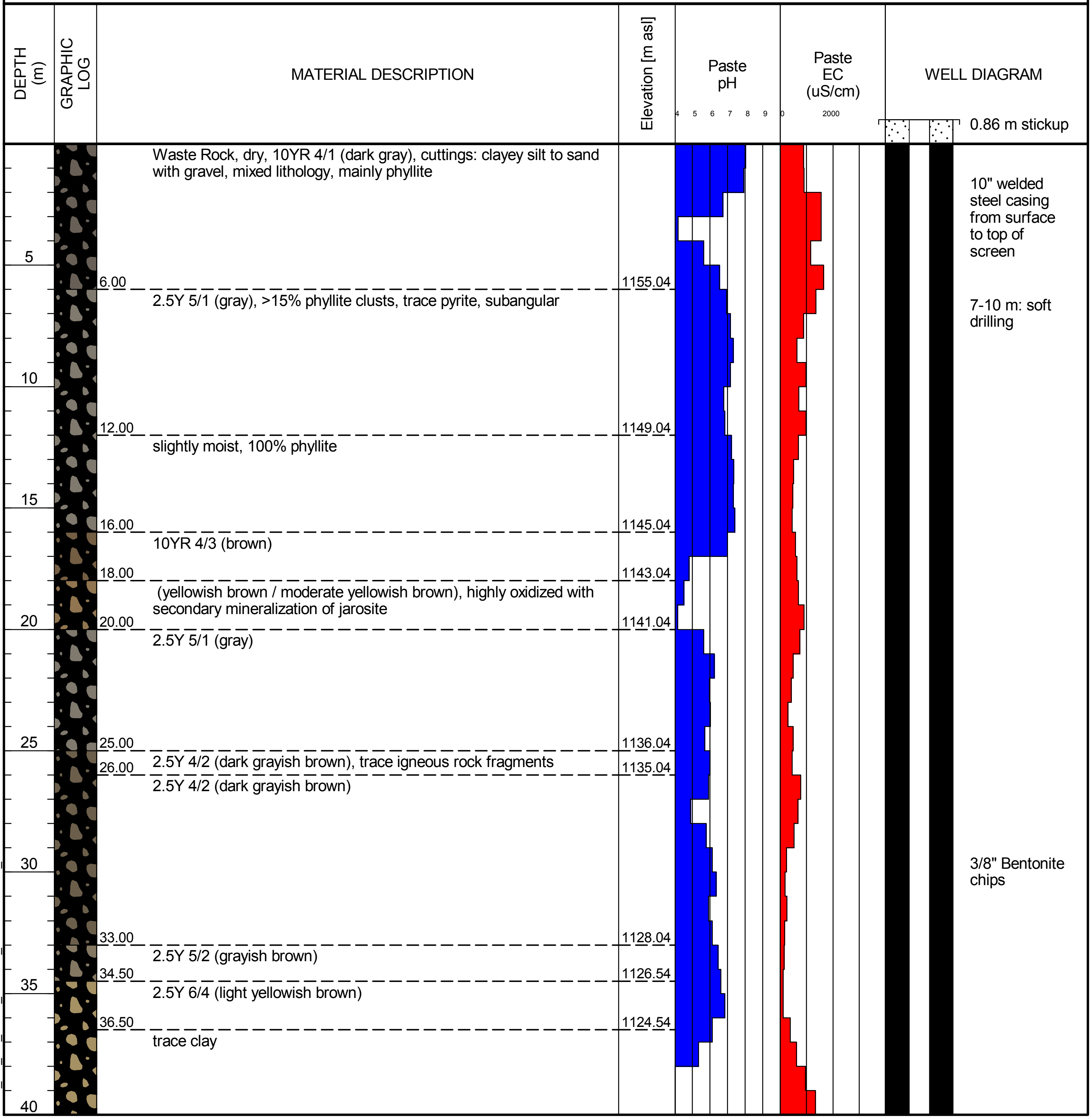
Bentonite pellets

4" PVC Schedule 80 screen (20 slot) from 64.8 to 74.0m

at 74 m soft drilling

WELL NUMBER MW14-05

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon
DATE STARTED 2/19/14 **COMPLETED** 2/21/14
GROUND ELEVATION 1161.038 m **HOLE SIZE** 11.5 in
DRILLING CONTRACTOR Midnight Sun Drilling Inc.
NORTHING 584695 **EASTING** 6913348
DRILLING METHOD Symmetrix
GROUND WATER LEVELS:
LOGGED BY Tilman Roschinski **CHECKED BY** Christoph Wels
AT TIME OF DRILLING ---
NOTES Driller: Carl MacKenzie; Elevation Surveyed Oct 2014
AT END OF DRILLING ---
▼ **AFTER DRILLING** 52.77 m / Elev 1108.27 m



DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
0	Waste Rock, dry, 10YR 4/1 (dark gray), cuttings: clayey silt to sand with gravel, mixed lithology, mainly phyllite	
6.00	2.5Y 5/1 (gray), >15% phyllite clusts, trace pyrite, subangular	1155.04
12.00	slightly moist, 100% phyllite	1149.04
16.00	10YR 4/3 (brown)	1145.04
18.00	(yellowish brown / moderate yellowish brown), highly oxidized with secondary mineralization of jarosite	1143.04
20.00	2.5Y 5/1 (gray)	1141.04
25.00	2.5Y 4/2 (dark grayish brown), trace igneous rock fragments	1136.04
26.00	2.5Y 4/2 (dark grayish brown)	1135.04
33.00	2.5Y 5/2 (grayish brown)	1128.04
34.50	2.5Y 6/4 (light yellowish brown)	1126.54
36.50	trace clay	1124.54

(Continued Next Page)

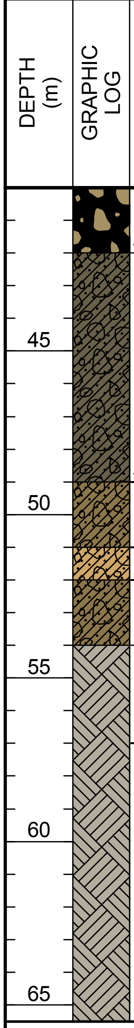
WELL NUMBER MW14-05

CLIENT Government of Yukon - AAM

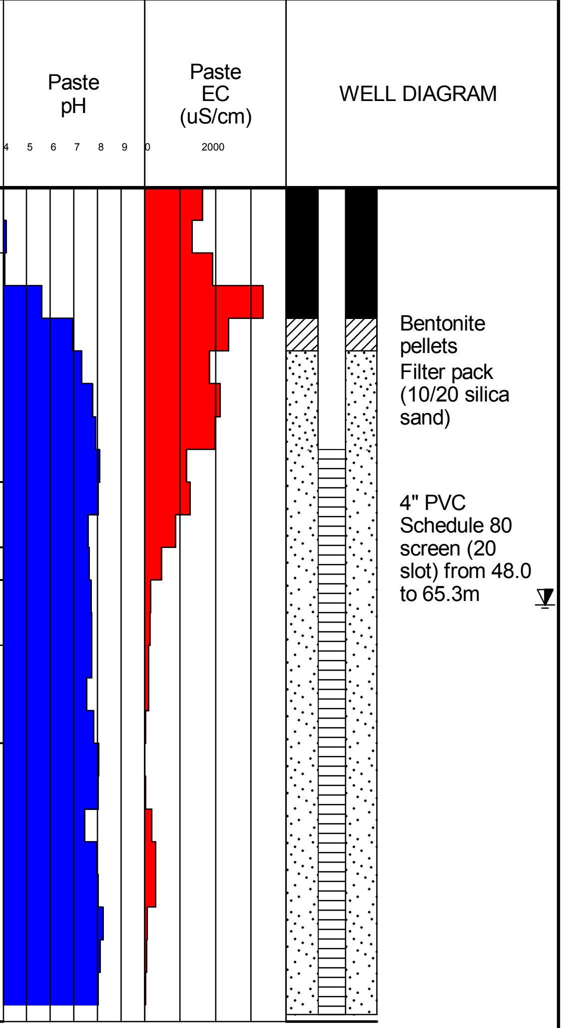
PROJECT NAME NFRC 2014 Winter Drilling Program

PROJECT NUMBER 118026

PROJECT LOCATION Faro Mine, Yukon



	MATERIAL DESCRIPTION	Elevation [m asl]
	trace clay *(continued)*	
42.00	Glacial Till, moist, 5Y 4/2 (olive gray), trace wood fragments, weathered phyllite (oxidation stains)	1119.04
49.00	2.5Y 5/4 (light olive brown)	1112.04
51.00	10YR 7/6 (yellow), trace clay	1110.04
52.00	▼ 2.5Y 5/4 (light olive brown)	1109.04
54.00	Weathered Bedrock, dry, 2.5Y 7/1 (light gray), phyllite, quartz, weathering decreasing with depth	1107.04
57.00	Phyllite Bedrock, dry, 2.5Y 7/1 (light gray)	1104.04
65.50		1095.54



Bottom of hole at 65.50 m.

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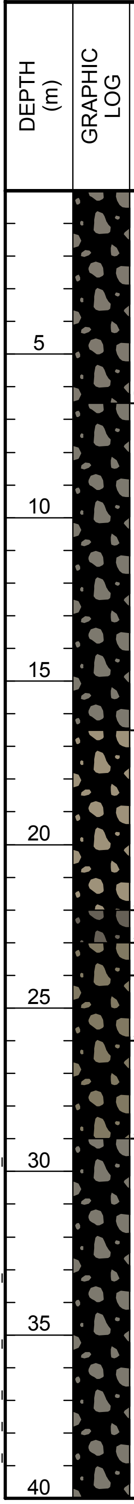
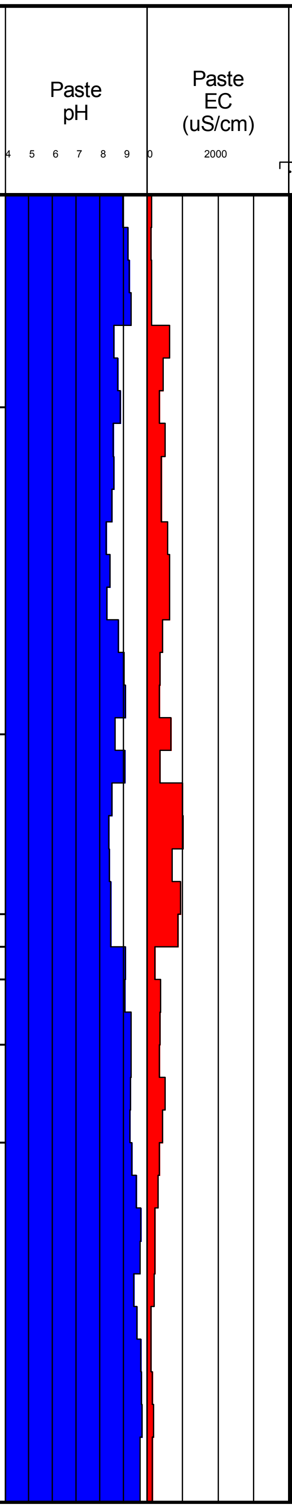
WELL NUMBER PW14-01

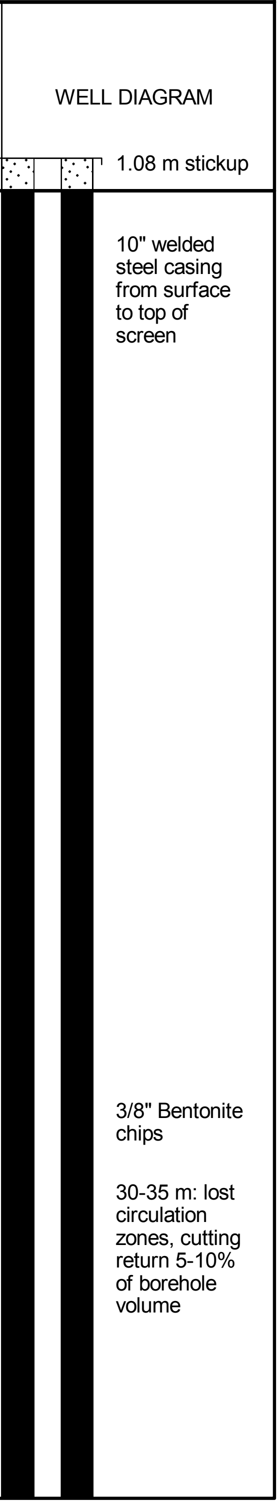
PAGE 1 OF 2

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon
DATE STARTED 2/23/14 **COMPLETED** 2/25/14
GROUND ELEVATION 1146.387 m **HOLE SIZE** 11.5 in
DRILLING CONTRACTOR Midnight Sun Drilling Inc.
NORTHING 584752 **EASTING** 6913152
DRILLING METHOD Symmetrix
GROUND WATER LEVELS:
LOGGED BY Tilman Roschinski **CHECKED BY** Christoph Wels
AT TIME OF DRILLING ---
NOTES Driller: Carl MacKenzie; Elevation Surveyed Oct 2014
▼ **AT END OF DRILLING** 58.43 m / Elev 1087.96 m
AFTER DRILLING ---

DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
	Waste Rock, dry, 2.5Y 5/1 (gray), phyllite, trace igneous rock fragments, cuttings ranging from silt to gravel with sand	
6.50	Slightly moist, 5Y 5/1 (gray), angular to subrounded clasts of varied lithology	1139.89
16.50	Dry to slightly moist, 2.5Y 6/2 (light brownish gray)	1129.89
22.00	2.5Y 4/1 (dark gray)	1124.39
23.00	5Y 5/2 (olive gray)	1123.39
24.00	5Y 5/2 (olive gray)	1122.39
26.00	Slightly moist	1120.39
29.00	Dry, 5Y 5/1 (gray) Loose formation from 33 m to 42 m	1117.39



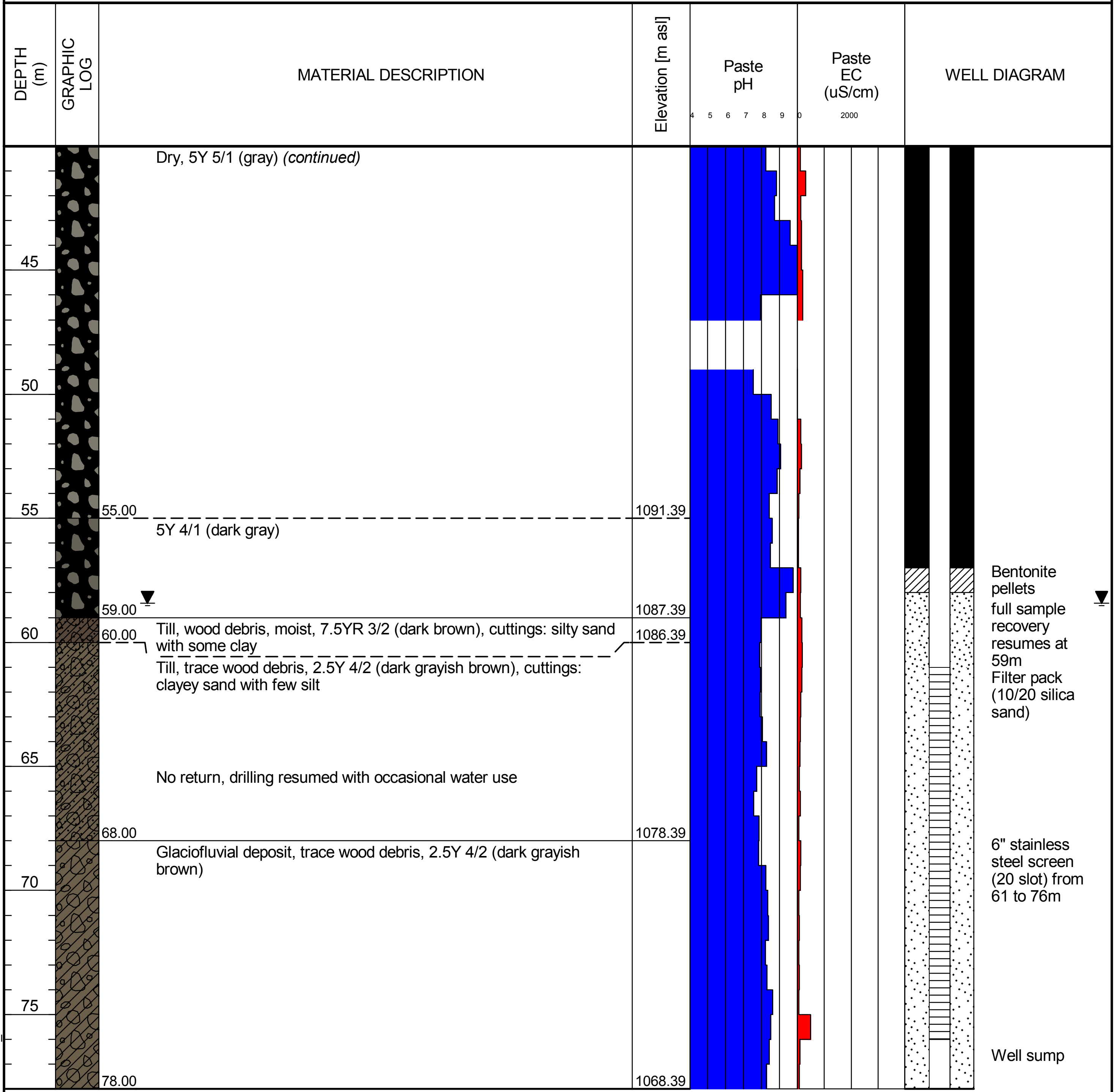




(Continued Next Page)

WELL NUMBER PW14-01

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon

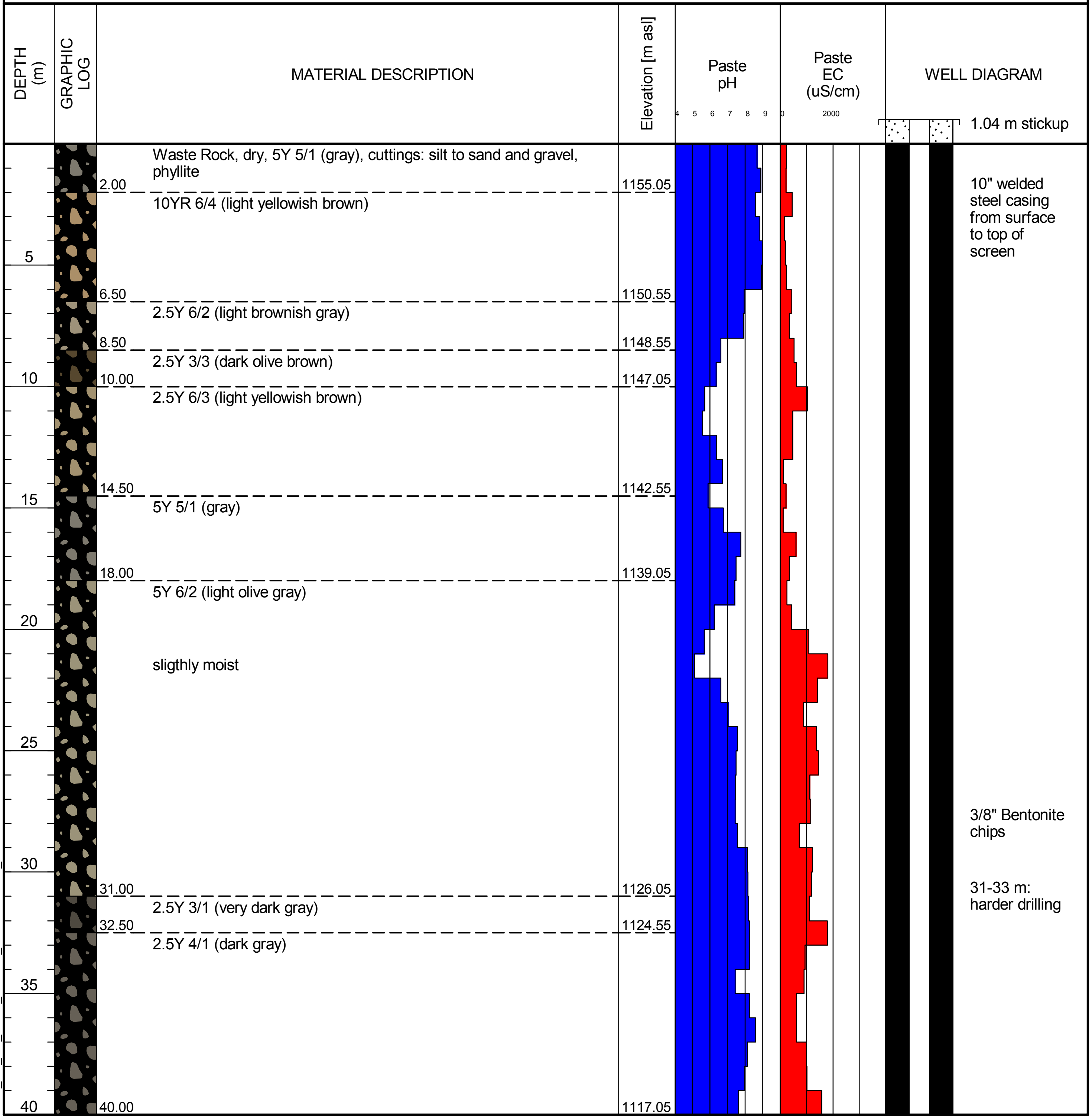


DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
	Dry, 5Y 5/1 (gray) *(continued)*	
55.00	5Y 4/1 (dark gray)	1091.39
59.00		1087.39
60.00	Till, wood debris, moist, 7.5YR 3/2 (dark brown), cuttings: silty sand with some clay	1086.39
	Till, trace wood debris, 2.5Y 4/2 (dark grayish brown), cuttings: clayey sand with few silt	
	No return, drilling resumed with occasional water use	
68.00	Glaciofluvial deposit, trace wood debris, 2.5Y 4/2 (dark grayish brown)	1078.39
78.00		1068.39

Bottom of hole at 78.00 m.

WELL NUMBER PW14-06

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon
DATE STARTED 3/8/14 **COMPLETED** 3/19/14
GROUND ELEVATION 1157.051 m **HOLE SIZE** 11.5 in
DRILLING CONTRACTOR Midnight Sun Drilling Inc.
NORTHING 584480 **EASTING** 6913308
DRILLING METHOD Symmetrix
GROUND WATER LEVELS:
LOGGED BY Tilman Roschinski **CHECKED BY** Christoph Wels
AT TIME OF DRILLING ---
NOTES Driller: Carl MacKenzie; Elevation Surveyed Oct 2014
AT END OF DRILLING ---
▽ **AFTER DRILLING** 47.70 m / Elev 1109.35 m



1.04 m stickup

10" welded steel casing from surface to top of screen

3/8" Bentonite chips

31-33 m: harder drilling

DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
	Waste Rock, dry, 5Y 5/1 (gray), cuttings: silt to sand and gravel, phyllite	
2.00	10YR 6/4 (light yellowish brown)	1155.05
6.50	2.5Y 6/2 (light brownish gray)	1150.55
8.50	2.5Y 3/3 (dark olive brown)	1148.55
10.00	2.5Y 6/3 (light yellowish brown)	1147.05
14.50	5Y 5/1 (gray)	1142.55
18.00	5Y 6/2 (light olive gray) sligthly moist	1139.05
31.00	2.5Y 3/1 (very dark gray)	1126.05
32.50	2.5Y 4/1 (dark gray)	1124.55
40.00		1117.05

(Continued Next Page)

Robertson GeoConsultants
Consulting Engineers and Scientists for the Mining Industry

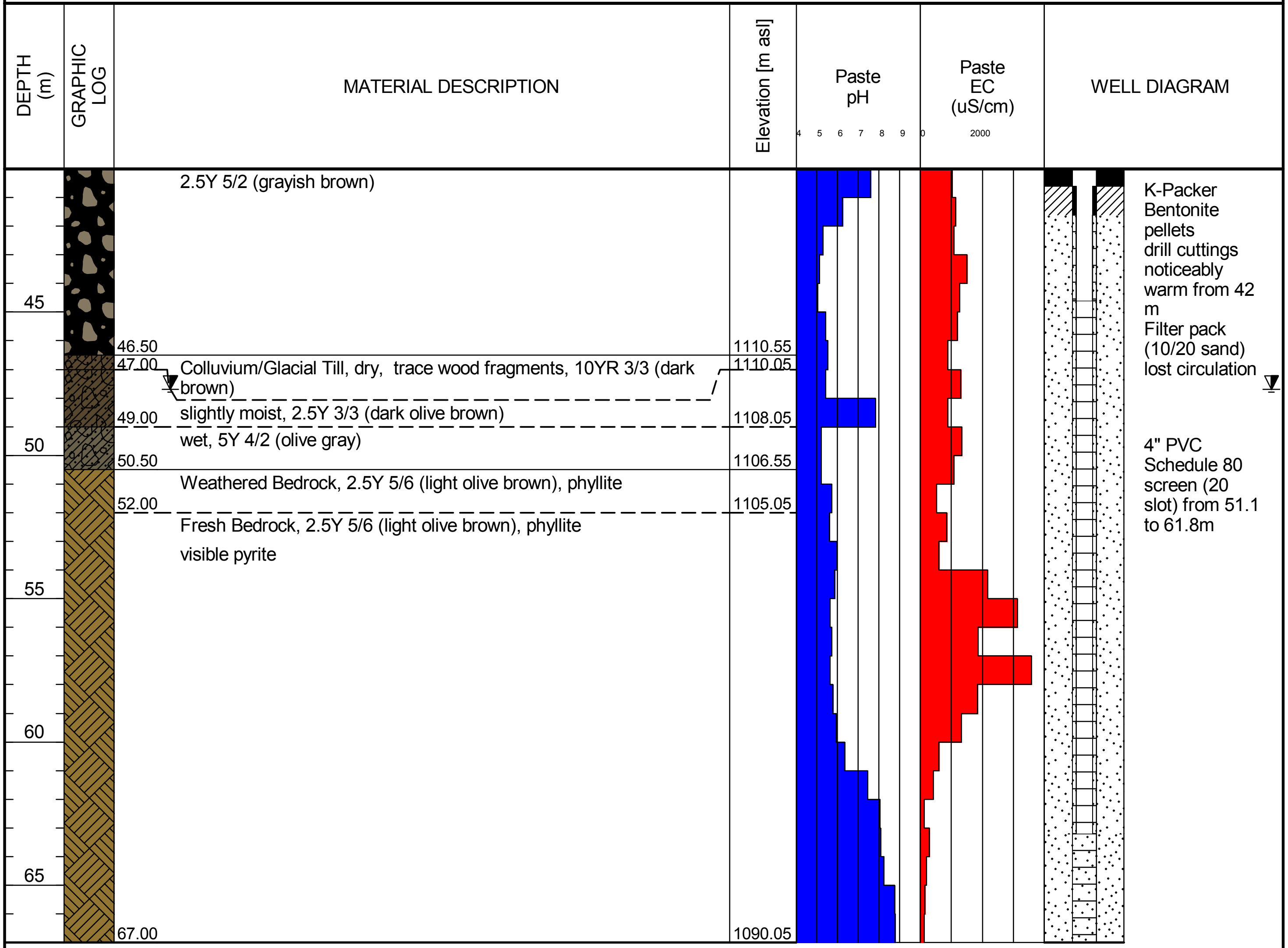
WELL NUMBER PW14-06

CLIENT Government of Yukon - AAM

PROJECT NAME NFRC 2014 Winter Drilling Program

PROJECT NUMBER 118026

PROJECT LOCATION Faro Mine, Yukon



2.5Y 5/2 (grayish brown)

Colluvium/Glacial Till, dry, trace wood fragments, 10YR 3/3 (dark brown)

slightly moist, 2.5Y 3/3 (dark olive brown)

wet, 5Y 4/2 (olive gray)

Weathered Bedrock, 2.5Y 5/6 (light olive brown), phyllite

Fresh Bedrock, 2.5Y 5/6 (light olive brown), phyllite

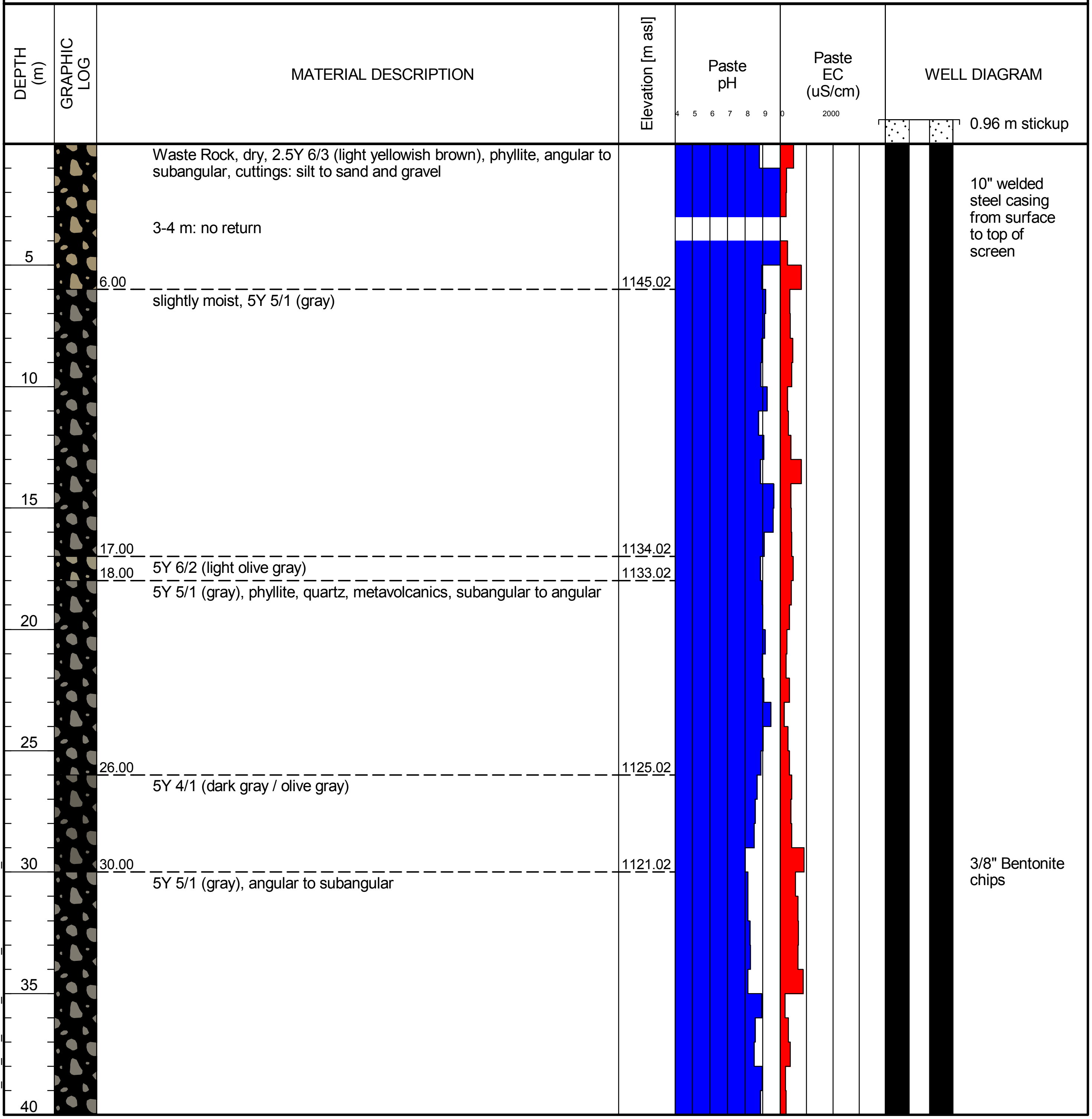
visible pyrite

Bottom of hole at 67.00 m.

Borehole diameter is 11.5" (292 mm) from 0-60 m bgs and 8" (203 mm) from 60-67 m bgs. A 6" slot 20 stainless steel screen is installed from 44.5 m to 63.4 m bgs. The screen was compromised during installation and a second screen 4" diameter is installed from 51.1 m to 61.8 m bgs with a 4" riser pipe that connects to the 6" casing with a K-packer at 43.3 m bgs.

WELL NUMBER PW14-07

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon
DATE STARTED 3/3/14 **COMPLETED** 3/7/14
GROUND ELEVATION 1151.016 m **HOLE SIZE** 11.5 in
DRILLING CONTRACTOR Midnight Sun Drilling Inc.
NORTHING 584692 **EASTING** 6913191
DRILLING METHOD Symmetrix
GROUND WATER LEVELS:
LOGGED BY Tilman Roschinski **CHECKED BY** Christoph Wels
AT TIME OF DRILLING ---
NOTES Driller: Carl MacKenzie; Elevation Surveyed Oct 2014
AT END OF DRILLING ---
▽ **AFTER DRILLING** 65.35 m / Elev 1085.67 m



Depth	Material Description	Elevation
	Waste Rock, dry, 2.5Y 6/3 (light yellowish brown), phyllite, angular to subangular, cuttings: silt to sand and gravel 3-4 m: no return	
6.00	slightly moist, 5Y 5/1 (gray)	1145.02
17.00	5Y 6/2 (light olive gray)	1134.02
18.00	5Y 5/1 (gray), phyllite, quartz, metavolcanics, subangular to angular	1133.02
26.00	5Y 4/1 (dark gray / olive gray)	1125.02
30.00	5Y 5/1 (gray), angular to subangular	1121.02

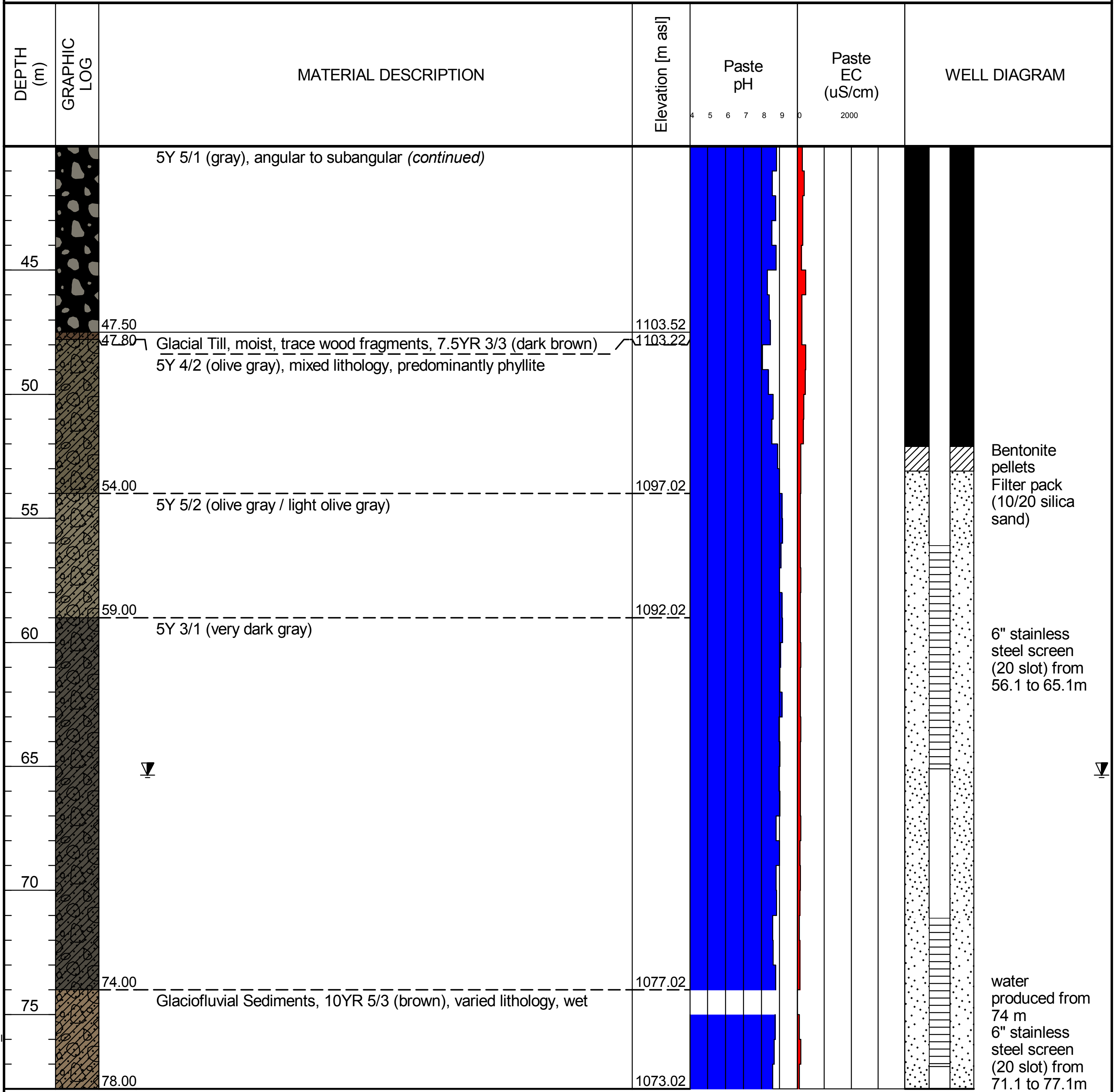
(Continued Next Page)

WELL NUMBER PW14-07

PAGE 2 OF 2

Robertson GeoConsultants
Consulting Engineers and Scientists for the Mining Industry

CLIENT Government of Yukon - AAM
PROJECT NAME NFRC 2014 Winter Drilling Program
PROJECT NUMBER 118026
PROJECT LOCATION Faro Mine, Yukon

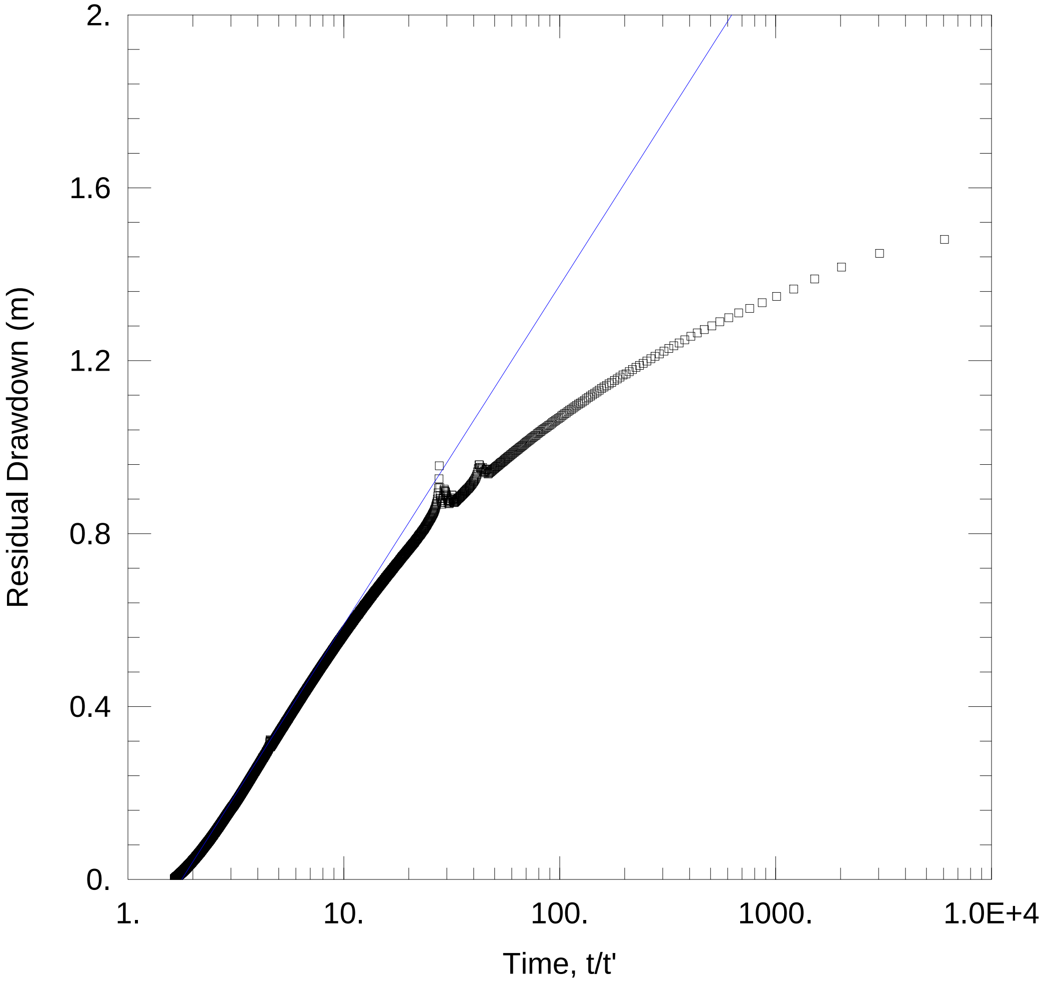


DEPTH (m)	MATERIAL DESCRIPTION	Elevation [m asl]
	5Y 5/1 (gray), angular to subangular *(continued)*	
47.50	Glacial Till, moist, trace wood fragments, 7.5YR 3/3 (dark brown)	1103.52
47.80	5Y 4/2 (olive gray), mixed lithology, predominantly phyllite	1103.22
54.00	5Y 5/2 (olive gray / light olive gray)	1097.02
59.00	5Y 3/1 (very dark gray)	1092.02
74.00	Glaciofluvial Sediments, 10YR 5/3 (brown), varied lithology, wet	1077.02
78.00		1073.02

Bottom of hole at 78.00 m.

APPENDIX C

Analysis of Hydraulic Testing Data



WELL TEST ANALYSIS

Data Set: S:\...\mw14-01.aqt
Date: 07/04/14 Time: 17:02:08

PROJECT INFORMATION

Company: RGC
Client: YG
Location: Faro
Test Well: MW14-01

AQUIFER DATA

Saturated Thickness: 3. m
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
PW14-01	0	0

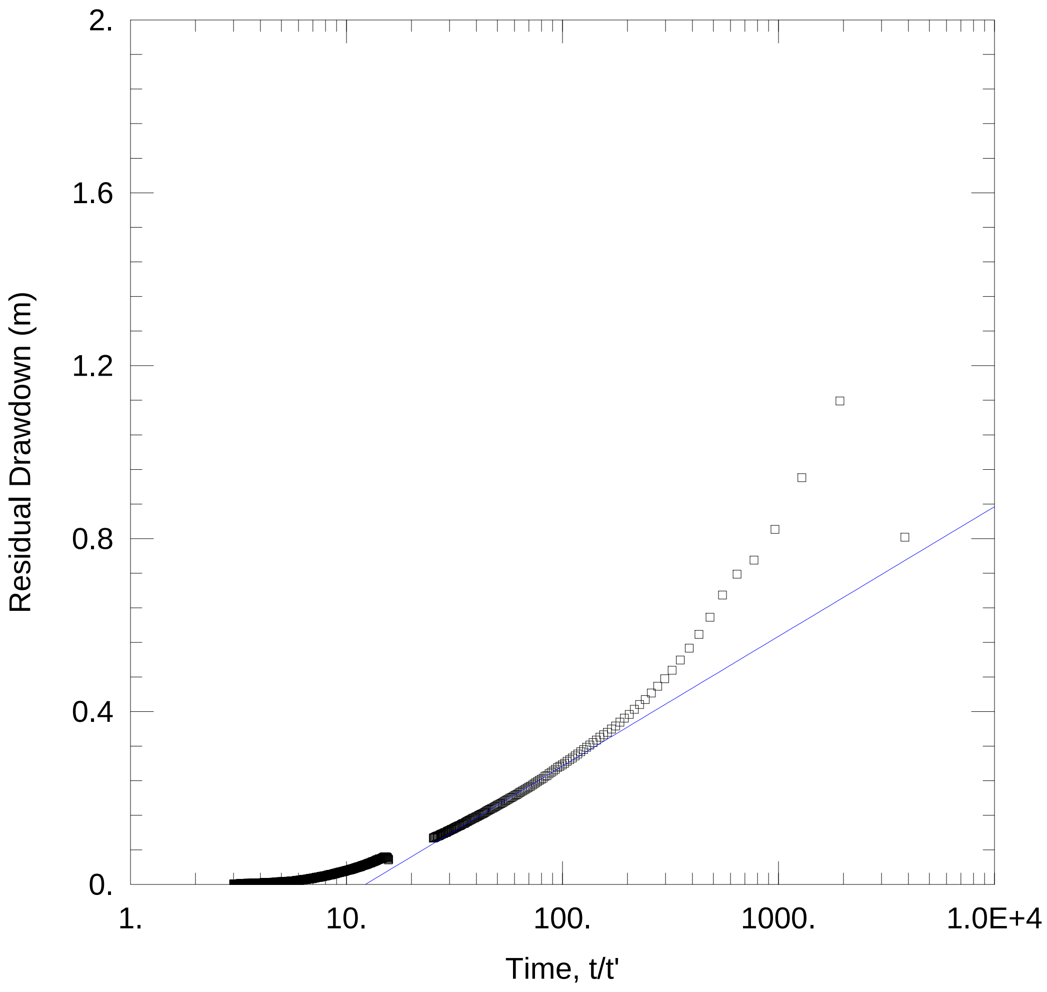
Observation Wells

Well Name	X (m)	Y (m)
□ PW14-01	0	0

SOLUTION

Aquifer Model: Confined
Solution Method: Theis (Recovery)

T = 0.0002307 m^2/sec
S/S' = 1.775



WELL TEST ANALYSIS

Data Set: S:\...\MW14-02S.aqt
Date: 07/04/14 Time: 17:04:35

PROJECT INFORMATION

Company: Faro
Location: Faro
Test Well: MW14-02S

AQUIFER DATA

Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
MW14-02S	0	0

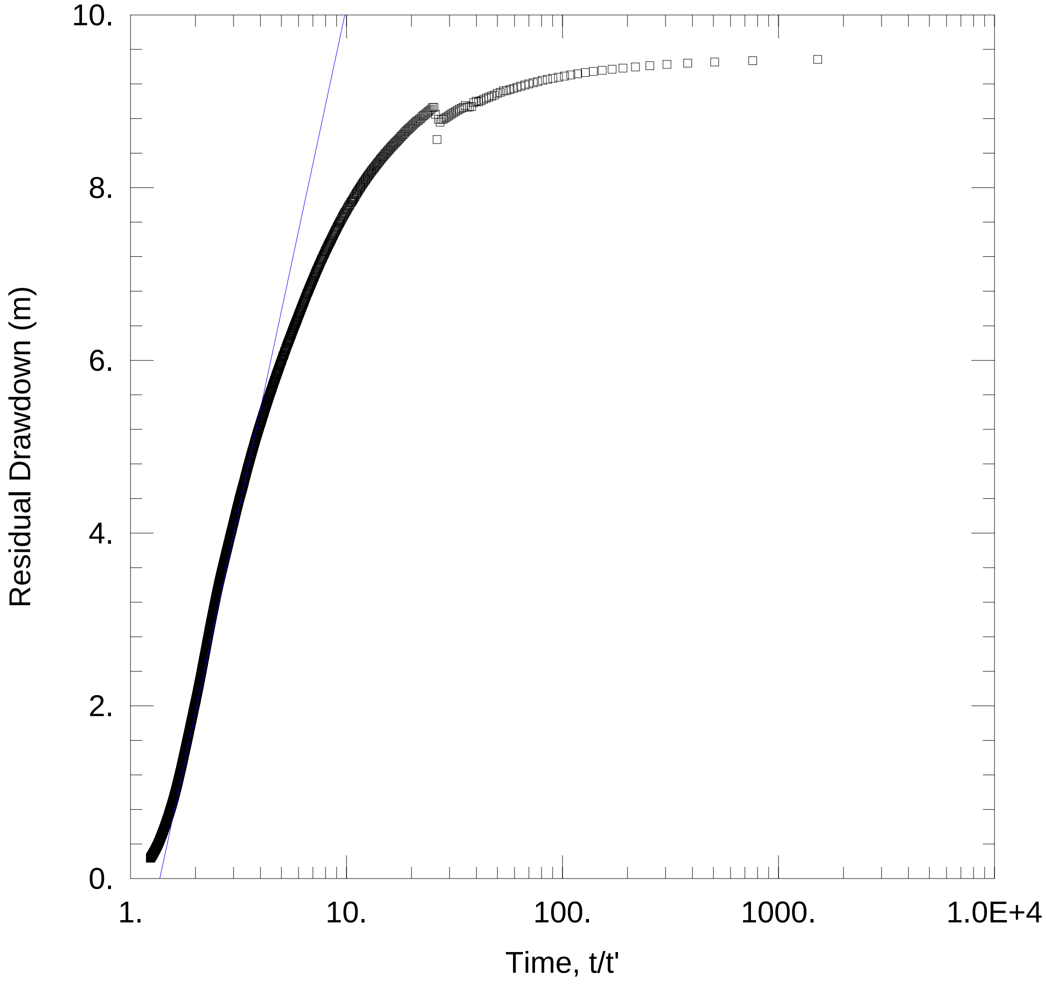
Observation Wells

Well Name	X (m)	Y (m)
□ MW14-02S	0	0

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 0.0005773 m^2/sec S/S' = 12.24



WELL TEST ANALYSIS

Data Set: S:\...\5.aqt
Date: 07/04/14 Time: 16:59:41

PROJECT INFORMATION

Company: RGC
Client: YG
Location: Faro
Test Well: MW14-05

AQUIFER DATA

Saturated Thickness: 10. m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
MW14-05	0	0

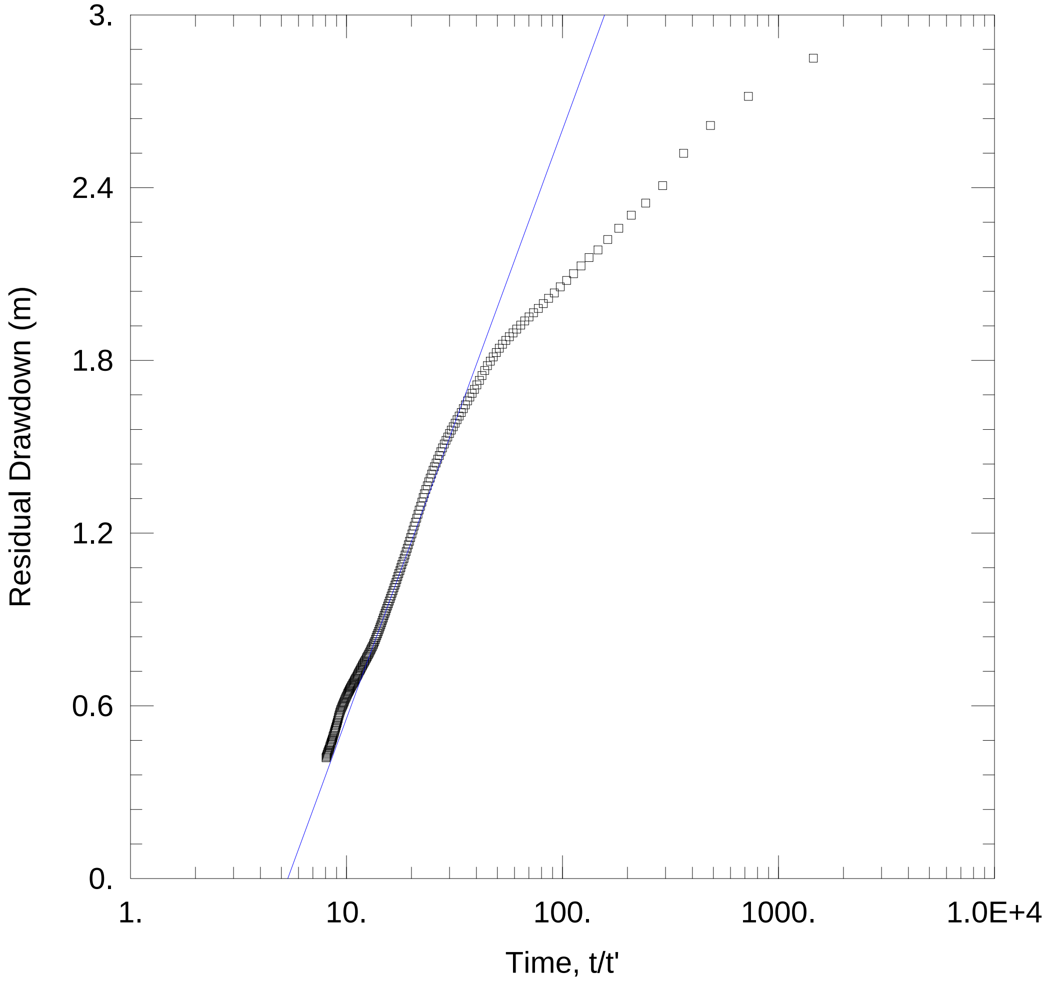
Observation Wells

Well Name	X (m)	Y (m)
□ MW14-05	0	0

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 7.324E-7 m^2/sec S/S' = 1.368



WELL TEST ANALYSIS

Data Set: S:\...\mw14-06.aqt
Date: 07/04/14 Time: 17:05:11

PROJECT INFORMATION

Company: RGC
Client: YG
Location: Faro
Test Well: MW14-01

AQUIFER DATA

Saturated Thickness: 3. m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
MW14-06	0	0

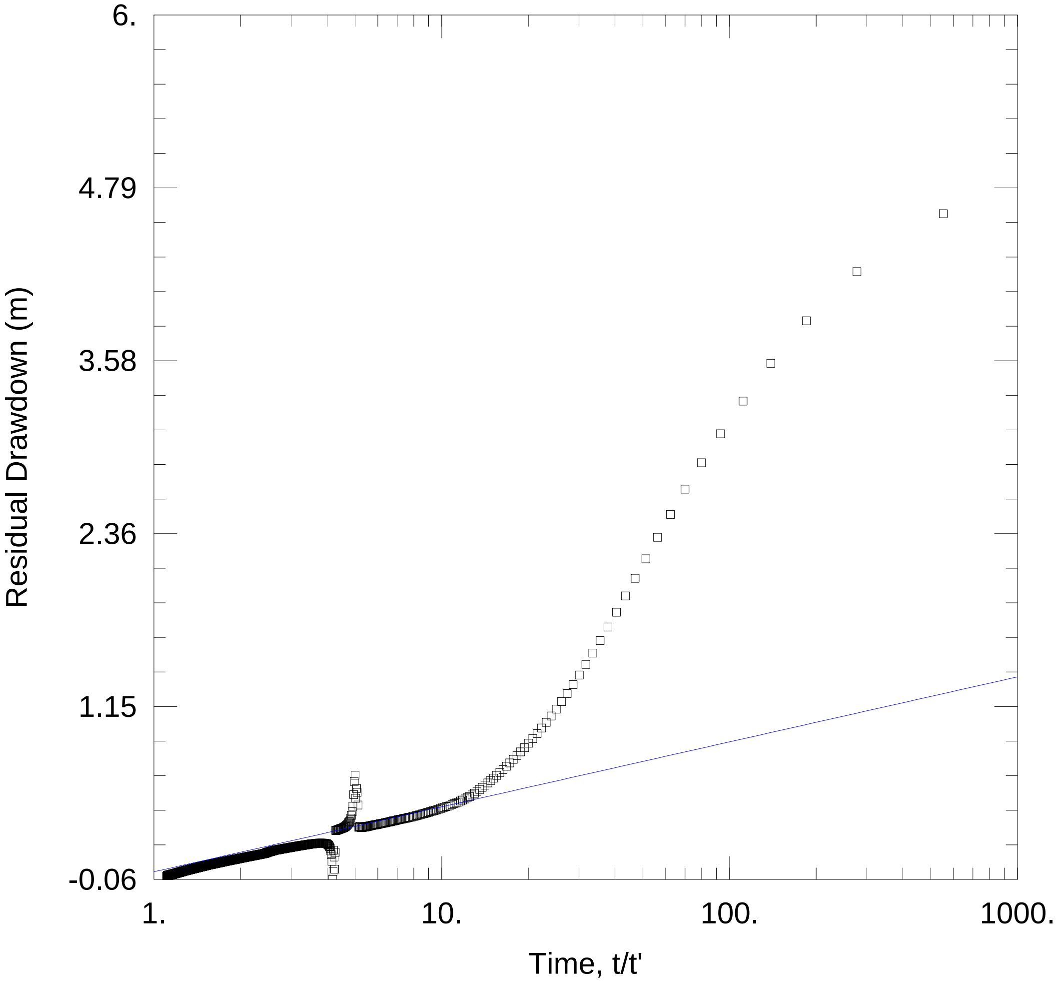
Observation Wells

Well Name	X (m)	Y (m)
□ MW14-06	0	0

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 2.826E-5 m^2/sec S/S' = 5.351



WELL TEST ANALYSIS

Data Set: S:\...\PW14-07.aqt
Date: 07/04/14 Time: 17:06:23

PROJECT INFORMATION

Company: Faro
Client: YTG
Location: Faro, YT
Test Well: MW14-07

AQUIFER DATA

Saturated Thickness: 4. m Anisotropy Ratio (Kz/Kr): 1.

WELL DATA

Pumping Wells

Well Name	X (m)	Y (m)
PW14-07	0	0

Observation Wells

Well Name	X (m)	Y (m)
□ PW14-07	0	0

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)

T = 0.0004024 m^2/sec S/S' = 1.036

APPENDIX D

Laboratory Reports of Groundwater Quality Analyses

Your Project #: 118026 NFRC WINTER DRILLING
Site Location: FARO, YUKON
Your C.O.C. #: 08390572

Attention: Paul Ferguson
ROBERTSON GEOCONSULTANTS INC
900-580 Hornby Street
Vancouver, BC
CANADA V6C 3B6

Report Date: 2014/03/14
Report #: R1534016
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B417993
Received: 2014/03/06, 16:40

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acidity pH 4.5 & pH 8.3 (as CaCO3)	4	N/A	2014/03/07	BBY6SOP-00037	SM-2310B
Alkalinity - Water	4	2014/03/07	2014/03/07	BBY6SOP-00026	SM2320B
Chloride by Automated Colourimetry	4	N/A	2014/03/07	BBY6SOP-00011	SM-4500-Cl-
Conductance - water	4	N/A	2014/03/07	BBY6SOP-00026	SM-2510B
Hardness Total (calculated as CaCO3)	3	N/A	2014/03/12	BBY7SOP-00002	EPA 6020A
Hardness Total (calculated as CaCO3)	1	N/A	2014/03/13	BBY7SOP-00002	EPA 6020A
Hardness (calculated as CaCO3)	4	N/A	2014/03/11	BBY7SOP-00002	EPA 6020A
Mercury (Dissolved) by CVAF	4	N/A	2014/03/12	BBY7SOP-00015	EPA 245.7
Mercury (Total) by CVAF	4	2014/03/12	2014/03/12	BBY7SOP-00015	EPA 245.7
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	4	N/A	2014/03/11	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved)	4	N/A	2014/03/10	BBY7SOP-00002	EPA 6020A
Na, K, Ca, Mg, S by CRC ICPMS (total)	3	2014/03/07	2014/03/12	BBY7SOP-00002	EPA 6020A
Na, K, Ca, Mg, S by CRC ICPMS (total)	1	2014/03/07	2014/03/13	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	3	2014/03/11	2014/03/12	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	1	2014/03/12	2014/03/12	BBY7SOP-00002	EPA 6020A
Filter and HNO3 Preserve for Metals	4	N/A	2014/03/07	BBY6WI-00001	EPA 200.2
pH Water (1)	4	N/A	2014/03/07	BBY6SOP-00026	SM-4500H+B
Sulphate by Automated Colourimetry	3	N/A	2014/03/07	BBY6SOP-00017	SM4500-SO42- E
Sulphate by Automated Colourimetry	1	N/A	2014/03/11	BBY6SOP-00017	SM4500-SO42- E

* Results relate only to the items tested.

(1) The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.

ROBERTSON GEOCONSULTANTS INC
Client Project #: 118026 NFRC WINTER DRILLING
Site Location: FARO, YUKON
Sampler Initials: AT

Maxxam Job #: B417993
Report Date: 2014/03/14

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Jasmeen Jatana, Project Manager
Email: JJatana@maxxam.ca
Phone# (604) 734 7276

==

This report has been generated and distributed using a secure automated process.
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		IY1201		IY1202	IY1203		IY1204		
Sampling Date		2014/02/28 17:30		2014/03/04 15:30	2014/03/02 10:00		2014/03/04 18:00		
COC#		08390572		08390572	08390572		08390572		
	UNITS	**MW14-01**	**QC Batch**	**MW14-02S**	**MW14-03**	**RDL**	**MW14-05**	**RDL**	**QC Batch**
Misc. Inorganics									
Acidity (pH 4.5)	mg/L	<0.50	7406523	<0.50	<0.50	0.50	<0.50	0.50	7406523
Acidity (pH 8.3)	mg/L	18.9	7406523	4.48	7.63	0.50	53.1	0.50	7406523
Calculated Parameters									
Filter and HNO3 Preservation	N/A	FIELD	ONSITE	FIELD	FIELD	N/A	FIELD	N/A	ONSITE
Total Hardness (CaCO3)	mg/L	207	7406543	152	410	0.50	1690	0.50	7406543
Misc. Inorganics									
Dissolved Hardness (CaCO3)	mg/L	205	7406583	149	383	0.50	1680	0.50	7406583
Alkalinity (Total as CaCO3)	mg/L	181	7407063	129	329	0.50	597	0.50	7407063
Alkalinity (PP as CaCO3)	mg/L	<0.50	7407063	<0.50	<0.50	0.50	<0.50	0.50	7407063
Bicarbonate (HCO3)	mg/L	220	7407063	157	402	0.50	728	0.50	7407063
Carbonate (CO3)	mg/L	<0.50	7407063	<0.50	<0.50	0.50	<0.50	0.50	7407063
Hydroxide (OH)	mg/L	<0.50	7407063	<0.50	<0.50	0.50	<0.50	0.50	7407063
Anions									
Dissolved Sulphate (SO4)	mg/L	58.5	7411299	24.1	79.0	0.50	1550	5.0	7408053
Dissolved Chloride (Cl)	mg/L	1.7	7408049	<0.50	4.2	0.50	6.5	0.50	7408049
Physical Properties									
Conductivity	uS/cm	463	7407068	304	749	1.0	3440	1.0	7407068
pH	pH	6.91	7407070	7.88	8.00		7.69		7407070

MERCURY BY COLD VAPOR (WATER)

Maxxam ID		IY1201	IY1202	IY1203	IY1204		
Sampling Date		2014/02/28 17:30	2014/03/04 15:30	2014/03/02 10:00	2014/03/04 18:00		
COC#		08390572	08390572	08390572	08390572		
	UNITS	**MW14-01**	**MW14-02S**	**MW14-03**	**MW14-05**	**RDL**	**QC Batch**
Elements							
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	7411774
Total Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	0.010	7411747

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: B417993
Report Date: 2014/03/14

ROBERTSON GEOCONSULTANTS INC
Client Project #: 118026 NFRC WINTER DRILLING
Site Location: FARO, YUKON
Sampler Initials: AT

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		IY1201		IY1202		IY1203	IY1204		
Sampling Date		2014/02/28 17:30		2014/03/04 15:30		2014/03/02 10:00	2014/03/04 18:00		
COC#		08390572		08390572		08390572	08390572		
	UNITS	**MW14-01**	**QC Batch**	**MW14-02S**	**QC Batch**	**MW14-03**	**MW14-05**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS									
Dissolved Aluminum (Al)	ug/L	18.0	7409832	<3.0	7409832	4.1	11.0	3.0	7409832
Dissolved Antimony (Sb)	ug/L	<0.50	7409832	<0.50	7409832	1.10	0.88	0.50	7409832
Dissolved Arsenic (As)	ug/L	1.62	7409832	0.72	7409832	1.89	1.64	0.10	7409832
Dissolved Barium (Ba)	ug/L	111	7409832	76.9	7409832	71.4	58.9	1.0	7409832
Dissolved Beryllium (Be)	ug/L	<0.10	7409832	<0.10	7409832	<0.10	<0.10	0.10	7409832
Dissolved Bismuth (Bi)	ug/L	<1.0	7409832	<1.0	7409832	<1.0	<1.0	1.0	7409832
Dissolved Boron (B)	ug/L	<50	7409832	<50	7409832	<50	<50	50	7409832
Dissolved Cadmium (Cd)	ug/L	0.051	7409832	0.022	7409832	0.031	0.124	0.010	7409832
Dissolved Chromium (Cr)	ug/L	<1.0	7409832	<1.0	7409832	<1.0	<1.0	1.0	7409832
Dissolved Cobalt (Co)	ug/L	5.56	7409832	0.77	7409832	2.36	12.5	0.50	7409832
Dissolved Copper (Cu)	ug/L	2.40	7409832	0.37	7409832	0.52	0.41	0.20	7409832
Dissolved Iron (Fe)	ug/L	150	7409832	118	7409832	18.1	1220	5.0	7409832
Dissolved Lead (Pb)	ug/L	<0.20	7409832	<0.20	7409832	<0.20	0.34	0.20	7409832
Dissolved Lithium (Li)	ug/L	14.6	7409832	8.3	7409832	36.6	67.4	5.0	7409832
Dissolved Manganese (Mn)	ug/L	1900	7409832	106	7409832	413	1680	1.0	7409832
Dissolved Molybdenum (Mo)	ug/L	<1.0	7409832	1.0	7409832	2.6	2.2	1.0	7409832
Dissolved Nickel (Ni)	ug/L	19.3	7409832	1.1	7409832	9.0	52.8	1.0	7409832
Dissolved Selenium (Se)	ug/L	0.66	7409832	0.51	7409832	0.18	0.50	0.10	7409832
Dissolved Silicon (Si)	ug/L	8690	7409832	5850	7409832	6420	7670	100	7409832
Dissolved Silver (Ag)	ug/L	<0.020	7409832	<0.020	7409832	<0.020	0.028	0.020	7409832
Dissolved Strontium (Sr)	ug/L	292	7409832	196	7409832	548	1140	1.0	7409832
Dissolved Thallium (Tl)	ug/L	<0.050	7409832	<0.050	7409832	<0.050	<0.050	0.050	7409832
Dissolved Tin (Sn)	ug/L	<5.0	7409832	<5.0	7409832	<5.0	<5.0	5.0	7409832
Dissolved Titanium (Ti)	ug/L	<5.0	7409832	<5.0	7409832	<5.0	<5.0	5.0	7409832
Dissolved Uranium (U)	ug/L	1.81	7409832	2.84	7409832	11.8	77.1	0.10	7409832
Dissolved Vanadium (V)	ug/L	<5.0	7409832	<5.0	7409832	<5.0	<5.0	5.0	7409832
Dissolved Zinc (Zn)	ug/L	926	7409832	17.8	7409832	27.4	32.9	5.0	7409832
Dissolved Zirconium (Zr)	ug/L	<0.50	7409832	<0.50	7409832	<0.50	0.86	0.50	7409832
Dissolved Calcium (Ca)	mg/L	59.8	7406656	43.3	7406656	107	249	0.050	7406656
Dissolved Magnesium (Mg)	mg/L	13.5	7406656	9.91	7406656	28.2	256	0.050	7406656
Dissolved Potassium (K)	mg/L	2.73	7406656	1.13	7406656	7.94	11.1	0.050	7406656
Dissolved Sodium (Na)	mg/L	13.3	7406656	3.93	7406656	8.03	10.1	0.050	7406656
Dissolved Sulphur (S)	mg/L	19.4	7406656	8.3	7406656	27.6	435	3.0	7406656

RDL = Reportable Detection Limit

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		IY1201		IY1202		IY1203	IY1204		
Sampling Date		2014/02/28 17:30		2014/03/04 15:30		2014/03/02 10:00	2014/03/04 18:00		
COC#		08390572		08390572		08390572	08390572		
	UNITS	**MW14-01**	**QC Batch**	**MW14-02S**	**QC Batch**	**MW14-03**	**MW14-05**	**RDL**	**QC Batch**
Total Metals by ICPMS									
Total Aluminum (Al)	ug/L	1600	7411159	40.9	7412438	3410	10100	3.0	7411159
Total Antimony (Sb)	ug/L	<0.50	7411159	<0.50	7412438	1.24	1.23	0.50	7411159
Total Arsenic (As)	ug/L	3.31	7411159	0.81	7412438	2.78	3.30	0.10	7411159
Total Barium (Ba)	ug/L	135	7411159	78.5	7412438	145	226	1.0	7411159
Total Beryllium (Be)	ug/L	0.26	7411159	<0.10	7412438	0.28	0.66	0.10	7411159
Total Bismuth (Bi)	ug/L	<1.0	7411159	<1.0	7412438	<1.0	<1.0	1.0	7411159
Total Boron (B)	ug/L	<50	7411159	<50	7412438	<50	<50	50	7411159
Total Cadmium (Cd)	ug/L	0.076	7411159	0.025	7412438	0.169	0.297	0.010	7411159
Total Chromium (Cr)	ug/L	4.0	7411159	<1.0	7412438	15.1	26.1	1.0	7411159
Total Cobalt (Co)	ug/L	6.60	7411159	0.79	7412438	5.63	21.4	0.50	7411159
Total Copper (Cu)	ug/L	7.90	7411159	<0.50	7412438	10.9	11.8	0.50	7411159
Total Iron (Fe)	ug/L	5040	7411159	239	7412438	8910	30800	10	7411159
Total Lead (Pb)	ug/L	3.76	7411159	0.47	7412438	12.0	69.0	0.20	7411159
Total Lithium (Li)	ug/L	15.8	7411159	7.9	7412438	42.3	91.6	5.0	7411159
Total Manganese (Mn)	ug/L	1960	7411159	110	7412438	517	2150	1.0	7411159
Total Molybdenum (Mo)	ug/L	1.1	7411159	<1.0	7412438	2.0	3.1	1.0	7411159
Total Nickel (Ni)	ug/L	24.0	7411159	1.1	7412438	17.6	76.7	1.0	7411159
Total Selenium (Se)	ug/L	0.58	7411159	0.44	7412438	0.29	0.50	0.10	7411159
Total Silicon (Si)	ug/L	10600	7411159	6060	7412438	10900	22400	100	7411159
Total Silver (Ag)	ug/L	0.042	7411159	<0.020	7412438	<0.020	0.066	0.020	7411159
Total Strontium (Sr)	ug/L	285	7411159	198	7412438	574	1150	1.0	7411159
Total Thallium (Tl)	ug/L	<0.050	7411159	<0.050	7412438	0.107	0.229	0.050	7411159
Total Tin (Sn)	ug/L	<5.0	7411159	<5.0	7412438	<5.0	<5.0	5.0	7411159
Total Titanium (Ti)	ug/L	56.4	7411159	<5.0	7412438	173	545	5.0	7411159
Total Uranium (U)	ug/L	2.07	7411159	2.80	7412438	12.6	75.2	0.10	7411159
Total Vanadium (V)	ug/L	<5.0	7411159	<5.0	7412438	9.8	22.6	5.0	7411159
Total Zinc (Zn)	ug/L	974	7411159	18.6	7412438	112	379	5.0	7411159
Total Zirconium (Zr)	ug/L	0.72	7411159	<0.50	7412438	2.62	5.79	0.50	7411159
Total Calcium (Ca)	mg/L	59.6	7406544	44.8	7406544	114	258	0.050	7406544
Total Magnesium (Mg)	mg/L	14.0	7406544	9.76	7406544	30.7	254	0.050	7406544
Total Potassium (K)	mg/L	2.88	7406544	1.13	7406544	8.92	15.0	0.050	7406544
Total Sodium (Na)	mg/L	14.6	7406544	3.89	7406544	8.14	10.1	0.050	7406544
Total Sulphur (S)	mg/L	18.3	7406544	8.6	7406544	25.6	420	3.0	7406544

RDL = Reportable Detection Limit

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	**Parameter**	**Date**	**% Recovery**	**QC Limits**	**% Recovery**	**QC Limits**	**Value**	**UNITS**	**Value (%)**	**QC Limits**
7406523	Acidity (pH 8.3)	2014/03/07			99	80 - 120	<0.50	mg/L	0.7	20
7406523	Acidity (pH 4.5)	2014/03/07					<0.50	mg/L	NC	20
7407063	Alkalinity (Total as CaCO3)	2014/03/08	NC	80 - 120	93	80 - 120	<0.50	mg/L	0.7	20
7407063	Alkalinity (PP as CaCO3)	2014/03/08					<0.50	mg/L	NC	20
7407063	Bicarbonate (HCO3)	2014/03/08					<0.50	mg/L	0.7	20
7407063	Carbonate (CO3)	2014/03/08					<0.50	mg/L	NC	20
7407063	Hydroxide (OH)	2014/03/08					<0.50	mg/L	NC	20
7407068	Conductivity	2014/03/07			99	80 - 120	<1.0	uS/cm	0.4	20
7408049	Dissolved Chloride (Cl)	2014/03/07	NC	80 - 120	104	80 - 120	<0.50	mg/L	NC	20
7408053	Dissolved Sulphate (SO4)	2014/03/07	NC	80 - 120	100	80 - 120	<0.50	mg/L	NC	20
7409832	Dissolved Aluminum (Al)	2014/03/10	100	80 - 120	104	80 - 120	<3.0	ug/L	NC	20
7409832	Dissolved Antimony (Sb)	2014/03/10	98	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7409832	Dissolved Arsenic (As)	2014/03/10	NC	80 - 120	101	80 - 120	<0.10	ug/L	1.0	20
7409832	Dissolved Barium (Ba)	2014/03/10	NC	80 - 120	96	80 - 120	<1.0	ug/L	0.2	20
7409832	Dissolved Beryllium (Be)	2014/03/10	92	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
7409832	Dissolved Bismuth (Bi)	2014/03/10	90	80 - 120	101	80 - 120	<1.0	ug/L	NC	20
7409832	Dissolved Cadmium (Cd)	2014/03/10	93	80 - 120	100	80 - 120	<0.010	ug/L	NC	20
7409832	Dissolved Chromium (Cr)	2014/03/10	96	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
7409832	Dissolved Cobalt (Co)	2014/03/10	90	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
7409832	Dissolved Copper (Cu)	2014/03/10	88	80 - 120	102	80 - 120	<0.20	ug/L	NC	20
7409832	Dissolved Iron (Fe)	2014/03/10	NC	80 - 120	105	80 - 120	<5.0	ug/L	0.4	20
7409832	Dissolved Lead (Pb)	2014/03/10	90	80 - 120	96	80 - 120	<0.20	ug/L	NC	20
7409832	Dissolved Lithium (Li)	2014/03/10	NC	80 - 120	102	80 - 120	<5.0	ug/L	1.1	20
7409832	Dissolved Manganese (Mn)	2014/03/10	NC	80 - 120	98	80 - 120	<1.0	ug/L	0.9	20
7409832	Dissolved Molybdenum (Mo)	2014/03/10	NC	80 - 120	102	80 - 120	<1.0	ug/L	0.5	20
7409832	Dissolved Nickel (Ni)	2014/03/10	89	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7409832	Dissolved Selenium (Se)	2014/03/10	102	80 - 120	108	80 - 120	<0.10	ug/L	NC	20
7409832	Dissolved Silver (Ag)	2014/03/10	92	80 - 120	99	80 - 120	<0.020	ug/L	NC	20
7409832	Dissolved Strontium (Sr)	2014/03/10	NC	80 - 120	98	80 - 120	<1.0	ug/L	0.6	20
7409832	Dissolved Thallium (Tl)	2014/03/10	92	80 - 120	100	80 - 120	<0.050	ug/L	NC	20
7409832	Dissolved Tin (Sn)	2014/03/10	96	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
7409832	Dissolved Titanium (Ti)	2014/03/10	102	80 - 120	93	80 - 120	<5.0	ug/L	NC	20
7409832	Dissolved Uranium (U)	2014/03/10	99	80 - 120	95	80 - 120	<0.10	ug/L	NC	20
7409832	Dissolved Vanadium (V)	2014/03/10	100	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
7409832	Dissolved Zinc (Zn)	2014/03/10	83	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
7409832	Dissolved Boron (B)	2014/03/10					<50	ug/L	1.5	20
7409832	Dissolved Silicon (Si)	2014/03/10					<100	ug/L	0.4	20
7409832	Dissolved Zirconium (Zr)	2014/03/10					<0.50	ug/L	NC	20
7411159	Total Aluminum (Al)	2014/03/12	111	80 - 120	109	80 - 120	<3.0	ug/L	NC	20
7411159	Total Antimony (Sb)	2014/03/12	104	80 - 120	102	80 - 120	<0.50	ug/L	NC	20

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	**Parameter**	**Date**	**% Recovery**	**QC Limits**	**% Recovery**	**QC Limits**	**Value**	**UNITS**	**Value (%)**	**QC Limits**
7411159	Total Arsenic (As)	2014/03/12	103	80 - 120	101	80 - 120	<0.10	ug/L	3.0	20
7411159	Total Barium (Ba)	2014/03/12	NC	80 - 120	100	80 - 120	<1.0	ug/L	3.6	20
7411159	Total Beryllium (Be)	2014/03/12	100	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
7411159	Total Bismuth (Bi)	2014/03/12	95	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7411159	Total Cadmium (Cd)	2014/03/12	101	80 - 120	105	80 - 120	<0.010	ug/L	NC	20
7411159	Total Chromium (Cr)	2014/03/12	101	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7411159	Total Cobalt (Co)	2014/03/12	102	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
7411159	Total Copper (Cu)	2014/03/12	99	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
7411159	Total Iron (Fe)	2014/03/12	119	80 - 120	130(1, 2)	80 - 120	16, RDL=10	ug/L	NC	20
7411159	Total Lead (Pb)	2014/03/12	96	80 - 120	98	80 - 120	<0.20	ug/L	NC	20
7411159	Total Lithium (Li)	2014/03/12	NC	80 - 120	100	80 - 120	<5.0	ug/L	3.8	20
7411159	Total Manganese (Mn)	2014/03/12	103	80 - 120	106	80 - 120	<1.0	ug/L	NC	20
7411159	Total Molybdenum (Mo)	2014/03/12	NC	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
7411159	Total Nickel (Ni)	2014/03/12	99	80 - 120	108	80 - 120	<1.0	ug/L	NC	20
7411159	Total Selenium (Se)	2014/03/12	103	80 - 120	104	80 - 120	<0.10	ug/L	NC	20
7411159	Total Silver (Ag)	2014/03/12	109	80 - 120	96	80 - 120	<0.020	ug/L	NC	20
7411159	Total Strontium (Sr)	2014/03/12	NC	80 - 120	99	80 - 120	<1.0	ug/L	2.9	20
7411159	Total Thallium (Tl)	2014/03/12	100	80 - 120	103	80 - 120	<0.050	ug/L	NC	20
7411159	Total Tin (Sn)	2014/03/12	NC	80 - 120	97	80 - 120	<5.0	ug/L	NC	20
7411159	Total Titanium (Ti)	2014/03/12	127(1)	80 - 120	112	80 - 120	<5.0	ug/L	NC	20
7411159	Total Uranium (U)	2014/03/12	99	80 - 120	98	80 - 120	<0.10	ug/L	7.3	20
7411159	Total Vanadium (V)	2014/03/12	105	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
7411159	Total Zinc (Zn)	2014/03/12	NC	80 - 120	122(1, 2)	80 - 120	<5.0	ug/L	NC	20
7411159	Total Boron (B)	2014/03/12					<50	ug/L	NC	20
7411159	Total Silicon (Si)	2014/03/12					<100	ug/L	1.4	20
7411159	Total Zirconium (Zr)	2014/03/12					<0.50	ug/L	NC	20
7411299	Dissolved Sulphate (SO4)	2014/03/11	116	80 - 120	105	80 - 120	<0.50	mg/L	NC	20
7411747	Total Mercury (Hg)	2014/03/12	102	80 - 120	94	80 - 120	<0.010	ug/L	NC	20
7411774	Dissolved Mercury (Hg)	2014/03/12	105	80 - 120	109	80 - 120	<0.010	ug/L	NC	20
7412438	Total Aluminum (Al)	2014/03/12	103	80 - 120	107	80 - 120	<3.0	ug/L	0.9	20
7412438	Total Antimony (Sb)	2014/03/12	106	80 - 120	102	80 - 120	<0.50	ug/L		
7412438	Total Arsenic (As)	2014/03/12	111	80 - 120	107	80 - 120	<0.10	ug/L	4.5	20
7412438	Total Barium (Ba)	2014/03/12	102	80 - 120	102	80 - 120	<1.0	ug/L		
7412438	Total Beryllium (Be)	2014/03/12	103	80 - 120	99	80 - 120	<0.10	ug/L		
7412438	Total Bismuth (Bi)	2014/03/12	98	80 - 120	105	80 - 120	<1.0	ug/L		
7412438	Total Cadmium (Cd)	2014/03/12	106	80 - 120	104	80 - 120	<0.010	ug/L	NC	20
7412438	Total Chromium (Cr)	2014/03/12	100	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7412438	Total Cobalt (Co)	2014/03/12	102	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
7412438	Total Copper (Cu)	2014/03/12	NC	80 - 120	102	80 - 120	<0.50	ug/L	4.4	20
7412438	Total Iron (Fe)	2014/03/12	107	80 - 120	109	80 - 120	<10	ug/L	NC	20

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	**Parameter**	**Date**	**% Recovery**	**QC Limits**	**% Recovery**	**QC Limits**	**Value**	**UNITS**	**Value (%)**	**QC Limits**
7412438	Total Lead (Pb)	2014/03/12	95	80 - 120	99	80 - 120	<0.20	ug/L	NC	20
7412438	Total Lithium (Li)	2014/03/12	100	80 - 120	101	80 - 120	<5.0	ug/L		
7412438	Total Manganese (Mn)	2014/03/12	104	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7412438	Total Molybdenum (Mo)	2014/03/12	97	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7412438	Total Nickel (Ni)	2014/03/12	102	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
7412438	Total Selenium (Se)	2014/03/12	113	80 - 120	104	80 - 120	<0.10	ug/L	NC	20
7412438	Total Silver (Ag)	2014/03/12	103	80 - 120	99	80 - 120	<0.020	ug/L	NC	20
7412438	Total Strontium (Sr)	2014/03/12	NC	80 - 120	99	80 - 120	<1.0	ug/L		
7412438	Total Thallium (Tl)	2014/03/12	96	80 - 120	108	80 - 120	<0.050	ug/L		
7412438	Total Tin (Sn)	2014/03/12	99	80 - 120	99	80 - 120	<5.0	ug/L		
7412438	Total Titanium (Ti)	2014/03/12	104	80 - 120	109	80 - 120	<5.0	ug/L		
7412438	Total Uranium (U)	2014/03/12	96	80 - 120	99	80 - 120	<0.10	ug/L		
7412438	Total Vanadium (V)	2014/03/12	104	80 - 120	101	80 - 120	<5.0	ug/L		
7412438	Total Zinc (Zn)	2014/03/12	NC	80 - 120	119	80 - 120	<5.0	ug/L	NC	20
7412438	Total Boron (B)	2014/03/12					<50	ug/L	NC	20
7412438	Total Silicon (Si)	2014/03/12					<100	ug/L		
7412438	Total Zirconium (Zr)	2014/03/12					<0.50	ug/L		

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(2) - Blank Spike outside acceptance criteria (10% of analytes failure allowed).

Validation Signature Page

Maxxam Job #: B417993

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Rob Reinert, Data Validation Coordinator

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Maxxam

Success Through Science®

Your Project #: 118026 NFRC WINTER DRILLING
Site Location: FARO, YT, CANADA
Your C.O.C. #: 08391048

Attention: Paul Ferguson
ROBERTSON GEOCONSULTANTS INC
900-580 Hornby Street
Vancouver, BC
CANADA V6C 3B6

Report Date: 2014/03/31
Report #: R1543984
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B423161
Received: 2014/03/24, 12:50

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Acidity pH 4.5 & pH 8.3 (as CaCO3)	2	N/A	2014/03/24	BBY6SOP-00037	SM-2310B
Alkalinity - Water	2	2014/03/24	2014/03/25	BBY6SOP-00026	SM2320B
Chloride by Automated Colourimetry	2	N/A	2014/03/25	BBY6SOP-00011	SM-4500-Cl-
Conductance - water	2	N/A	2014/03/25	BBY6SOP-00026	SM-2510B
Hardness Total (calculated as CaCO3)	2	N/A	2014/03/31	BBY7SOP-00002	EPA 6020A
Hardness (calculated as CaCO3)	2	N/A	2014/03/28	BBY7SOP-00002	EPA 6020A
Mercury (Dissolved) by CVAF	2	N/A	2014/03/27	BBY7SOP-00015	EPA 245.7
Mercury (Total) by CVAF	2	2014/03/27	2014/03/27	BBY7SOP-00015	EPA 245.7
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	2	N/A	2014/03/28	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved)	1	N/A	2014/03/26	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved)	1	N/A	2014/03/27	BBY7SOP-00002	EPA 6020A
Na, K, Ca, Mg, S by CRC ICPMS (total)	2	2014/03/24	2014/03/31	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (total)	2	2014/03/27	2014/03/29	BBY7SOP-00002	EPA 6020A
Filter and HNO3 Preserve for Metals	2	N/A	2014/03/24	BBY6WI-00001	EPA 200.2
pH Water (1)	2	N/A	2014/03/25	BBY6SOP-00026	SM-4500H+B

* Results relate only to the items tested.

(1) The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Jasmeen Jatana, Project Manager
Email: JJatana@maxxam.ca
Phone# (604) 734 7276

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This report has been generated and distributed using a secure automated process.
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.
Total cover pages: 1

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		JC8140		JC8141		
Sampling Date		2014/03/20 13:45		2014/03/14 13:10		
COC#		08391048		08391048		
	UNITS	**PW-14-06**	**RDL**	**PW-14-07**	**RDL**	**QC Batch**
Misc. Inorganics						
Acidity (pH 4.5)	mg/L	20.6	0.50	<0.50	0.50	7426407
Acidity (pH 8.3)	mg/L	5560(1)	2.5	92.8	0.50	7426407
Calculated Parameters						
Filter and HNO3 Preservation	N/A	FIELD	N/A	FIELD	N/A	ONSITE
Total Hardness (CaCO3)	mg/L	16300	0.50	459	0.50	7426216
Misc. Inorganics						
Dissolved Hardness (CaCO3)	mg/L	18400	0.50	459	0.50	7425622
Alkalinity (Total as CaCO3)	mg/L	<0.50	0.50	222	0.50	7426892
Alkalinity (PP as CaCO3)	mg/L	<0.50	0.50	<0.50	0.50	7426892
Bicarbonate (HCO3)	mg/L	<0.50	0.50	270	0.50	7426892
Carbonate (CO3)	mg/L	<0.50	0.50	<0.50	0.50	7426892
Hydroxide (OH)	mg/L	<0.50	0.50	<0.50	0.50	7426892
Anions						
Dissolved Chloride (Cl)	mg/L	2.8	0.50	2.1	0.50	7428206
Physical Properties						
Conductivity	uS/cm	20200	1.0	917	1.0	7426894
pH	pH	4.23		6.60		7426893

MERCURY BY COLD VAPOR (WATER)

Maxxam ID		JC8140	JC8141		
Sampling Date		2014/03/20 13:45	2014/03/14 13:10		
COC#		08391048	08391048		
	UNITS	**PW-14-06**	**PW-14-07**	**RDL**	**QC Batch**
Elements					
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	0.010	7431290
Total Mercury (Hg)	ug/L	<0.010	<0.010	0.010	7430706

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) - RDL raised due to sample dilution.

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		JC8140		JC8141		
Sampling Date		2014/03/20 13:45		2014/03/14 13:10		
COC#		08391048		08391048		
	UNITS	**PW-14-06**	**RDL**	**PW-14-07**	**RDL**	**QC Batch**
Dissolved Metals by ICPMS						
Dissolved Aluminum (Al)	ug/L	71600	300	101	3.0	7427945
Dissolved Antimony (Sb)	ug/L	<50	50	<0.50	0.50	7427945
Dissolved Arsenic (As)	ug/L	46	10	2.39	0.10	7427945
Dissolved Barium (Ba)	ug/L	<100	100	91.7	1.0	7427945
Dissolved Beryllium (Be)	ug/L	36	10	0.74	0.10	7427945
Dissolved Bismuth (Bi)	ug/L	<100	100	<1.0	1.0	7427945
Dissolved Boron (B)	ug/L	<5000	5000	<50	50	7427945
Dissolved Cadmium (Cd)	ug/L	2890	1.0	0.277	0.010	7427945
Dissolved Chromium (Cr)	ug/L	<100	100	<1.0	1.0	7427945
Dissolved Cobalt (Co)	ug/L	7660	50	7.97	0.50	7427945
Dissolved Copper (Cu)	ug/L	144	20	0.64	0.20	7427945
Dissolved Iron (Fe)	ug/L	433000	500	19900	5.0	7427945
Dissolved Lead (Pb)	ug/L	2100	20	<0.20	0.20	7427945
Dissolved Lithium (Li)	ug/L	702	500	49.9	5.0	7427945
Dissolved Manganese (Mn)	ug/L	582000	100	1250	1.0	7427945
Dissolved Molybdenum (Mo)	ug/L	<100	100	2.6	1.0	7427945
Dissolved Nickel (Ni)	ug/L	12900	100	20.6	1.0	7427945
Dissolved Selenium (Se)	ug/L	<10	10	0.24	0.10	7427945
Dissolved Silicon (Si)	ug/L	17600	10000	10900	100	7427945
Dissolved Silver (Ag)	ug/L	<2.0	2.0	<0.020	0.020	7427945
Dissolved Strontium (Sr)	ug/L	2390	100	611	1.0	7427945
Dissolved Thallium (Tl)	ug/L	20.3	5.0	<0.050	0.050	7427945
Dissolved Tin (Sn)	ug/L	<500	500	<5.0	5.0	7427945
Dissolved Titanium (Ti)	ug/L	<500	500	<5.0	5.0	7427945
Dissolved Uranium (U)	ug/L	426	10	2.47	0.10	7427945
Dissolved Vanadium (V)	ug/L	<500	500	<5.0	5.0	7427945
Dissolved Zinc (Zn)	ug/L	3350000	500	1050	5.0	7427945
Dissolved Zirconium (Zr)	ug/L	<50	50	<0.50	0.50	7427945
Dissolved Calcium (Ca)	mg/L	479	5.0	111	0.050	7425623
Dissolved Magnesium (Mg)	mg/L	4180	5.0	44.2	0.050	7425623
Dissolved Potassium (K)	mg/L	10.3	5.0	4.03	0.050	7425623
Dissolved Sodium (Na)	mg/L	49.7	5.0	10.1	0.050	7425623
Dissolved Sulphur (S)	mg/L	8780	300	102	3.0	7425623

RDL = Reportable Detection Limit

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		JC8140		JC8141		
Sampling Date		2014/03/20 13:45		2014/03/14 13:10		
COC#		08391048		08391048		
	UNITS	**PW-14-06**	**RDL**	**PW-14-07**	**RDL**	**QC Batch**
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	67700	240	3000	3.0	7431507
Total Antimony (Sb)	ug/L	<40	40	<0.50	0.50	7431507
Total Arsenic (As)	ug/L	42.8	8.0	3.72	0.10	7431507
Total Barium (Ba)	ug/L	<80	80	125	1.0	7431507
Total Beryllium (Be)	ug/L	30.9	8.0	0.86	0.10	7431507
Total Bismuth (Bi)	ug/L	<80	80	<1.0	1.0	7431507
Total Boron (B)	ug/L	<4000	4000	<50	50	7431507
Total Cadmium (Cd)	ug/L	2930	0.80	0.415	0.010	7431507
Total Chromium (Cr)	ug/L	<80	80	7.3	1.0	7431507
Total Cobalt (Co)	ug/L	6930	40	9.55	0.50	7431507
Total Copper (Cu)	ug/L	158	40	9.02	0.50	7431507
Total Iron (Fe)	ug/L	419000	800	23700	10	7431507
Total Lead (Pb)	ug/L	1980	16	5.61	0.20	7431507
Total Lithium (Li)	ug/L	737	400	48.7	5.0	7431507
Total Manganese (Mn)	ug/L	499000	80	1170	1.0	7431507
Total Molybdenum (Mo)	ug/L	<80	80	2.4	1.0	7431507
Total Nickel (Ni)	ug/L	11000	80	25.6	1.0	7431507
Total Selenium (Se)	ug/L	<8.0	8.0	0.24	0.10	7431507
Total Silicon (Si)	ug/L	18600	8000	15900	100	7431507
Total Silver (Ag)	ug/L	1.9	1.6	0.045	0.020	7431507
Total Strontium (Sr)	ug/L	2390	80	566	1.0	7431507
Total Thallium (Tl)	ug/L	16.5	4.0	0.071	0.050	7431507
Total Tin (Sn)	ug/L	<400	400	<5.0	5.0	7431507
Total Titanium (Ti)	ug/L	<400	400	111	5.0	7431507
Total Uranium (U)	ug/L	371	8.0	2.48	0.10	7431507
Total Vanadium (V)	ug/L	<400	400	7.4	5.0	7431507
Total Zinc (Zn)	ug/L	3180000	400	1060	5.0	7431507
Total Zirconium (Zr)	ug/L	<40	40	1.26	0.50	7431507
Total Calcium (Ca)	mg/L	455	4.0	112	0.050	7426218
Total Magnesium (Mg)	mg/L	3690	4.0	43.3	0.050	7426218
Total Potassium (K)	mg/L	9.5	4.0	4.29	0.050	7426218
Total Sodium (Na)	mg/L	42.8	4.0	9.76	0.050	7426218
Total Sulphur (S)	mg/L	8060	240	90.2	3.0	7426218

RDL = Reportable Detection Limit

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER) Comments

Sample	JC8140-03 Elements by CRC ICPMS (dissolved): RDL raised due to sample matrix interference.
Sample	JC8140-02 Elements by CRC ICPMS (total): Detection limits raised due to matrix interference.

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	**Parameter**	**Date**	**% Recovery**	**QC Limits**	**% Recovery**	**QC Limits**	**Value**	**UNITS**	**Value (%)**	**QC Limits**
7426407	Acidity (pH 8.3)	2014/03/24			98	80 - 120	<0.50	mg/L	0.1(1)	20
7426407	Acidity (pH 4.5)	2014/03/24					<0.50	mg/L	1.0	20
7426892	Alkalinity (Total as CaCO3)	2014/03/25	NC	80 - 120	99	80 - 120	<0.50	mg/L	NC	20
7426892	Alkalinity (PP as CaCO3)	2014/03/25					<0.50	mg/L	NC	20
7426892	Bicarbonate (HCO3)	2014/03/25					<0.50	mg/L	NC	20
7426892	Carbonate (CO3)	2014/03/25					<0.50	mg/L	NC	20
7426892	Hydroxide (OH)	2014/03/25					<0.50	mg/L	NC	20
7426894	Conductivity	2014/03/25			99	80 - 120	<1.0	uS/cm	NC	20
7427945	Dissolved Aluminum (Al)	2014/03/26	104	80 - 120	107	80 - 120	<3.0	ug/L	NC	20
7427945	Dissolved Antimony (Sb)	2014/03/26	104	80 - 120	106	80 - 120	<0.50	ug/L	NC	20
7427945	Dissolved Arsenic (As)	2014/03/26	NC	80 - 120	102	80 - 120	<0.10	ug/L	4.3	20
7427945	Dissolved Barium (Ba)	2014/03/26	NC	80 - 120	104	80 - 120	<1.0	ug/L	3.1	20
7427945	Dissolved Beryllium (Be)	2014/03/26	106	80 - 120	108	80 - 120	<0.10	ug/L	NC	20
7427945	Dissolved Bismuth (Bi)	2014/03/26	94	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
7427945	Dissolved Cadmium (Cd)	2014/03/26	97	80 - 120	104	80 - 120	<0.010	ug/L	NC	20
7427945	Dissolved Chromium (Cr)	2014/03/26	96	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7427945	Dissolved Cobalt (Co)	2014/03/26	93	80 - 120	104	80 - 120	<0.50	ug/L	NC	20
7427945	Dissolved Copper (Cu)	2014/03/26	94	80 - 120	106	80 - 120	<0.20	ug/L	NC	20
7427945	Dissolved Iron (Fe)	2014/03/26	NC	80 - 120	109	80 - 120	<5.0	ug/L	0.7	20
7427945	Dissolved Lead (Pb)	2014/03/26	98	80 - 120	100	80 - 120	<0.20	ug/L	NC	20
7427945	Dissolved Lithium (Li)	2014/03/26	NC	80 - 120	109	80 - 120	<5.0	ug/L	6.5	20
7427945	Dissolved Manganese (Mn)	2014/03/26	NC	80 - 120	103	80 - 120	<1.0	ug/L	0.4	20
7427945	Dissolved Molybdenum (Mo)	2014/03/26	NC	80 - 120	106	80 - 120	<1.0	ug/L	2.4	20
7427945	Dissolved Nickel (Ni)	2014/03/26	98	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
7427945	Dissolved Selenium (Se)	2014/03/26	106	80 - 120	107	80 - 120	<0.10	ug/L	NC	20
7427945	Dissolved Silver (Ag)	2014/03/26	99	80 - 120	98	80 - 120	<0.020	ug/L	NC	20
7427945	Dissolved Strontium (Sr)	2014/03/26	NC	80 - 120	100	80 - 120	<1.0	ug/L	5.6	20
7427945	Dissolved Thallium (Tl)	2014/03/26	100	80 - 120	102	80 - 120	<0.050	ug/L	NC	20
7427945	Dissolved Tin (Sn)	2014/03/26	105	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
7427945	Dissolved Titanium (Ti)	2014/03/26	99	80 - 120	105	80 - 120	<5.0	ug/L	NC	20
7427945	Dissolved Uranium (U)	2014/03/26	105	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
7427945	Dissolved Vanadium (V)	2014/03/26	103	80 - 120	101	80 - 120	<5.0	ug/L	NC	20
7427945	Dissolved Zinc (Zn)	2014/03/26	93	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
7427945	Dissolved Boron (B)	2014/03/26					<50	ug/L	5.6	20
7427945	Dissolved Silicon (Si)	2014/03/26					<100	ug/L	0.3	20
7427945	Dissolved Zirconium (Zr)	2014/03/26					<0.50	ug/L	NC	20
7428206	Dissolved Chloride (Cl)	2014/03/25	NC	80 - 120	104	80 - 120	<0.50	mg/L	NC	20
7430706	Total Mercury (Hg)	2014/03/27	84	80 - 120	88	80 - 120	<0.010	ug/L	NC	20
7431290	Dissolved Mercury (Hg)	2014/03/27	104	80 - 120	99	80 - 120	<0.010	ug/L	NC	20
7431507	Total Aluminum (Al)	2014/03/29	97	80 - 120	105	80 - 120	<3.0	ug/L	NC	20

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
7431507	Total Antimony (Sb)	2014/03/29	94	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
7431507	Total Arsenic (As)	2014/03/29	103	80 - 120	101	80 - 120	<0.10	ug/L	4.8	20
7431507	Total Barium (Ba)	2014/03/29	NC	80 - 120	97	80 - 120	<1.0	ug/L	6.7	20
7431507	Total Beryllium (Be)	2014/03/29	100	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
7431507	Total Bismuth (Bi)	2014/03/29	96	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7431507	Total Cadmium (Cd)	2014/03/29	100	80 - 120	98	80 - 120	<0.010	ug/L	NC	20
7431507	Total Chromium (Cr)	2014/03/29	100	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
7431507	Total Cobalt (Co)	2014/03/29	94	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7431507	Total Copper (Cu)	2014/03/29	99	80 - 120	104	80 - 120	<0.50	ug/L	NC	20
7431507	Total Iron (Fe)	2014/03/29	NC	80 - 120	122 (2, 3)	80 - 120	<10	ug/L	NC	20
7431507	Total Lead (Pb)	2014/03/29	93	80 - 120	96	80 - 120	<0.20	ug/L	74.4 (2)	20
7431507	Total Lithium (Li)	2014/03/29	96	80 - 120	104	80 - 120	<5.0	ug/L	NC	20
7431507	Total Manganese (Mn)	2014/03/29	NC	80 - 120	94	80 - 120	<1.0	ug/L	7.0	20
7431507	Total Molybdenum (Mo)	2014/03/29	NC	80 - 120	89	80 - 120	<1.0	ug/L	NC	20
7431507	Total Nickel (Ni)	2014/03/29	95	80 - 120	107	80 - 120	<1.0	ug/L	NC	20
7431507	Total Selenium (Se)	2014/03/29	100	80 - 120	107	80 - 120	<0.10	ug/L	16.1	20
7431507	Total Silver (Ag)	2014/03/29	79 (2)	80 - 120	84	80 - 120	<0.020	ug/L	NC	20
7431507	Total Strontium (Sr)	2014/03/29	NC	80 - 120	94	80 - 120	<1.0	ug/L	5.1	20
7431507	Total Thallium (Tl)	2014/03/29	94	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
7431507	Total Tin (Sn)	2014/03/29	90	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
7431507	Total Titanium (Ti)	2014/03/29	105	80 - 120	106	80 - 120	<5.0	ug/L	NC	20
7431507	Total Uranium (U)	2014/03/29	94	80 - 120	92	80 - 120	<0.10	ug/L	7.2	20
7431507	Total Vanadium (V)	2014/03/29	94	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
7431507	Total Zinc (Zn)	2014/03/29	NC	80 - 120	129 (2, 3)	80 - 120	<5.0	ug/L	4.9	20
7431507	Total Boron (B)	2014/03/29					<50	ug/L	NC	20
7431507	Total Silicon (Si)	2014/03/29					<100	ug/L	14.5	20
7431507	Total Zirconium (Zr)	2014/03/29					<0.50	ug/L	NC	20

N/A = Not Applicable

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) - RDL raised due to sample dilution.

(2) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

(3) - Blank Spike outside acceptance criteria (10% of analytes failure allowed).

Validation Signature Page

Maxxam Job #: B423161

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Rob Reinert, Data Validation Coordinator

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

APPENDIX E

Geochemical Lab Analyses of Waste Rock Samples

CLIENT **: Robertson GeoConsultants**
PROJECT **: Faro Winter Drill Program (Project 118024)**
SGS Project # **: 1415**
TEST **: Modified Acid-Base Accounting**
Date **: March 27, 2014**

Sample ID	**Rinse pH**	**Rinse EC µS/cm**	**Paste pH**	**S(T) %**	**S(SO4) %**	**S(S-2) %**	**AP**	**NP**	**Net NP**	**Fizz Test**
Method Code	Sobek	Sobek	Sobek	CSA06V	CSA07V	Calc.	Calc.	Modified	Calc.	Sobek
LOD	0.20	1	0.20	0.01	0.01	#N/A	#N/A	0.5	#N/A	#N/A
BH1 - 8	7.76	1103	7.49	0.44	0.05	0.39	12.2	16.7	4.5	Slight
BH1 - 20	7.44	1860	7.46	0.87	0.11	0.76	23.8	24.4	0.6	Slight
BH1 - 20d	7.58	1675	7.48	0.87	0.12	0.75	23.4	23.5	0.1	Slight
BH1 - 32	8.66	361	8.25	0.35	<0.01	0.35	10.9	63.3	52.4	Slight
BH1 - 53	8.04	81.1	8.26	0.1	<0.01	0.1	3.1	24.5	21.4	Slight
BH2 - 19	7.34	1244	7.33	0.58	0.12	0.46	14.4	11.5	-2.9	None
BH2 - 45	8.85	387	8.39	0.32	<0.01	0.32	10.0	41.4	31.4	Slight
BH3 - 4	6.97	935	7.18	3.36	0.04	3.32	103.8	17.4	-86.4	Slight
BH3 -10	4.34	3390	4.89	3.21	0.38	2.83	88.4	3.6	-84.8	Slight
BH3 - 16	6.46	2550	6.97	3.53	0.19	3.34	104.4	15.2	-89.2	Slight
BH3 - 20	6.85	2710	7.01	2.21	0.13	2.08	65.0	16.7	-48.3	Slight
BH3 - 25	7.37	1167	7.26	0.66	0.06	0.6	18.8	12.6	-6.2	None
BH3 - 28	6.90	1184	7.05	1.09	0.07	1.02	31.9	10.5	-21.4	Slight
BH3 - 34	4.33	2940	4.77	2.55	0.25	2.3	71.9	4.6	-67.3	None
BH3 - 34d	4.36	3300	4.78	2.45	0.25	2.2	68.8	4.1	-64.7	None
BH4 - 8	7.22	1728	7.35	0.59	0.11	0.48	15.0	21.6	6.6	Slight
BH4 - 16	4.13	1684	5.42	4.99	0.29	4.7	146.9	4.0	-142.9	None
BH4 - 20	3.61	7030	4.30	7.2	0.59	6.61	206.6	-3.5	-210.1	None
BH4 - 30	5.05	1980	5.78	8.28	0.14	8.14	254.4	4.5	-249.9	Slight
BH4 - 41	4.00	6880	4.71	2.69	0.38	2.31	72.2	-3.8	-76.0	None
BH5 - 6	7.86	2150	7.31	1.02	0.13	0.89	27.8	20.4	-7.4	Slight
BH5 - 12	7.90	1990	7.32	0.93	0.16	0.77	24.1	17.8	-6.3	Slight
BH5 - 20	4.08	1730	4.60	3.41	0.43	2.98	93.1	-0.5	-93.6	None
BH5 - 27	4.46	1445	5.75	0.69	0.13	0.56	17.5	3.8	-13.7	None
BH5 - 35	6.54	541	6.54	0.57	0.16	0.41	12.8	2.8	-10.0	None
BH6 - 7	7.28	536	6.83	2.82	0.04	2.78	86.9	14.0	-72.9	Slight
BH6 - 11	5.64	2880	5.24	2.58	0.22	2.36	73.8	31.4	-42.4	None
BH6 - 22	5.29	3510	5.18	1.95	0.32	1.63	50.9	7.1	-43.8	None
BH6 - 22d	5.13	3430	5.18	2.02	0.35	1.67	52.2	7.2	-45.0	None
BH6 - 33	8.10	2960	7.43	1.2	0.2	1	31.3	15.4	-15.9	Slight
BH6 - 40	7.26	2010	7.08	2.87	0.23	2.64	82.5	15.9	-66.6	Slight
BH7 - 10	8.08	938	7.79	0.46	0.05	0.41	12.8	49.8	37.0	Moderate
BH7 - 18	8.29	1022	7.66	0.47	0.03	0.44	13.8	76.3	62.6	Moderate
BH7 - 30	7.65	2070	7.64	1.59	0.11	1.48	46.3	13.3	-33.0	Slight
BH7 - 35	7.75	1342	7.47	0.86	0.06	0.8	25.0	15.9	-9.1	Slight
Duplicates										
BH1 - 8			7.55					16.6		Slight
BH1 - 20				0.88						
BH4 - 16					0.32					
BH4 - 41	3.98	7120	4.72					-3.1		None
BH5 - 6			7.40					19.4		Slight
BH7 - 10					0.05					
BH7 - 30				1.65						
BH7 - 35	7.85	1425								

CLIENT **: Robertson GeoConsultants**
PROJECT **: Faro Winter Drill Program (Project 118024)**
SGS Project # **: 1415**
Test **: Metals by Aqua Regia Digestion with ICP-MS Finish**
Date **: April 7, 2014**

Sample ID	**Ag ppm**	**Al %**	**B ppm**	**Ba ppm**	**Ca %**	**Cr ppm**	**Cu ppm**	**Fe %**	**K %**	**Li ppm**	**Mg %**	**Mn ppm**	**Na %**	**Ni ppm**	**P %**	**S %**	**Sr ppm**	**Ti %**	**V ppm**	**Zn ppm**
Method Code	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B	ICM14B
LOD	0.01	0.01	10	5	0.01	1	0.5	0.01	0.01	1	0.01	2	0.01	0.5	0.005	0.01	0.5	0.01	1	1
BH1 - 8	1.94	2.13	30	657	1	129	208	4.82	0.31	40	1.4	877	0.09	54.7	0.063	0.46	58.6	0.04	51	1930
BH1 - 20	0.78	2.26	20	584	1.27	130	73.9	5.36	0.35	47	1.43	793	0.07	70.2	0.06	0.88	45.5	0.04	56	585
BH1 - 20d	0.8	2.25	20	510	1.26	129	72.7	5.29	0.35	46	1.41	781	0.07	69.2	0.06	0.87	45.3	0.04	55	624
BH1 - 32	1.1	2.49	20	421	2.77	144	64.1	4.37	0.38	50	1.52	798	0.12	56.9	0.064	0.37	92.6	0.05	62	600
BH1 - 53	1.76	3.04	30	143	2.26	140	59.3	2.84	0.21	36	1.18	500	0.22	38.6	0.048	0.11	137	0.12	42	726
BH2 - 19	2.32	2.46	20	802	0.84	154	133	5	0.54	49	1.53	758	0.08	103	0.071	0.55	46.3	0.08	79	1170
BH2 - 45	0.86	2.6	30	413	2.13	142	66.1	4.01	0.35	48	1.42	666	0.15	53	0.063	0.35	87	0.06	61	597
BH3 - 4	6.88	2.14	30	162	0.89	131	282	8.01	0.34	45	1.21	765	0.08	43.7	0.059	3.29	44.3	0.04	49	6650
BH3 -10	5.87	1.48	20	137	0.33	133	183	7.1	0.34	30	0.99	446	0.02	46	0.054	3.32	14.5	0.03	41	3310
BH3 - 16	2.48	1.95	20	122	0.62	148	271	8.35	0.36	40	1.58	810	0.02	84.4	0.051	3.34	24	0.03	60	1610
BH3 - 20	3.02	1.27	20	165	0.57	140	225	7.08	0.4	29	1.17	632	0.02	63	0.047	2.03	23.3	0.03	40	2310
BH3 - 25	1.73	1.47	20	154	0.37	116	123	6.48	0.38	33	1.26	828	0.02	54.7	0.047	0.67	16.2	0.03	46	584
BH3 - 28	1.96	1.75	20	199	0.41	123	159	6.17	0.55	40	1.19	639	0.02	52.5	0.049	1.06	17.5	0.05	44	1250
BH3 - 34	8.38	0.87	30	245	0.31	142	220	5.52	0.24	14	0.55	530	0.01	44.2	0.077	2.4	25.3	0.02	37	8000
BH3 - 34d	7.86	0.85	20	256	0.3	147	227	5.29	0.23	13	0.54	514	0.01	41.7	0.074	2.26	25	0.02	37	7820
BH4 - 8	0.39	1.79	20	345	0.8	158	61.1	5.51	0.34	37	1.54	632	0.04	83.1	0.059	0.6	24.5	0.02	51	269
BH4 - 16	4.92	1.75	30	101	0.27	165	173	8.8	0.64	27	0.81	364	0.03	36.3	0.07	4.36	28.8	0.05	44	6590
BH4 - 20	22.8	0.69	20	86	0.24	102	606	10.9	0.14	5	0.3	732	0.01	48	0.079	>5	59.2	<0.01	52	>10000
BH4 - 30	16	1.43	20	71	0.31	124	456	10.6	0.42	23	0.65	848	0.02	42.4	0.07	>5	20.5	0.04	41	>10000
BH4 - 41	5.34	1.4	20	132	0.25	140	181	5.62	0.33	20	0.74	602	0.03	46.3	0.054	2.56	20.3	0.04	37	6800
BH5 - 6	1.16	1.8	20	298	0.69	133	171	5.93	0.37	45	1.27	627	0.02	54.6	0.062	1.06	23.1	0.03	48	972
BH5 - 12	0.83	1.56	20	395	0.75	110	77.5	5.56	0.26	39	1.33	536	0.02	67.1	0.066	0.94	22.2	0.02	46	943
BH5 - 20	0.55	1.46	20	501	0.39	94	89.5	5.73	0.39	19	0.56	328	0.04	29.4	0.056	0.68	27.2	0.03	47	869
BH5 - 27	11.7	1.67	20	124	0.2	117	325	7.04	0.47	28	0.76	450	0.02	42.2	0.052	3.3	23.8	0.05	43	8510
BH5 - 35	1.19	1.74	20	645	0.19	98	172	7.39	0.51	25	0.68	368	0.03	36.4	0.067	0.57	28.5	0.04	44	1490
BH6 - 7	2.3	0.79	20	156	0.41	106	354	7.69	0.36	17	0.73	576	0.02	31.2	0.041	2.65	15.2	0.03	36	3050
BH6 - 11	2.8	1.56	50	144	0.3	100	196	7.65	0.46	37	0.98	672	0.02	42.9	0.048	2.51	10.3	0.04	38	4600
BH6 - 22	2.64	0.59	30	197	0.26	93	253	6.34	0.24	11	0.61	983	0.01	42	0.043	1.83	18.6	0.01	20	2540
BH6 - 22d	2.87	0.55	20	211	0.28	96	259	6.77	0.24	10	0.61	1000	0.01	44.1	0.045	1.94	19	<0.01	20	2760
BH6 - 33	0.57	2.3	20	242	0.79	146	88.9	5.38	0.5	47	1.86	477	0.03	80.8	0.066	1.16	26.6	0.05	69	760
BH6 - 40	4.35	1.69	20	167	0.77	138	264	6.31	0.39	33	1.15	565	0.03	64.6	0.063	2.79	26.1	0.04	49	5830
BH7 - 10	0.68	2.85	30	640	2.66	139	113	4.31	0.38	55	1.56	743	0.11	54.2	0.061	0.45	101	0.08	72	762
BH7 - 18	3.39	2.34	20	461	3.72	147	101	4.51	0.24	38	1.42	795	0.12	51.2	0.057	0.49	90.9	0.08	54	712
BH7 - 30	4.84	1.52	20	247	0.55	125	221	6.81	0.29	32	1.23	759	0.02	57	0.053	1.57	23.4	0.02	40	3350
BH7 - 35	2.01	1.86	30	337	0.65	135	120	5.8	0.35	37	1.28	704	0.03	55.3	0.052	0.84	28.8	0.03	46	1650
Duplicates																				
BH3 - 25	1.66	1.44	20	151	0.36	111	118	6.28	0.37	33	1.23	807	0.02	51.9	0.046	0.62	15.7	0.03	45	591
BH6 - 22d	2.77	0.55	20	210	0.28	94	254	6.78	0.24	10	0.6	1000	0.01	42.6	0.044	1.97	19	<0.01	20	2740

CLIENT : **Robertson GeoConsultants**
PROJECT : **Faro Winter Drill Program (Project 118024)**
SGS Project # : **1415**
Test : **24 Hour Nanopure Water Leach Extraction Test at 3:1 Liquid to Solid Ratio**
Date : **March 31 - April 4, 2014**

Leachate Analysis

Sample ID			**BH1 - 8**	**BH1 - 20**	**BH1 - 20d**	**BH1 - 32**	**BH1 - 53**	**BH2 - 19**	**BH2 - 45**	**BH3 - 4**
Parameter	**Method**	**Units**								
Volume Nanopure Water		mL	750	750	750	750	750	750	750	750
Sample Weight		g	250	250	250	250	250	250	250	250
pH	meter		7.57	7.63	7.72	8.39	7.91	7.54	8.53	7.79
Redox	meter	mV	#N/A	368	345	316	338	345	303	347
Conductivity	meter	uS/cm	692	1428	1338	360	108	1216	296	395
Acidity (to pH 4.5)	titration	ng CaCO3/l	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Acidity (to pH 8	titration	ng CaCO3/l	4.3	5.0	4.7	#N/A	2.4	4.7	#N/A	3.0
Alkalinity	titration	ng CaCO3/l	40.5	36.0	37.1	84.1	38.5	37.8	85.3	40.2
Chloride		mg/L	3.3	2.2	2.0	0.4	1.7	1.6	1.0	0.3
Fluoride		mg/L	1.70	1.60	1.90	0.39	2.20	1.90	0.58	0.41
Sulphate	Turbidity	mg/L	230	600	560	57	8	466	40	122
Ion Balance										
Major Anions	Calc	meq/L	5.78	13.37	12.57	2.90	1.10	10.61	2.60	3.38
Major Cations	Calc	meq/L	6.68	15.47	14.38	3.36	1.05	12.51	2.84	3.59
Difference	Calc	meq/L	-0.90	-2.10	-1.81	-0.46	0.05	-1.90	-0.24	-0.21
Balance (%)	Calc	%	-7.2%	-7.3%	-6.7%	-7.3%	2.4%	-8.2%	-4.5%	-3.0%
Dissolved Metals										
Hardness CaCO3		mg/L	263	616	574	26.0	36.4	527	15.5	106
Aluminum Al	ICP-MS	mg/L	0.0148	0.0116	0.0114	0.132	0.0722	0.0079	0.202	0.0108
Antimony Sb	ICP-MS	mg/L	0.0003	< 0.0002	< 0.0002	0.0009	0.0003	0.0002	0.0013	0.0006
Arsenic As	ICP-MS	mg/L	< 0.0002	0.0003	0.0003	0.0011	0.0012	0.0002	0.0045	0.0002
Barium Ba	ICP-MS	mg/L	0.0247	0.0201	0.0206	0.0802	0.0254	0.0224	0.0887	0.0365
Beryllium Be	ICP-MS	mg/L	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
Bismuth Bi	ICP-MS	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Boron B	ICP-MS	mg/L	0.0108	0.0066	0.0087	0.0139	0.0080	0.0114	0.0139	0.0057
Cadmium Cd	ICP-MS	mg/L	0.000227	0.000159	0.000160	< 0.000003	< 0.000003	0.000434	< 0.000003	0.000184
Calcium Ca	ICP-MS	mg/L	56.5	146	136	4.88	9.81	122	3.19	19.9
Chromium Cr	ICP-MS	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cobalt Co	ICP-MS	mg/L	0.000195	0.000452	0.000361	0.000033	0.000055	0.000668	0.000051	0.000798
Copper Cu	ICP-MS	mg/L	0.0009	0.0009	0.0009	< 0.0005	0.0007	0.0010	< 0.0005	0.0006
Iron Fe	ICP-MS	mg/L	< 0.003	< 0.003	0.004	0.044	0.005	< 0.003	0.046	< 0.003
Lead Pb	ICP-MS	mg/L	0.00179	0.00025	0.00025	0.00064	0.00058	0.00087	0.00072	0.0149
Lithium Li	ICP-MS	mg/L	0.034	0.046	0.042	0.010	0.006	0.054	0.008	0.019
Magnesium Mg	ICP-MS	mg/L	29.5	60.9	57.1	3.36	2.90	54.1	1.83	13.5
Manganese Mn	ICP-MS	mg/L	0.0208	0.0556	0.0543	0.0031	0.0117	0.102	0.0024	0.0858
Mercury Hg	ICP-MS	ug/L	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Molybdenum Mo	ICP-MS	mg/L	0.00221	0.00203	0.00200	0.00586	0.00222	0.00455	0.0125	0.00059
Nickel Ni	ICP-MS	mg/L	0.0017	0.0029	0.0027	0.0002	0.0005	0.0054	0.0002	0.0016
Phosphorus P	ICP-MS	mg/L	0.014	0.012	0.030	0.017	0.010	0.016	< 0.009	0.016
Potassium K	ICP-MS	mg/L	16.1	26.2	24.4	5.50	1.98	23.0	4.10	6.13
Selenium Se	ICP-MS	mg/L	0.00336	0.00533	0.00483	0.0118	0.00050	0.0103	0.00276	0.00038
Silicon Si	ICP-MS	mg/L	1.32	1.51	1.45	1.91	2.27	1.84	2.24	0.65
Silver Ag	ICP-MS	mg/L	0.00001	0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Sodium Na	ICP-MS	mg/L	23.4	57.3	51.9	61.6	6.03	31.4	55.3	30.4
Strontium Sr	ICP-MS	mg/L	0.264	0.426	0.401	0.126	0.0577	0.390	0.0744	0.204
Sulphur (S)	ICP-MS	mg/L	99.1	254	234	27.6	3.57	195	20.1	49.0
Thallium Tl	ICP-MS	mg/L	0.00020	0.00020	0.00018	0.00006	< 0.00002	0.00040	0.00004	0.00062
Tin Sn	ICP-MS	mg/L	0.00002	0.00003	0.00005	0.00006	0.00003	0.00003	0.00078	0.00003
Titanium Ti	ICP-MS	mg/L	< 0.0001	< 0.0001	< 0.0001	0.0009	< 0.0001	0.0002	0.0011	< 0.0001
Uranium U	ICP-MS	mg/L	0.000359	0.000857	0.000789	0.000675	0.000180	0.000629	0.000488	0.000073
Vanadium V	ICP-MS	mg/L	0.00004	0.00007	0.00007	0.00063	0.00109	0.00010	0.00258	< 0.00003
Zinc Zn	ICP-MS	mg/L	0.003	0.003	0.002	< 0.001	< 0.001	0.006	0.005	0.021
Zirconium Zr	ICP-MS	mg/L	0.00011	0.00006	0.00011	0.00012	< 0.00001	0.00006	0.00010	< 0.00001

CLIENT **: Robertson GeoConsultants**
PROJECT **: Faro Winter Drill Program (Project 118024)**
SGS Project # **: 1415**
Test **: 24 Hour Nanopure Water Leach Extraction Test at 3:1 Liquid to Solid Ratio**
Date **: March 31 - April 4, 2014**

Leachate Analysis

Sample ID	**BH3 -10**	**BH3 - 16**	**BH3 - 20**	**BH3 - 25**	**BH3 - 28**	**BH3 - 34**	**BH3 - 34d**	**BH4 - 8**	**BH4 - 16**	**BH4 - 20**
Parameter										
Volume Nanopure V	750	750	750	750	750	750	750	750	750	750
Sample Weight	250	250	250	250	250	250	250	250	250	250
pH	5.43	7.92	7.30	7.77	7.73	5.15	5.75	7.80	5.72	5.26
Redox	318	300	411	371	360	318	69	271	366	379
Conductivity	2672	2160	1658	860	961	2467	2395	1266	1042	3669
Acidity (to pH 4.5)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Acidity (to pH	196.9	6.3	9.1	8.1	6.7	478.7	428.5	6.9	25.1	959.0
Alkalinity	1.3	28.1	24.5	30.4	47.4	0.8	5.3	40.1	2.4	1.2
Chloride	< 2	< 2	< 2	0.6	0.8	< 2	< 2	< 2	0.8	2.2
Fluoride	1.50	1.30	1.34	1.43	1.55	1.50	1.13	1.13	0.11	0.17
Sulphate	1544	1248	860	362	349	1389	1513	576	454	2272
Ion Balance										
Major Anions	32.27	26.63	18.48	8.24	8.32	29.03	31.69	12.86	9.53	47.43
Major Cations	35.41	27.31	18.72	8.80	9.69	33.48	34.14	14.01	10.73	54.30
Difference	-3.13	-0.68	-0.24	-0.55	-1.37	-4.45	-2.46	-1.15	-1.20	-6.88
Balance (%)	-4.6%	-1.3%	-0.6%	-3.3%	-7.6%	-7.1%	-3.7%	-4.3%	-5.9%	-6.8%
Dissolved Metals										
Hardness CaCO3	1530	1310	893	403	432	1040	1120	652	495	1590
Aluminum Al	0.400	0.0124	0.0046	0.0113	0.0136	0.792	0.864	0.0093	0.136	0.469
Antimony Sb	< 0.0002	0.0004	< 0.0002	< 0.0002	0.0004	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Arsenic As	0.0024	0.0004	< 0.0002	< 0.0002	0.0005	0.0054	0.0049	0.0018	0.0020	0.0049
Barium Ba	0.0197	0.0289	0.0363	0.0339	0.0305	0.0253	0.0238	0.0230	0.0206	0.0137
Beryllium Be	0.00195	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00124	0.00134	< 0.00002	0.00043	0.00320
Bismuth Bi	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Boron B	0.0111	0.0131	0.0094	0.0082	0.0159	0.0093	0.0093	0.0056	0.0068	0.0047
Cadmium Cd	0.142	0.00104	0.00212	0.000262	0.000013	0.110	0.114	0.000082	0.0189	1.48
Calcium Ca	232	252	198	80.6	76.4	143	141	121	95.5	205
Chromium Cr	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Cobalt Co	0.661	0.00282	0.00981	0.000677	0.000892	0.553	0.541	0.00055	0.0467	1.37
Copper Cu	0.0124	0.0017	0.0014	0.0006	0.0006	0.0037	0.0032	0.0008	0.0059	0.0315
Iron Fe	20.3	0.008	< 0.003	< 0.003	< 0.003	117	105	0.003	1.66	40.8
Lead Pb	1.10	0.00483	0.0148	0.00051	0.00045	0.775	0.882	0.00024	1.72	1.76
Lithium Li	0.178	0.075	0.058	0.035	0.052	0.086	0.081	0.039	0.048	0.066
Magnesium Mg	230	166	96.7	49.1	58.6	166	188	85.4	62.3	262
Manganese Mn	18.9	0.374	0.466	0.0459	0.254	27.3	26.4	0.0343	1.88	62.5
Mercury Hg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Molybdenum Mo	0.00013	0.00049	0.00035	0.00081	0.00197	0.00014	0.00011	0.00246	0.00003	0.00031
Nickel Ni	0.905	0.0121	0.0159	0.0028	0.0060	0.915	0.867	0.0064	0.0855	1.60
Phosphorus P	0.032	0.018	0.009	0.011	< 0.009	0.032	0.022	0.012	0.015	0.044
Potassium K	6.82	27.5	23.9	20.6	30.4	24.4	24.2	23.3	11.3	9.98
Selenium Se	0.00277	0.00891	0.00356	0.00435	0.00199	0.00138	0.00129	0.00092	0.00600	0.00195
Silicon Si	1.79	1.05	0.92	1.05	1.57	2.80	2.46	0.88	3.16	2.52
Silver Ag	0.00011	0.00005	0.00022	< 0.00001	< 0.00001	0.00017	0.00015	< 0.00001	< 0.00001	0.00068
Sodium Na	2.86	7.82	5.25	4.50	5.94	2.71	2.68	7.84	4.21	2.66
Strontium Sr	0.341	0.744	0.928	0.463	0.532	0.200	0.183	0.319	0.183	0.0360
Sulphur (S)	591	454	330	140	154	491	543	234	180	861
Thallium Tl	0.00087	0.00151	0.00095	0.00035	0.00010	0.00284	0.00294	0.00044	0.00163	0.0141
Tin Sn	0.00012	0.00004	0.00004	0.00003	< 0.00001	0.00003	0.00004	0.00002	0.00002	0.00006
Titanium Ti	0.0002	< 0.0001	0.0002	0.0002	0.0002	0.0003	0.0003	0.0001	0.0003	0.0002
Uranium U	0.00646	0.000289	0.000231	0.000271	0.000454	0.00475	0.00656	0.000839	0.000215	0.0319
Vanadium V	0.00012	0.00004	0.00003	< 0.00003	0.00006	< 0.00003	< 0.00003	0.00004	< 0.00003	< 0.00003
Zinc Zn	88.2	0.032	0.206	0.004	0.003	147	135	0.002	5.61	572
Zirconium Zr	0.00001	0.00003	0.00007	0.00005	0.00005	0.00003	0.00003	0.00003	< 0.00001	0.00003

CLIENT : **Robertson GeoConsultants**
PROJECT : **Faro Winter Drill Program (Project 118024)**
SGS Project # : **1415**
Test : **24 Hour Nanopure Water Leach Extraction Test at 3:1 Liquid to Solid Ratio**
Date : **March 31 - April 4, 2014**

Leachate Analysis

Sample ID	**BH4 - 30**	**BH4 - 41**	**BH5 - 6**	**BH5 - 12**	**BH5 - 20**	**BH5 - 27**	**BH5 - 35**	**BH6 - 7**	**BH6 - 11**
Parameter									
Volume Nanopure Wat	750	750	750	750	750	750	750	750	750
Sample Weight	250	250	250	250	250	250	250	250	250
pH	7.54	4.80	8.02	7.81	4.68	6.95	6.69	7.89	6.19
Redox	315	436	309	344	431	316	444	384	334
Conductivity	1149	3628	1675	1554	1325	1131	364	489	2200
Acidity (to pH 4.5)	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Acidity (to pH 8.3	32.9	549.6	10.8	11.3	54.7	18.9	8.7	10.4	288.0
Alkalinity	25.6	0.2	46.9	36.7	<0.01	6.6	8.5	36.9	6.9
Chloride	4.6	< 2	11	4.5	3.2	1.5	0.9	0.3	< 2
Fluoride	0.26	1.73	1.29	0.89	0.97	0.25	0.65	1.02	0.14
Sulphate	478	2304	851	817	621	469	124	153	1204
Ion Balance									
Major Anions	10.61	48.10	19.05	17.93	13.08	9.96	2.81	3.99	25.23
Major Cations	12.11	55.53	19.52	17.19	14.65	12.21	3.27	4.37	27.70
Difference	-1.49	-7.44	-0.48	0.74	-1.57	-2.25	-0.46	-0.38	-2.47
Balance (%)	-6.6%	-7.2%	-1.2%	2.1%	-5.7%	-10.2%	-7.5%	-4.6%	-4.7%
Dissolved Metals									
Hardness CaCO3	537	2000	922	818	656	559	146	195	1030
Aluminum Al	0.0024	7.66	0.0071	0.0063	3.62	0.0202	0.0034	0.0075	0.0061
Antimony Sb	0.0008	0.0007	0.0002	< 0.0002	< 0.0002	0.0016	0.0003	0.0008	< 0.0002
Arsenic As	0.0053	0.0070	0.0004	0.0002	0.0028	0.0011	< 0.0002	< 0.0002	0.0015
Barium Ba	0.0355	0.0366	0.0257	0.0274	0.0141	0.0235	0.0221	0.0301	0.0304
Beryllium Be	0.00012	0.00494	< 0.00002	< 0.00002	0.00613	0.00022	< 0.00001	< 0.00001	0.00044
Bismuth Bi	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Boron B	0.0060	0.0072	0.0064	0.0065	0.0086	0.0087	0.0061	0.0125	0.0074
Cadmium Cd	0.0696	0.636	0.000551	0.000910	0.0186	0.0963	0.000079	0.000271	0.311
Calcium Ca	155	96.5	191	164	198	109	38.5	33.7	164
Chromium Cr	< 0.0005	0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.00003	0.00011	< 0.00003
Cobalt Co	0.255	1.71	0.00148	0.00131	0.151	0.230	0.000888	0.00157	0.536
Copper Cu	0.0009	0.104	0.0009	0.0012	0.254	0.0043	0.00061	0.00066	0.00114
Iron Fe	0.058	2.38	0.002	0.003	4.39	0.306	0.004	0.005	2.88
Lead Pb	2.18	1.27	0.00201	0.00740	0.0562	2.11	0.00303	0.00059	1.01
Lithium Li	0.056	0.051	0.039	0.040	0.084	0.038	0.0146	0.0264	0.0957
Magnesium Mg	36.3	428	108	99.1	39.0	69.9	12.2	26.8	151
Manganese Mn	10.1	57.7	0.148	0.103	4.16	3.64	0.185	0.0973	24.1
Mercury Hg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Molybdenum Mo	0.00004	0.00019	0.00148	0.00167	0.00004	0.00002	0.00009	0.00082	0.00005
Nickel Ni	0.208	1.93	0.0054	0.0077	0.213	0.157	0.0024	0.0022	0.556
Phosphorus P	0.014	0.061	0.012	0.009	0.026	< 0.009	0.015	0.018	0.037
Potassium K	18.5	20.5	21.3	20.8	11.6	17.9	6.13	11.6	23.6
Selenium Se	0.00063	0.00108	0.00081	0.00111	0.00125	0.00121	0.00060	0.00044	0.00051
Silicon Si	2.18	3.17	0.97	0.91	4.65	3.70	2.33	1.01	1.80
Silver Ag	0.00001	0.00043	< 0.00001	< 0.00001	< 0.00001	0.00002	0.000009	0.000075	0.000141
Sodium Na	4.54	4.31	12.4	6.95	7.25	6.20	4.11	4.07	2.28
Strontium Sr	0.0944	0.199	0.523	0.344	0.232	0.159	0.132	0.121	0.136
Sulphur (S)	217	926	321	294	244	231	52.8	72.9	463
Thallium Tl	0.00764	0.00486	0.00072	0.00044	0.00122	0.00159	0.000040	0.00101	0.0118
Tin Sn	0.00002	0.00003	0.00005	0.00008	0.00002	0.00002	0.00006	0.00001	0.00003
Titanium Ti	0.0002	0.0004	0.0002	0.0002	0.0004	0.0003	0.00024	0.00014	0.00016
Uranium U	0.000231	0.00223	0.00104	0.000933	0.00360	0.000067	0.000008	0.000162	0.000330
Vanadium V	0.00003	0.00006	0.00004	< 0.00003	< 0.00003	< 0.00003	0.00002	0.00003	0.00002
Zinc Zn	10.0	377	0.045	0.058	4.64	3.35	0.007	0.031	173
Zirconium Zr	< 0.00001	0.00039	0.00003	0.00002	0.00001	0.00002	< 0.002	< 0.002	< 0.002

CLIENT : **Robertson GeoConsultants**
PROJECT : **Faro Winter Drill Program (Project 118024)**
SGS Project : **1415**
Test : **24 Hour Nanopure Water Leach Extraction Test at 3:1 Liquid to Solid Ratio**
Date : **March 31 - April 4, 2014**

Leachate Analysis

Sample ID	**BH6 - 22**	**BH6 - 22d**	**BH6 - 33**	**BH6 - 40**	**BH7 - 10**	**BH7 - 18**	**BH7 - 30**	**BH7 - 35**	**Blank**
Parameter									
Volume Nan	750	750	750	750	750	750	750	750	750
Sample Wei	250	250	250	250	250	250	250	250	250
pH	6.90	6.78	8.02	7.71	8.09	8.04	7.77	7.98	8.13
Redox	85	58	309	360	337	342	358	346	397
Conductivity	2730	2985	2169	2251	727	684	1508	992	<1
Acidity (to pH	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Total Acidity	204.7	241.1	11.2	13.6	10.8	12.0	10.4	10.8	4.0
Alkalinity	15.0	13.7	39.4	39.5	46.3	78.7	36.2	43.4	2.5
Chloride	< 2	< 2	< 2	< 2	1.8	2.6	0.5	0.8	< 0.2
Fluoride	0.18	0.19	1.19	0.69	1.35	1.21	1.07	0.99	< 0.06
Sulphate	1666	1807	1131	1170	246	180	783	405	3
Ion Balance									
Major Anions	35.02	37.93	24.41	25.20	6.17	5.46	17.11	9.38	#N/A
Major Cation	37.33	41.30	28.56	29.29	6.98	6.77	17.14	10.33	#N/A
Difference	-2.31	-3.37	-4.15	-4.09	-0.80	-1.31	-0.03	-0.95	#N/A
Balance (%)	-3.2%	-4.3%	-7.8%	-7.5%	-6.1%	-10.7%	-0.1%	-4.8%	#N/A
Dissolved Metals									
Hardness Ca	1570	1720	1380	1410	302	172	805	462	< 0.05
Aluminum Al	0.0130	0.0139	0.0098	0.0038	0.0145	0.0316	0.0061	0.0158	< 0.0003
Antimony Sb	< 0.0002	< 0.0002	0.0003	0.0009	0.0004	0.0020	0.0008	0.0011	< 0.0002
Arsenic As	0.0017	0.0020	0.0003	< 0.0002	0.0004	0.0011	0.0003	0.0011	< 0.0002
Barium Ba	0.0325	0.0278	0.0271	0.0343	0.0303	0.0370	0.0279	0.0287	0.00003
Beryllium Be	0.00025	0.00025	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	0.00002	< 0.00001
Bismuth Bi	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Boron B	0.0140	0.0136	0.0076	0.0089	0.0096	0.0163	0.0110	0.0105	< 0.0002
Cadmium C	0.0358	0.0395	0.000483	0.00384	0.000307	0.000043	0.00116	0.000348	< 0.000004
Calcium Ca	185	213	188	375	76.2	37.6	202	105	< 0.02
Chromium C	< 0.00003	< 0.00003	0.00011	0.00004	0.00021	0.00078	0.00010	0.00034	< 0.00003
Cobalt Co	0.907	1.02	0.00115	0.0107	0.000597	0.000195	0.00405	0.00129	0.000007
Copper Cu	0.00067	0.00082	0.00051	0.00092	0.00143	0.00205	0.00086	0.00084	0.00030
Iron Fe	14.6	18.6	0.003	0.002	< 0.002	< 0.002	0.004	0.003	< 0.002
Lead Pb	0.772	0.812	0.00109	0.0367	0.00138	0.00081	0.0104	0.00277	< 0.00001
Lithium Li	0.166	0.181	0.0481	0.0749	0.0322	0.0213	0.0411	0.0399	0.000022
Magnesium	268	288	220	116	27.2	19.0	72.9	48.2	< 0.003
Manganese	46.0	51.1	0.156	1.32	0.0714	0.0438	0.453	0.131	0.0001
Mercury Hg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Molybdenum	0.00005	0.00006	0.00794	0.00083	0.00573	0.00527	0.00076	0.00161	< 0.00001
Nickel Ni	0.831	0.926	0.0075	0.0216	0.0031	0.0012	0.0076	0.0043	< 0.0001
Phosphorus	0.045	0.032	0.010	0.019	0.025	< 0.009	< 0.009	< 0.009	< 0.009
Potassium K	29.8	32.1	28.9	27.2	11.7	9.84	25.8	27.7	0.006
Selenium Se	0.00099	0.00111	0.00145	0.00151	0.00775	0.00143	0.00614	0.00283	< 0.00004
Silicon Si	1.88	1.96	1.54	2.02	1.72	2.24	1.30	1.67	< 0.02
Silver Ag	0.000076	0.000079	0.000009	0.000076	< 0.000002	< 0.000002	0.000110	0.000032	< 0.000002
Sodium Na	3.15	3.45	7.21	5.80	14.4	70.5	8.56	9.26	0.05
Strontium Sr	0.333	0.365	0.654	0.521	0.422	0.368	0.477	0.474	< 0.0002
Sulphur (S)	644	697	474	492	101	71.8	293	170	< 0.03
Thallium Tl	0.00956	0.0106	0.000530	0.00221	0.000117	0.000107	0.00119	0.000608	< 0.000005
Tin Sn	0.00002	0.00002	0.00002	0.00002	0.00005	0.00012	0.00003	0.00005	0.00002
Titanium Ti	0.00024	0.00024	0.00015	0.00020	0.00016	0.00017	0.00014	0.00014	0.00006
Uranium U	0.000578	0.000665	0.00163	0.000843	0.00145	0.000870	0.000611	0.00119	0.000003
Vanadium V	0.00003	0.00002	0.00007	0.00003	0.00015	0.00039	0.00006	0.00008	< 0.00001
Zinc Zn	85.2	99.6	0.005	0.644	0.007	0.002	0.080	0.037	< 0.001
Zirconium Zr	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002