REPORT

Groundwater Monitoring Plan

Coffee Gold Mine

Prepared for:

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July 4, 2025

REVISION TRACKING LOG

Revision Tracking Log			
Version	**Date**	**Section Updated**	**Description of Update**
0	November 2023	-	First submission of the Groundwater Monitoring Plan
1	July 2025	Section 2.3.5.2; Section 2.3.5.3	Edits following First Nation engagement
2			

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LIST OF ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Definition
BCMOE	British Columbia Ministry of Environment
Ck	Creek
D/S	Downstream
EC	Conductivity
EMR	Yukon Energy, Mines and Resources
HLF	Heap Leach Facility
LOM	Life of Mine
NAR	Northern Access Route
QA/QC	Quality Assurance/Quality Control
RDL	Reportable Detection Limit
ROM	Run of Mine
RPD	Relative percent difference
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
VWP	Vibrating Wire Piezometer
WRSF	Waste Rock Storage Facility
YWB	Yukon Water Board

LIST OF SYMBOLS AND UNITS OF MEASURE

Symbol / Unit of Measure	Definition
L/min	Litres/minute
m	Length (depth) metres
m bgs	Metres below ground surface
m asl	Metres Above Sea Level
Mt	Million tonnes
v. m bgs	Vertical metres below ground surface
mg/L	Concentration in milligrams per Litre
NTU	Turbidity in Nephelometric Turbidity Units
µg/L	Concentration in micrograms per Litre
µS/cm	Conductivity in micro-siemens per centimetre

1.0 INTRODUCTION

This Groundwater Monitoring Plan (the Plan) has been written to meet the guidance provided in the *Plan Requirement Guidance for Quartz Mining Projects* (YWB and EMR 2013).

An intermediate component analysis for groundwater was undertaken in 2017. The assessment employed the results of a numerical groundwater model and a site-wide water balance and water quality model to conservatively determine potential changes to groundwater quality and quantity arising from Project activities. A monitoring program is required to:

- Verify the accuracy of the residual change and residual cumulative change predictions, and the value of proposed mitigation measures
- Assess the efficacy of proposed mitigation measures and the need for modifications to those measures to ensure change predictions remain valid
- Identify problems that may arise related to groundwater
- Implement additional mitigation measures, if necessary, per surface water quality and aquatic life adaptive management plans.

The objectives this Groundwater Monitoring Plan are to build on the baseline dataset, and to monitor for variations in groundwater quantity and quality that may be attributable to mine Construction and Operations. Groundwater monitoring requirements during Reclamation and Closure will be informed by groundwater monitoring and modeling updates conducted through Operations and defined in the Reclamation and Closure Plan.

This Plan is provided in conjunction with several other plans to meet the requirements for quartz mine applications for a Quartz Mining License and a Water Use Licence under the *Quartz Mining Act* and the *Waters Act*, respectively. Other applicable regulations related to groundwater monitoring include the *Yukon Drinking Water Regulation* under the *Public Health and Safety Act* and the *Yukon Contaminated Sites Regulation* under the *Environmental Act*.

2.0 MINE SITE GROUNDWATER MONITORING

2.1 Existing Baseline Monitoring Network

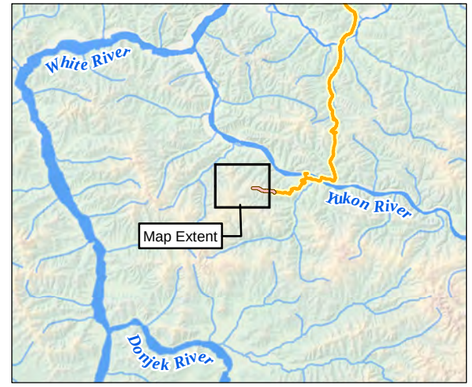
The baseline hydrogeological monitoring network includes the following installations located throughout the YT-24, Halfway Creek, and Latte Creek catchments:

- Nine conventional monitoring wells (three shallow wells less than 10 meters deep; and six deep wells between 150 and 220 metres deep) in nine locations
- Seven multilevel groundwater monitoring systems (Westbay installations) monitoring groundwater conditions from 10 metres to 286 metres deep
- Two stand-alone vibrating wire piezometer (VWP) installations, approximately 180 m deep
- Twelve combination VWP / thermistor installations ranging from 34 to 268 metres deep.

Installation details for existing groundwater instruments are provided in Table 2-1 to Table 2-3.

COFFEE GOLD MINE

Groundwater Monitoring Stations



Legend

- Approximate Location of Additional GW Monitoring — *WB = Westbay*, *T = Thermistor String*
- Monitoring Well — AZ = Active Zone, WB = Westbay, A = Deep Conventional (200+m), B = Shallow Coventional (150+m), T = Thermistor String
- SWQ Monitoring Station
- Thermistor/VWP
- Vibrating Wire Piezometer (VWP)
- Mine Site Access Route
- Northern Access Route

Proposed Infrastructure

- WRSF/Backfill
- Pit
- Diversion
- Seepage Monitoring Locations

N

1:40,000

0 500 1,000 1,500 2,000 2,500

Meters

NAD 1983 UTM Zone 7N

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Figure 2-1	Date: Jul 14, 2023	Drawn by: (A.L.)	Reviewed: (L.F.)

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Table 2-1 Baseline Conventional Monitoring Well Installations at Coffee Gold Mine.

Monitoring Well ID		MW14-02A	MW14-02B	MW14-03A	MW14-03B	MW14-05A	MW14-05B	MW15-02AZ	MW15-03AZ	MW15-05AZ
Mine Area		Supremo / Latte	Supremo/ Latte	Latte	Latte	Kona	Kona	Supremo D/S	Alpha WRSF D/S	HLF D/S
Catchment Area		Latte Ck	Latte Ck	Halfway Ck	Halfway Ck	Halfway Ck	Halfway Ck	Latte Ck	Halfway Ck	Latte Ck
Easting[1]	m	583,994	584,008	582,401	582,388	579,708	579,695	584,858	585,583	581,387
Northing[1]	m	6,973,508	6,973,507	6,973,191	6,973,197	6,972,998	6,972,999	6,971,754	6,978,157	6,971,079
Ground Elevation[1]	m	1029.5	1030.9	1097.6	1095.2	1268.5	1270.3	737.2	557.9	1068.9
Completion Date		28-Aug-14	24-Aug-14	07-Sep-14	12-Sep	17-Sep-14	20-Sep-14	24-May-15	09-May-15	20-May-15
PVC Diameter		2" (Sch. 40)	2" (Sch. 40)	2" (Sch. 40)	2" (Sch. 80)	2" (Sch. 80)	2" (Sch. 80)	2" (Sch. 80)	2" (Sch. 80)	2" (Sch. 80)
Stickup (PVC)	m	1.0	1.3	1.0	0.9	1.1	0.7	0.7	0.7	0.6
Screened lithology		Hydro-thermally altered rock/Crackle Breccia	Biotite Feldspar Schist	Biotite Feldspar Schist & Shear Zone	Biotite Feldspar Schist with Weak Zone	Granite	Granite	Colluvium	Colluvium / Alluvium	Colluvium
Bottom of Screen	m bgs	195.5	150.8	198.5	150.6	220.5	179.2	10.3	5.5	4.7
Top of Screen	m bgs	186.4	144.7	189.4	144.5	202.2	160.8	2.3	2.5	1.7
Bottom of Sand	m bgs	196.1	150.8	198.5	151.1	220.5	179.5	10.3	5.6	5.7
Top of Sand	m bgs	180.4	142.4	184.0	140.2	192.3	162.5	0.8	1.0	0.6

Notes:

D/S = downstream, HLF = heap leach facility

1. Measured by real time kinematic (RTK) (UTM NAD83 Zone 7). All holes drilled vertical.

Table 2-2 Baseline Westbay Systems installed at Coffee Gold Mine

Westbay ID		MW15-01WB	MW15-02WB	MW15-03WB	MW15-04WB	MW15-05WB	MW15-06WB	MW16-01WB
Mine Area		Supremo D/S	Supremo D/S	Alpha WRSF D/S	Alpha WRSF D/S	HLF D/S	Supremo	HLF
Catchment Area		YT-24	Latte Ck	Halfway Ck	Halfway Ck	Latte Ck	Halfway Ck	Halfway Ck
Easting[1]	m	585,829	584,858	585,581	584,024	581,402	584,090	580,971
Northing[1]	m	6,976,212	6,971,758	6,978,165	6,976,566	6,971,084	6,975,003	6,972,510
Ground Elevation[1]	m	803.6	737.1	557.9	671.5	1067.7	1184.9	1203.91
Westbay Stickup	m	1.67	1.055	0.78	1.06	1.29	0.62	1.4
Westbay Primary Sampling Zones[2]								
Zone 1	m bgs	109-112	60.8-65.7	93.9-96.7	54.5-56.7	77.9-82.7	280.7-285.9	110.1-113.8
Zone 2	m bgs	82-87.5	25.7-30.9	81.7-86.9	38.1-40.2	63.6-67.3	247.1-250.8	85.7-89.4
Zone 3	m bgs	-	-	46.7-50.3	-	-	238.0-243.2	71.4-73.5
Zone 4	m bgs	-	-	-	-	-	221.2-226.4	66.8-70.5
Zone 5	m bgs	-	-	-	-	-	210.6-220.3	-
Zone 1 Lithology		Gneiss	Biotite Schist	Gneiss	Gneiss	Granite	Gneiss	Granite
Zone 2 Lithology		Gneiss	Biotite Schist	Gneiss	Gneiss	Granite	Gneiss	Granite
Zone 3 Lithology		-	-	Gneiss	-	-	Gneiss	Granite
Zone 4 Lithology		-	-	-	-	-	Gneiss	Granite
Zone 5 Lithology		-	-	-	-	-	Gneiss	-
Port 1	m bgs	115.0	61.0	97.8	57.8	78.1	287.0	114.9
Port 2	m bgs	108.9	32.0	94.1	54.8	68.4	`	110.3
Port 3	m bgs	88.5	25.9	88.0	41.4	63.8	251.9	90.5
Port 4	m bgs	82.4	13.7	82.0	38.3	62.3	250.4	85.9
Port 5	m bgs	80.3	9.2	51.5	33.1	54.7	244.3	74.6
Port 6	m bgs	75.7	-	46.9	28.6	-	241.3	71.6

Westbay ID		MW15-01WB	MW15-02WB	MW15-03WB	MW15-04WB	MW15-05WB	MW15-06WB	MW16-01WB
Westbay Primary Sampling Zones[2]								
Port 7	m bgs	-	-	36.2	-	-	227.6	67
Port 8	m bgs	-	-	31.7	-	-	224.5	64
Port 9	m bgs	-	-	-	-	-	216.9	-
Port 10	m bgs	-	-	-	-	-	209.3	-
Port 11	m bgs	-	-	-	-	-	183.4	-
Port 12	m bgs	-	-	-	-	-	96.5	-

Notes:

D/S = downstream, HLF = heap leach facility

1. Measured by RTK (real time kinematic) (UTM NAD83 Zone 7). All holes drilled vertical.
2. Underlined zones depths indicate that this zone has been sampled as a part of the groundwater baseline monitoring program.

Table 2-3 Baseline Combined Thermistor/Vibrating Wire Piezometer Installations at the Coffee Gold Mine

Monitoring Well ID		MW14-07T	MW15-01T	MW15-02T	MW15-03T	MW15-04T	MW15-05T	MW15-07T	SRK-15D-07T[3]	SRK-15D-08AT	SRK-15D-09T	CFD0324-P2	CFD0351-P4	MW16-01T	MW17-01T
Mine Area		HLF D/S	Supremo D/S	Supremo D/S	Alpha WRSF D/S	Alpha WRSF D/S	HLF D/S	SU5S	Supremo D/S	Alpha WRSF	Supremo/Latte D/S	Supremo	Latte	Heap Leach D/S	Kona
Catchment		Latte Ck	YT-24	Latte Ck	Halfway Ck	Halfway Ck	Latte Ck	YT-24	YT-24	Halfway Ck	Latte Ck	Latte Ck	Latte Ck	Halfway Ck	Halfway Ck / Kona Trib.
Easting[1]	m	580,832	585,826	584,855	585,584	584,027	581,406	585,198	585,124	582,057	584,734	583,993	583,275	580,988	579,737
Northing[1]	m	6,971,365	6,976,210	6,971,756	6,978,168	6,976,568	6,971,083	6,974,583	6,975,415	6,973,891	6,972,215	6,973,100	6,973,115	6,972,503	6,973,195
Ground Elevation[1]	m	1,156.3	803.9	737.1	557.7	670.9	1,067.1	1,183.1	948.9	925.1	784.3	956.0	1120.5	1203.67	1250
Azimuth (nm)[2]	degrees	0	0	0	39	40	125	0	0	0	0	280	0	0	0
Dip (nm)[2]	degrees	-90	-90	-90	-80	-80	-80	-90	-90	-90	-90	-45	-65	-90	-90
Datalogger		DT2040	DT2040	DT2055-B	DT2040	DT2040	DT2040	DT2040	DT2040	DT2040	DT2040	DT-2011B	DT-2011B	DT2040	DT2040
Thermistor String	Serial #	TS3796	TS3797	TS3798	TS3969	TS 3970	TS3971	TS3837	TS3977	TS3978	TS3976	n/a	n/a	TS4132	TS4545
Therm 1-1	v. m bgs	0.6	0.5	1.2	0.53	(-)	0.75	7	0.7	1	1.1			0.3	0.5
Therm 1-2	v. m bgs	1.4	1.3	3.2	1.2	(-)	1.5	8	2.2	4	2.6			0.9	1
Therm 1-3	v. m bgs	2.1	2.0	5.2	1.9	(-)	2.2	11	3.7	9	4.1			1.8	2
Therm 1-4	v. m bgs	2.9	2.8	10.2	2.6	(-)	3.0	26	5.2	16	7.1			3.8	4
Therm 1-5	v. m bgs	3.7	3.5	15.2	3.4	(-)	3.7	41	6.7	26	10.1			7.8	8
Therm 1-6	v. m bgs	4.4	4.3	24.2	4.1	(-)	4.5	56	8.2	41	15.1			12.8	13
Therm 1-7	v. m bgs	5.1	5.0	(-)	4.9	(-)	5.2	86	9.7	61	22.1			20	20
Therm 1-8	v. m bgs	17.4	12.3	(-)	16.9	(-)	17.2	106	12.7	81	32.1			29.7	30
Therm 1-9	v. m bgs	29.7	19.8	(-)	28.9	1.7	29.5	121	17.7	101	47.1			56.6	60
Therm 1-10	v. m bgs	42.5	27.3	(-)	41.0	13.8	41.8	136	24.7	121	77.1			89.5	90
Therm 1-11	v. m bgs	54.9	34.8	(-)	53.1	26.1	54.0	151	34.7		97.1			119.5	120
Therm 1-12	v. m bgs	67.4	42.3	(-)	65.1	38.1	66.3	166	49.7					149.5	150
Therm 1-13	v. m bgs	80.0	49.8	(-)	77.2	50.3	78.4	181	69.7					179.5	180
Therm 1-14	v. m bgs								89.7						
Therm 1-15	v. m bgs								109.7						
Therm 1-16	v. m bgs								129.7						
VWP 1	Serial #/ Rating	VW30262	VW30462/2 MPa	VW30460/1 Mpa	VW30461/1 MPa	VW32593/1 MPa	VW30464/2 MPa	VW33363/ 3 MPa	VW32653/1 MPa	VW33361/1 MPa	VW33362/1 MPa	VW25900/5 Mpa	VW25902/5 Mpa	VW37992/3 MPa	VW44543/3 MPa
	v. m bgs	124.36	76.0	33.9	48.8	38.8	55.4	239.0	103.6	103.6	99.7	178	184	97.5	200.9
VWP 2	Serial #/ Rating		VW30463/2 MPa	(-)	VW32594/1 MPa	VW32596/2 MPa	VW32595/2 MPa	VW33364/ 3 MPa	VW32655/2 MPa	VW32654/2 MPa				VW37991/3 MPa	VW44544/3 MPa
	v. m bgs		89.1	(-)	94.7	51.62	81.37	267.8	149.2	149.2				131.5	170.9

Notes:

D/S = downstream, HLF = heap leach facility

1. Measured by RTK (real time kinematic) (UTM NAD83 Zone 7). All holes drilled vertical.
2. Dip/azimuth not measured (nm)
3. Instrument appears to be providing spurious groundwater pressure data. See Lorax (2021).

2.2 Proposed New Monitoring Instruments

Approximate co-ordinates of proposed new monitoring instruments are provided in Table 2-4 and shown in Figure 2-1. The mine is located at the topographic divide of three surface water and groundwater catchment areas. The instrument locations have been approximated to characterize potential groundwater pathways from mine components towards surface water receptors based on results of the numerical groundwater model (Lorax 2017). These locations may be refined as groundwater model is updated throughout mine life.

The timing of the installations is tied to the timing of inception/closure of the associated mine facility:

- The Kona Pit is sequenced at the end of Operation phase. Inception of downgradient monitoring stations (MW-05WB/T) is recommended to start before pit initiation. Monitoring of temperatures within the backfilled waste rock (MW-03T) will necessarily occur upon backfill/closure of the pit. This monitoring station will confirm if permafrost aggrades into the backfilled mine waste
- Initiation of monitoring well MW-04 in Latte Tributary 20 (LTC-20) should predate or coincide with sequencing of the Double Double and Latte pits
- Initiation of monitoring well MW-06 in Latte Tributary 18 (LTC-18) should predate or coincide with sequencing of the Double Double pit
- Initiation of monitoring well MW-07 in Halfway Creek should predate or coincide with initiation of the Alpha Pond during Construction phase
- Initiation of Westbay or conventional wells flanking Latte pit (MW-01WB/MW-02WB) should predate pit closure.

Table 2-4 Approximate Locations of Proposed New Groundwater Monitoring Stations

Installation ID	Installation Type	Easting[1]	Northing[1]	Elevation[1]	Area	Initiation Phase
MW-01WB	Conventional Well or Westbay	583,475	6,973,048	1,088	Latte Pit SE	Early-Mid Operation
MW-02WB	Conventional Well or Westbay	582,626	6,973,232	1,095	Latte Pit W	Early-Mid Operation
MW-03T	Thermistor	579,689	6,973,046	1,266	Kona Pit	Reclamation and Closure
MW-04	Conventional Well	584,734	6,972,200	781	Latte Tributary 20	Early-Mid Operation
MW-05T	Thermistor/VWP	579,674	6,974,244	957	Kona Tributary	Late Operation
MW-05WB	Westbay	583,475	6,973,048	1,088	Kona Tributary	Late Operation
MW-06	Conventional Well	585,755	6,972,360	815	Latte Tributary 18	Mid-Late Operation
MW-07	Conventional Well	582,916	6,975,540	770	Alpha Pond	Construction

Notes:

1. Co-ordinates are approximate and subject to ground truthing.

2.3 Construction and Operation Phase Monitoring

Monitoring of the Coffee Gold Mine during Construction and Operation phases is outlined Table 2-5. The planned monitoring includes existing baseline stations and new monitoring stations. Monitoring is discussed by catchment in the sections below. The surface water quality (SWQ) and baseflow monitoring referenced below are detailed in the SWQ and Hydrology Monitoring Plan.

2.3.1 Latte Creek

The main mining activities that are anticipated to impact groundwater quantity and/or quality during construction and operations in the Latte Creek drainage include:

- Excavation of and subsequent accumulation of meteoric water in the Latte, Supremo and Double Double pits.
- Discharge of WTP effluent in Latte Pit.
- Complete backfilling of mine waste into Double Double and partial backfill of mine waste in Latte and Supremo pit complexes.
- Lining of the Heap Leach Facility (HLF), thereby removing an area of groundwater recharge.
- Unplanned leakage of HLF contact water due to liner non-performance.

Any change to groundwater quantity or quality down-gradient of open pits and the HLF in the Latte Creek drainage will be monitored via:

- Groundwater pressures at VWPs CFD0351, CFD0324 until they become inaccessible.
- Groundwater pressure and groundwater quality at well nest MW14-02A/B until it becomes inaccessible.
- Groundwater pressure and temperature at SRK-15D-09T.
- A new conventional groundwater well (MW-04) completed to the depth of the water table near thermistor/VWP SRK-15D-09T.
- Groundwater pressures and groundwater quality at existing MW15-02WB/AZ/T groundwater monitoring well and VWP/thermistor installation.
- A new conventional groundwater well (MW-04) completed to the depth of the water table near thermistor/VWP SRK-15D-09T.
- A new conventional groundwater well (MW-06) completed to the depth of the water table in LTC-18 to monitor potential groundwater seepage from the backfilled Double Double pit.
- Groundwater pressures and temperature in the headwaters of the creek and downgradient of the HLF at MW14-07T.
- Groundwater pressure, temperature, and groundwater quality at the existing installation nest MW15-05WB/T (the active zone well has been undercut by the creek and is not operational). This location is slated for monitoring of cyanide species as an indicator of HLF contact water.
- A new Westbay well (MW-01WB) will be constructed southeast of the Latte pit, to monitor the quantity and quality of groundwater that could emanate from the Latte Pit towards Latte Creek.
- Pit lake SWQ (described in Water Management Plan).

- SWQ and baseflow monitoring at stations LC-15.5, and LC-11.4 in Latte Creek downgradient of the HLF and last point of mine effluent control, respectively (described in Surface Water Quality and Hydrology monitoring plans.
- SWQ and baseflow monitoring at station LC-20-0.1, located downgradient of the Supremo and Latte pits on Latte Creek Tributary 20 (described in Surface Water Quality Monitoring Plan).

2.3.2 YT-24

Mining activities leading to potential impacts on groundwater quantity and quality in the YT-24 drainage include:

- Mining from Supremo pit complex
- Accumulation of meteoric water in Supremo sub-pits; with spilling into YT-24 by the end of operations.

Any change to groundwater quantity or quality down-gradient of these facilities will be monitored via:

- Combination VWP/thermistor string MW15-07T
- Existing groundwater well MW15-01WB and co-installed VWP/thermistor string MW15-01T
- Pit lake SWQ (described in Water Management Plan
- SWQ and baseflow monitoring at station YT24-0.1 (described in Surface Water Quality Monitoring Plan).

At this time, SRK15D-07T is not included as a longer-term monitoring station in this drainage due to the potentially spurious data collected thus far at this station (Lorax 2021).

2.3.3 Halfway Creek

Mining activities leading to potential impacts on groundwater quality and quantity in the Halfway Creek drainage include:

- Mining and backfill of the Kona Pit
- Loss of recharge arising from placement of the HLF liner system
- Excavation of and accumulation of recharge in the Latte and Supremo pits
- Discharge of WTP effluent in Latte Pit
- Storage of waste rock in the Alpha WRSF
- Collection and release of contact water from the Alpha Pond.

Any change to groundwater quantity or quality down-gradient of these facilities will be monitored via:

- Existing Westbay and thermistor/VWP installation in MW16-01WB/T will monitor sub-permafrost groundwater draining from footprint area of the HLF. This location is slated for monitoring of cyanide species as an indicator of HLF contact water.
- Existing well MW15-06WB to monitor any groundwater flowing from the northern part of the Supremo Pit complex into the Halfway Creek drainage.
- Water level monitoring in the nested well pair MW14-03A/B.

- Existing Westbay and thermistor/VWP installation in MW15-04WB/T in Halfway Creek.
- A new groundwater Westbay installation (MW-02WB) will be constructed immediately west of the Latte Pit to detect the quantity and quality of groundwater potentially emanating from the Latte Pit into the Halfway Creek drainage.
- A new groundwater monitoring well (MW-07) will be constructed immediately downgradient of the Alpha Pond to monitor groundwater seepage beneath the pond embankment.
- Pit lake SWQ (described in Water Management Plan).
- SWQ sampling in the Alpha Pond (described in Surface Water Quality Monitoring Plan).
- SWQ sampling and baseflow monitoring at Station HC-6.8 and HC-1.0 (described in Surface Water Quality Monitoring Plan).

2.3.4 Kona Tributary

Mining and subsequent backfill of the Kona Pit may influence groundwater quality and quantity in the Kona Tributary. Any change to groundwater quantity or quality down-gradient of the Kona Pit towards the Kona Tributary will be monitored via:

- Existing thermistor/VWP installation at MW17-01T on the northern margin of Kona pit.
- A new thermistor/VWP and Westbay installation (MW-05WB/T) in the upper reaches of Kona Creek proper.
- SWQ and baseflow monitoring at KT-0.4 in the lower reaches of Kona Creek (described in Surface Water Quality Monitoring Plan).

Table 2-5: Summary of Mine Site Groundwater Monitoring Program During Construction & Operation Phases

Type[1]	Station ID[1]	Notes[1]	Current Baseline Station	Future Station (To Be Constructed)	Station Disabled During Mining	Sampling Frequency[2]		
						Ground Temp	GWL	GWQ[3]
Latte Creek								
MW	MW14-02A/B	Supremo: response to mining in Latte	X		X		C	Q
VWP	CFD-0324	Supremo: response to mining in Latte and Supremo	X		X		C	
VWP	CFD-0351	Latte: response to mining in Latte and Supremo	X		X		C	
T / VWP	SRK-15D-09T	Supremo and Latte: response to mining	X			C	C	
MW	*MW-04*	Supremo, Double Double, Latte: infiltration		X			C	Q
MW	*MW-01(WB)*	Latte: infiltration		X			C	Q
T / VWP	MW15-02T	Supremo, Double Double, Latte: infiltration	X			C	C	
MW	MW15-02WB/AZ	Supremo, Double Double, Latte: infiltration	X				Q	Q
T / VWP	MW14-07T	HLF: response to loss of recharge	X			C	C	
T / VWP	MW15-05T	HLF: response to loss of recharge	X			C	C	
MW	MW15-05WB	HLF: response to loss of recharge	X				Q	Q[4]
MW	*MW-06*	Double Double: infiltration		X			C	Q
YT-24								
T / VWP	MW15-07T	Supremo: response to mining	X			C	C	
T / VWP	MW15-01T	Supremo: infiltration	X			C	C	
MW	MW15-01WB	Supremo: infiltration	X				Q	Q
Halfway Creek								
MW	MW14-03A/B	Latte: changes in GWL	X				C	
MW	*MW-02(WB)*	Latte Pit: infiltration		X			Q	Q
MW	MW15-06WB	Supremo: infiltration	X				Q	Q
T / VWP	SRK-15D-08AT	Latte: changes in GWL	X		X	C	C	
T / VWP	MW15-04T	Alpha WRSF: infiltration	X			C	C	
MW	MW15-04WB	Alpha WRSF: infiltration	X				Q	Q

Type[1]	Station ID[1]	Notes[1]	Current Baseline Station	Future Station (To Be Constructed)	Station Disabled During Mining	Sampling Frequency[2]		
						Ground Temp	GWL	GWQ[3]
MW	*MW-07*	Alpha Pond: infiltration		X			C	Q
T / VWP	MW16-01T	Pathway from HLF to Halfway Creek	X			C	C	
MW	MW16-01WB	Pathway from HLF to Halfway Creek	X				Q	Q[4]
MW	MW14-05A/B	Kona: in pit	X		X		C	Q
Kona Tributary								
T / VWP	MW17-01T	Kona Pit: near pit groundwater pathway to Kona Tributary	X			C	C	
T / VWP	*MW-05T*	Kona Pit: farther afield pathway to Kona Tributary		X		C	C	
MW	*MW-05WB*	Kona Pit: farther afield pathway to Kona Tributary		X			Q	Q

Notes

1. MW = Monitoring well; T / VWP = Thermistor/vibrating wire piezometer, WB = Westbay, GWL = groundwater level, GWQ = groundwater quality. *Italics* indicate new station.
2. Frequency: C = Continuous; M = Monthly; Q = Quarterly
3. GWQ includes collection of field parameters (pH, ORP, DO, Conductivity, Temperature); routine water quality analysis (physical parameters, anions and nutrients, total and dissolved organic carbon, total and dissolved metals)
4. GWQ analytical suite to include cyanide species

2.3.5 Seepage Monitoring

Monitoring of shallow groundwater traveling in the active zone above permafrost has proven to be unreliable with conventional shallow (<5 m depth) monitoring wells established during the baseline period (2015). The thermistor record presented in Lorax (2021) indicates that the active zone is highly heterogeneous and is variable in timing and duration between locations and between years at the same location. For this reason, exact locations for seepage monitoring are difficult to determine prior to construction and operation of facilities and should be established after field reconnaissance once the facility is in operation. It is recommended that roadcuts downgradient of facilities of interest (i.e., the HLF), facility embankments (i.e., soil remediation facility) and facility perimeters (ROM) be visually surveyed once a month during the non-frozen season to confirm the presence of persistent seepage (i.e., lasting more than one month). If a persistent seepage at the base of the ROM is observed a sample with be collected (twice per year).

2.3.5.1 HLF

Figure 2-1 shows a single stretch of road flanking the HLF which is recommended for initial scoping of seepage faces. Where persistent (*i.e.,* lasting more than one month) and measurable (flowing >0.25 L/min) seeps are identified, site personnel will conduct a seep survey in the spring and the fall, collecting field measurements of pH, electrical conductance (EC) and flow (where possible). Active zone waters are anticipated to have low dissolved solids; higher values of EC may indicate influence of HLF contact water. Sites that return EC values above 250 uS/cm will be sampled for parameters as outlined in Table 2-6 including cyanide species. If analytical results confirm the presence of HLF seepage (as evidenced by presence of cyanide species) in active zone waters or sub-permafrost groundwater monitored at MW16-01WB and MW15-05WB, Newmont will conduct a cause-and-effect study of the leakage and perform corrective actions as determined by the study. Examples of corrective actions that may be taken include:

- Commence early decommissioning of the specific cell
- Reduce irrigation rate in the area of concern
- Shorten the leach time
- Install an inter-lift liner before the next lift of ore is placed
- Other measures depending on the size and location of the leak.

2.3.5.2 Land Treatment Facility

The Land Treatment Facility (LTF) treats different media (i.e., soil, water, snow, and ice) contaminated with hydrocarbons and antifreeze. The LTF will be constructed with an impermeable HDPE liner under the facility and within its berms, according to the Waste and Hazardous Materials Management Plan. The LTF is underlain by substantial permafrost, estimated to exceed 100 m thickness. The downgradient perimeter of the LTF will be inspected monthly for evidence of seepage (wet areas on or adjacent to embankment faces) during the operational season of the LTF (non-freezing period). If seepage areas are noted, seepage samples will be collected either from the seepage face, if possible, or from one or more shallow (<1 m) drive point piezometers installed opportunistically downgradient of the seepage face, access permitting. The samples will be analyzed for hydrocarbons as required by Yukon Department of Environment (2020) and glycol (Table 2-7). Should analytes be measured above detection limit in seepage samples, the Environmental Manager will initiate an investigation to determine what corrective actions may be required.

This may include and is not limited to additional monitoring, review of operational practices at the LTF, removal of contaminated materials in the landfill and/or capture of seepage.

2.3.5.3 Landfill

Construction and operation of the Landfill is described in the Waste and Hazardous Materials Management Plan. The landfill will be controlled by a gate and will accept items that are destined for disposal within the on-site landfill were that identified through the development of the Waste Materials List as described in the Waste and Hazardous Materials Management Plan. The landfill will be constructed on a pad of overburden. The landfill is underlain by substantial permafrost, estimated to exceed 40 m thickness. The downstream embankments of the landfill will be inspected monthly during the non-freezing period for evidence of seepage. A seepage survey will be conducted by installing multiple drivepoint piezometers across the landfill base. The piezometers would be installed to the point of refusal, or to permafrost. The seepage surveys would be conducted twice annually (once mid-summer and once in September) to ensure that at least one set of samples would be collected per year, as piezometers may be frozen in September.

Where water is intercepted in the drive points, it will be sampled and analyzed for the contaminants listed in Table 2-6 and Table 2-7 (except for cyanide species). The analytes in Table 2-7 would be included once per year for three years, then reduced to once every three years if they are not detected. Should analytes indicate seepage from the landfill, the Environmental Manager will initiate an investigation to determine what corrective actions may be required. This may include and is not limited to additional monitoring, review of operational practices at the landfill, removal of source items in the landfill and/or capture of seepage.

2.4 Groundwater Quality Parameters

Groundwater samples are shipped to an accredited laboratory and are analyzed for physical parameters, major ions, nutrients, organic and inorganic carbon, and total and dissolved metals. The full list of parameters that are analyzed, and the associated detection limits, are provided in Table 2-6 below. In addition, selected groundwater stations and HLF seepage monitoring locations will be sampled for cyanide species during operations (Table 2-6). Seepage samples from the LTF and Landfill will be monitored for hydrocarbons and glycol per Table 2-7.

Table 2-6: 2022 Groundwater Quality Parameters and Detection Limits for the Coffee Gold Project

Parameter	Symbol	Unit	Reportable Detection Limit
Physical Properties			
Conductivity	EC	µS/cm	2
pH	pH	pH	-
Total Suspended Solids	TSS	mg/L	1
Total Dissolved Solids	TDS	mg/L	10
Turbidity	-	NTU	0.1
Inorganics			
Alkalinity (Total as CaCO3)	-	mg/L	1.0
Alkalinity (PP as CaCO3)	-	mg/L	1.0
Bicarbonate	HCO_3	mg/L	1.0
Carbonate	CO_3	mg/L	1.0

Parameter	Symbol	Unit	Reportable Detection Limit
Hydroxide	OH	mg/L	1.0
Bromide	Br	mg/L	0.05
Fluoride	F	mg/L	0.02
Dissolved Chloride	Cl	mg/L	0.5
Organic/Inorganic Carbon			
Dissolved Organic Carbon	DOC	mg/L	0.5
Total Organic Carbon	TOC	mg/L	0.5
Anions and Nutrients			
Total Phosphorus	T-P	mg/L	0.002
Dissolved Phosphorus	D-P	mg/L	0.002
Orthophosphate	-	mg/L	0.001
Ammonia, Total (as N)	NH_3	mg/L	0.005
Total Kjeldahl Nitrogen	TKN	mg/L	0.05
Nitrate plus Nitrite	-	mg/L	0.005
Nitrate	NO_2	mg/L	0.005
Nitrite	NO_3	mg/L	0.001
Total Nitrogen	T-N	mg/L	0.03
Dissolved Nitrogen	D-N	mg/L	0.03
Dissolved Sulphate	SO4	mg/L	0.3
Dissolved Sulphide (as S)	D-S	mg/L	0.0015
Cyanides			
Cyanide (WAD)[1]	CN-WAD	mg/L	0.001
Total Cyanide[1]	T-CN	mg/L	0.001
Cyanate	OCN	mg/L	0.2
Thiocyanate	SCN	mg/L	0.5
Total and Dissolved Metals			
Aluminum	Al	mg/L	0.001
Antimony	Sb	mg/L	0.00002
Arsenic	As	mg/L	0.000020
Barium	Ba	mg/L	0.000020
Beryllium	Be	mg/L	0.0000050
Bismuth	Bi	mg/L	0.0000050
Boron	B	mg/L	0.0050
Cadmium	Cd	mg/L	0.0000050
Calcium	Ca	mg/L	0.010
Chromium	Cr	mg/L	0.00010
Cobalt	Co	mg/L	0.0000050
Copper	Cu	mg/L	0.000050
Iron	Fe	mg/L	0.0010
Lead	Pb	mg/L	0.000010
Lithium	Li	mg/L	0.00050
Magnesium	Mg	mg/L	0.0040

Parameter	Symbol	Unit	Reportable Detection Limit
Manganese	Mn	mg/L	0.000050
Mercury	Hg	mg/L	0.0000050
Molybdenum	Mo	mg/L	0.000050
Nickel	Ni	mg/L	0.000050
Phosphorus	P	mg/L	0.050
Potassium	K	mg/L	0.020
Selenium	Se	mg/L	0.000040
Silicon	Si	mg/L	0.050
Silver	Ag	mg/L	0.0000050
Sodium	Na	mg/L	0.020
Strontium	Sr	mg/L	0.000020
Sulphur	S	mg/L	0.50
Thallium	Tl	mg/L	0.0000050
Tin	Sn	mg/L	0.000020
Titanium	Ti	mg/L	0.000050
Uranium	U	mg/L	0.0000010
Vanadium	V	mg/L	0.000050
Zinc	Zn	mg/L	0.00050
Zirconium	Zr	mg/L	0.000010

Notes:

1. Reported WAD and Total CN detection limits are for low-level tests

Table 2-7 Additional Groundwater Quality Parameters and Detection Limits for Seepage Samples Collected Downgradient of Land Treatment Facility and Landfill

Parameter	Unit	Reportable Detection Limit
Glycols		
Propylene glycol, 1,2-	mg/L	5
BTEXSM/VPH in Water		
VH_{W6-10}	µg/L	100
VPH_W	µg/L	100
Benzene	µg/L	0.5
Ethylbenzene	µg/L	0.5
Methyl-tert-butyl ether (MTBE)	µg/L	0.5
Styrene	µg/L	0.5
Toluene	µg/L	0.5
xylene, m+p-	µg/L	0.4
xylene, o-	µg/L	0.3
xylenes, total	µg/L	0.5
LEPH/HEPH+EPH+PAH in Water		
$LEPH_W$	ug/L	250
$HEPH_W$	µg/L	250
acenaphthene	µg/L	0.01

Parameter	Unit	Reportable Detection Limit
acenaphthylene	µg/L	0.01
acridine	µg/L	0.01
anthracene	µg/L	0.01
benz(a)anthracene	µg/L	0.01
benzo(a)pyrene	µg/L	0.005
benzo(b+j)fluoranthene	µg/L	0.01
benzo(b+j+k)fluoranthene	µg/L	0.015
benzo(g,h,i)perylene	µg/L	0.01
benzo(k)fluoranthene	µg/L	0.01
chrysene	µg/L	0.01
dibenz(a,h)anthracene	µg/L	0.005
fluoranthene	µg/L	0.01
fluorene	µg/L	0.01
indeno(1,2,3-c,d)pyrene	µg/L	0.01
methylnaphthalene, 1-	µg/L	0.01
methylnaphthalene, 2-	µg/L	0.01
naphthalene	µg/L	0.05
phenanthrene	µg/L	0.02
pyrene	µg/L	0.01
quinoline	µg/L	0.05

3.0 WATER SUPPLY WELL FIELD MONITORING

Newmont intends to supply mine water and camp potable water through a groundwater well field established adjacent to the Yukon River, near the existing Coffee exploration camp, with water delivered to the mine site via pipeline. Monitoring of the water supply well-field is outlined in general terms below; additional hydrogeological characterization work is required in the exploration camp area to establish a preliminary design of the well-field and the subsequent monitoring network.

3.1.1 Potable Water Quality Monitoring

The projected maximum occupancy of the Operation phase camp is 400 people, while the maximum occupancy of the Construction phase camp is 200 people. The Coffee potable water supply will be classified a large public drinking water system (piped distribution system with 15 or more connections) per the Yukon *Drinking Water Regulation (Y-DWR)*. Table 3-1 outlines parameters, frequency and location of monitoring required for a large drinking water system per schedules B and C of the *Y-DWR.* Additional hydrogeological characterization work will establish whether the potable water source is under the direct influence of surface water (GUDI) which will determine the level of monitoring required.

3.1.2 Well Site Monitoring

Per section 14(1) of the *Yukon Waters Act*, accurate and detailed records of all groundwater pumped from the well field will be maintained via totalizers on the well heads, with manual recordings maintained on a daily basis. Where practical, a pressure transducer with on board datalogger will be deployed in each pumped well to establish a continuous water level record in the pumped wells. In addition, continuous data loggers will be installed in select groundwater monitoring wells that are located inside and outside of the zone of influence from the dewatering wells for when the supply well field is established.

Additional monitoring wells will be deployed further afield to monitoring the influence of the well-field operation on the aquifer and nearby water courses. If required, nearby water courses will be instrumented with hydrometric stations to determine baseflow impacts. Number and location of monitoring wells and potential hydrometric stations will be confirmed upon final design of the well-field.

Table 3-1 Parameters, Frequency and Sampling Locations for Drinking Water Sources

Parameters	Monitoring Frequency	Sampling Location(s)
General Physical and Chemical Parameters		
Physical Tests	1/yr or as required by a health officer	(a) for a drinking water system with one or more sources, one water sample from each source is to be collected prior to entry to the distribution system. (b) for multiple sources within a single drinking water system in which water is blended, one water sample is to be collected prior to entry to the distribution system at a location where the water from all sources has been blended. (c) for a drinking water system that is treated in addition to chlorine disinfection, one water sample is to be collected before treatment and one sample after treatment prior to entry to the distribution system; or (d) as required by a health officer.
Colour		
Conductivity		
Total Dissolved Solids		
Hardness (as CaCO3)		
Turbidity		
Total Dissolved Anions		
Total Alkalinity		
Chloride		
Fluoride		
Sulphate		
Nutrients		
Nitrate Nitrogen		
Nitrite Nitrogen		
Total Metals		
Aluminum		
Arsenic		
Barium		
Boron		
Cadmium		
Calcium		
Chromium		
Copper		
Lead		
Magnesium		
Mercury		
Potassium		
Selenium		
Sodium		
Uranium		
Zinc		
Bacteriological		
Total Coliforms	2x month	(a) for each system having a groundwater source, each well is to be tested. (b) representative water samples from the distribution system shall include a point on a dead-end line and the farthest point or points from where the drinking water is treated with chlorine.
Escherichia coli		

Parameters	Monitoring Frequency	Sampling Location(s)
Other[1]		
Turbidity[2]	2x/day for well water that is GUDI; 1/yr for well water not-GUDI	
Trihalomethanes	quarterly for well water that is GUDI; annually for well water not-GUDI	
Free Chlorine Residual[2]	at least once a day	

Notes:

1. GUDI – groundwater under the direct influence of surface water
2. To be tested using on-site monitoring equipment or a test kit.

4.0 MONITORING METHODOLOGY

Groundwater quantity monitoring will be undertaken in accordance with the British Columbia Field Sampling Manual (BC MOE 2013), Part E: Water and Wastewater Sampling. During each monitoring visit, the technician will perform the following tasks:

- Inspect all instrumentation (VWPs, thermistors, wells, water level dataloggers) for signs of damage, moisture buildup, or any condition that could cause or lead to malfunction. Take photos to document any observed damage.
- Download VWP and water level dataloggers and visually inspect data for abnormalities.
- Record the monitoring station, time, weather, water level prior to conducting work at a well, time and water level corresponding to water level datalogger sensor removal and redeployment, general low-flow purging parameters (time, water level, cumulative volume purged, flow rate, field parameters (pH, EC, DO, ORP) at regular time intervals, level of frozen water column, and any other observations that may be relevant to sample analysis and interpretation, including any deviation from the standard sampling protocol, and any anomalous conditions (such as water colour, turbidity, odour, presence of algae, sheen, effervescence, etc.).
- Conduct a complete pressure profile of all sample zones, prior to purging any groundwater, when working with Westbay installations.

Groundwater quality sampling will be undertaken in accordance with the British Columbia Field Sampling Manual (BC MOE 2013), Part E: Water and Wastewater Sampling. During each sampling visit, the technician will perform the following tasks in addition to those noted above:

- Field filter (with a 0.45 µm filter) and preserve groundwater samples as required for the different analyses.
- Ensure that duplicate samples, field blanks, and travel blanks are collected as per the established QA/QC requirements for the groundwater quality monitoring program (briefly summarized in Section 4.2 below).
- Complete Chain-of-Custody forms and ship samples to the specified laboratory, ensuring that they will reach the laboratory within the specified holding times, where flight schedules permit.

5.0 DATA CONTROL, QA/QC AND REPORTING

5.1 Document Control

Groundwater data will include physical data (water levels, flows), water quality field parameter measurements and laboratory water quality data. Groundwater quality analyses and field measurements will be incorporated into a groundwater quality database. This database will form the primary record, and any adjustments or corrections that are performed on this data will be saved as separate files, to ensure that the original data records remain unaltered. Site personnel will routinely evaluate the database to identify any potential anomalies or errors in data entry.

All groundwater data and associated field notes will be stored in standard electronic format. Read-only unaltered raw data from dataloggers will be saved from which working files can be created and modified in a post-processing software (Excel, SigmaPlot or other).

The data collected by the groundwater program will be the property of Newmont but will be distributed publicly as required by relevant permit and license conditions, in tabular, graphical and figure format, as required. Otherwise, dissemination of the data will be at Newmont's discretion.

5.2 Quality Assurance and Quality Control

The primary objective of the data QA/QC program is to ensure that the data collected by the site monitoring programs is both accurate and precise, and properly represents the parameters that the monitoring programs are intended to measure. This provides regulators, First Nations, the public and mine staff with confidence in the data collected by the monitoring programs, and thus in the conclusions and actionable responses drawn from these data.

The QA/QC program encompasses a range of actions, including:

- Checks and calibration of the instrumentation prior to each day of monitoring activities
- Automated error trapping and flagging for review in databases and spreadsheets
- Review of collected data by site environmental staff
- Periodic review, as necessary, by external review by qualified professionals.

Qualified professionals will be responsible for QA/QC for groundwater data and assisting with data interpretation and reporting.

5.2.1 Instrument Integrity

Monitoring wells, Westbays, VWPs and associated dataloggers should be inspected in the field during each sampling event. This includes a survey of surface completions to identify any erosion, ice-heaving or other damage that may compromise the installation. Memory and battery capacity of dataloggers will be checked and replacements/reprogramming undertaken as required. Field personnel are expected to do a brief overview of the data files during downloading to ensure instruments are working as anticipated (i.e., recording plausible measurements at the intended frequency). Should obvious equipment malfunctions or instrument damage be identified, the field personnel shall communicate this to the Environmental Manager.

5.2.2 Groundwater Quality QA/QC

5.2.2.1 Blanks

Blank water quality samples are comprised of analyte-free reagent water and are used to assess sample contamination (as recommended by BC MOE, 2013). Field blanks are used to detect potential contamination resulting from the sample collection method, handling, filtration, preservation, and exposure to the environment. Blank samples are typically collected by having the environmental monitor pour de-ionized (DI) water into clean sample bottles in the same environment in which actual samples are collected, and then processing the blank at the laboratory in the same manner as other samples.

5.2.2.2 Replicates

Replicates are independent samples collected as close as possible from the same location and at the same time as the original to characterize environmental variability and the precision of the entire sampling and analytical process (as per BC MOE, 2013). For the purpose of this Memorandum, originals and duplicates are considered paired replicates collected from the same location sequentially in time.

The BC Field Sampling Manual (BC MOE, 2013) provides the following acceptability criteria for field duplicates:

> *It should be expected that the Relative Percent Difference (RPD) is somewhat greater than that for laboratory duplicates. If one of a set of duplicate values is at or greater than five times the Method Detection Limit, then RPD values >20% indicate a possible problem, and > 50% indicate a definite problem, most likely either contamination or lack of sample representativeness.*

Any duplicate samples for which the RPD is greater than 20% and greater than 50% are reported. In addition, duplicates that had parameters with RPDs greater than 50%, in which the parameter value was greater than five-times the reportable detection limit (RDL) in at least one of the sample duplicates, are reported in a separate table.

5.2.2.3 Total versus Dissolved Metals

For this QA/QC program, a dissolved metal concentration that is higher than the corresponding total metal concentration is considered to be an indication of potential sample contamination or analytical error. Total and dissolved metals data for samples collected at all water quality monitoring stations will be compared on a quarterly basis. The dissolved metal concentration will be flagged as a potential QA/QC issue if the concentration is >20% higher than the corresponding total metal value in the same sample. Variability of less than 20% is excluded because it is within the analytical margin of error.

Dissolved and total metal pairs are included in this analysis if the dissolved value is greater than five-times its RDL, similar to guidance presented in the BC Field Sampling Manual (BC MOE 2013) for acceptability criteria for duplicate sample. This is more conservative than the industry convention which limits the analysis to parameter pairs where *both* total and dissolved values are greater than five-times RDL.

5.2.2.4 Sample Holding Time

Sample holding time is the length of time between collection of a water sample and its analysis at the laboratory. Recommended sample hold times are summarized in Table 5-1 below. Based on guidance from an accredited laboratory, parameters with the shortest hold-times (three days or less) typically include ammonia (if unpreserved), nitrate / nitrite, pH, and turbidity. Results for these parameters may be associated with higher uncertainty if the hold times are exceeded. Hold times will be re-established as accredited analytical labs updates these criteria.

Table 5-1 Recommended Water Quality Sample Hold Times (from ALS Environmental)

Analytical Parameter	Hold Time
pH	15 Minutes
Electrical Conductivity	28 Days
Turbidity	3 Days
Solids - TDS	7 Days
Alkalinity	14 Days
Bromide, Chloride, Fluoride, Sulfate	28 Days
Total/Dissolved Organic Carbon (DOC)	28 Days
Phosphorus – Total, Total Dissolved	28 Days
Orthophosphate	3 Days
Ammonia-N, Total Nitrogen	28 Days
Nitrate/Nitrite	3 Days
Metals – Total/Dissolved; Hardness	180 Days
Mercury – Total/Dissolved	28 Days
Sulfide	7 days
Cyanide – Total/WAD/Free/Thiocyanate	14 Days
Trihalomethanes	14 days
Coliform (Total, E. coli)	30 hours

6.0 REPORTING AND ANNUAL REVIEW

Reporting will occur internally on a quarterly basis, and externally on an annual basis, as detailed below.

6.1 Quarterly Reporting

Groundwater monitoring data will be reviewed on a quarterly basis to ensure that data are being collected according to this plan, pre-emptively identify QA/QC issues that may compromise future data collection and facilitate annual reporting to regulators. Brief quarterly reports are recommended for internal purposes which summarize the following:

- Stations were accessed/downloaded/sampled during the monitoring round.
- Any station/equipment damage/malfunction and recommended remedial action (i.e., ditching, battery/logger replacements, pump repair etc.).
- Any QA/QC issues associated with groundwater samples (i.e., contamination of field blanks, poor RPD between field duplicates) and recommended corrective action (i.e., improvements in field equipment decontamination measures).

6.2 Annual Interpretive Reports

Annual interpretive reports are assumed to be a water licence requirement for the mine. It is anticipated that annual interpretive reports will encompass data from the meteorology, surface and ground water, heap leach and waste rock monitoring programs. These reports will summarize the data collected for the previous year in tabular and graphical format, as well as providing summary statistics.

The following data related to groundwater monitoring will be included in the annual report:

- Time-series plots water levels and maps of potentiometric surfaces.
- Plots of groundwater quality variation over time for select parameters plus tabulated values of all parameters.
- Plots and/or tables of water volumes extracted from the well field.
- Results of seepage monitoring (flows, if measurable; field parameters (pH, EC); full water quality analyses if collection is warranted).

Data analysis and interpretation will identify trends, anomalies, and other relevant information. Large divergences from historical ranges will be noted. Owing to the extended baseline groundwater quality data set available for the project, any trends identified through visual inspection can be compared to baseline percentile ranges computed for each well. While all parameters will be reviewed, particular attention should be paid to parameters of concern of that have been identified in the effects assessment on groundwater which include nitrate, aluminum, arsenic, chromium, copper and zinc. The data will be interpreted in the context of mine progression, mine waste deposition, site water management activities (such as pit lake levels and water quality), heap leach and other facility seepage monitoring and surface water quality and hydrometric monitoring.

Any significant changes to the monitoring network, such as changes to instrumentation, or location of monitoring points will be documented, along with a rationale for the changes. If necessary, recommendations will be made concerning upgrades or changes that are deemed necessary for the

following year, along with the rationale. Changes to this plan may also be made as necessary, due to changes in site conditions.

The annual interpretive reports will be shared with regulators as well as First Nations. Results of these reports will be interpreted in conjunction with the Surface Water Quality Annual Report to inform overall mitigation strategies, if required.

7.0 REFERENCES

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