APPENDIX B5- QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN, VERSION 2 (JULY 2014)

AGNICO EAGLE

MEADOWBANK GOLD PROJECT

Quality Assurance / Quality Control (QA/QC) Plan

In Accordance with Water License 2AM-MEA0815

Prepared by:
Agnico Eagle Mines Limited – Meadowbank Division

Version 2
July 2014

EXECUTIVE SUMMARY

This document presents the Meadowbank Mine Quality Assurance / Quality Control (QA/QC) Plan, a requirement of the Meadowbank Type A Water License No. 2AM-MEA0815, specified under Part I, Condition 19:

> *The Licensee shall submit within six (6) months of License approval to an Analyst for approval, a Quality Assurance/ Quality Control Plan that includes requirements for independent third party sampling and analysis. This Plan shall be developed in accordance with the 1996 Quality Assurance (QA) and Quality Control (QC) Guidelines for Use by Class "A" (INAC).*

This Plan also supports the following conditions of the Meadowbank Project Certificate No. 004, issued by the Nunavut Impact Review Board (NIRB):

> *Condition 6*
>
> *All monitoring information collected pursuant to regulatory requirements for the Meadowbank Project shall contain the following information:*
>
> *a. The person(s) who performed the sampling or took the measurements including any accreditations;*
>
> *b. The date, time and place of sampling or measurement, and weather conditions;*
>
> *c. Date of analysis;*
>
> *d. Name of the person(s) who performed the analysis including accreditations;*
>
> *e. Analytical methods or techniques used; and*
>
> *f. Results of any analysis.*
>
> *Condition 23*
>
> *For the purposes of monitoring quality assurance and quality control ("QA/QC")…. ensure that water quality monitoring performed at locations within receiving waters that allow for an assimilative capacity assessment of concern to regulators, be carried out by an independent contractor and submitted to an independent accredited lab for analysis, on a type and frequency basis as determined by the NWB. Results of analysis shall be provided to the NWB and NIRB's Monitoring Officer.*

IMPLEMENTATION SCHEDULE

As required by Water License 2AM-MEA0815, Part B, Item 16, the proposed implementation schedule for this Plan is outlined below.

This Plan will be immediately implemented (July 2014) subject to any modifications proposed by the Analyst or the NWB as a result of the review and approval process**.**

DISTRIBUTION LIST

AEM – Environment Superintendent
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AEM – Environmental Technician

DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
1	09/01/01			Comprehensive plan for Meadowbank Project
2	14/06/20			Comprehensive update of the plan for Meadowbank Project

Prepared By: Environmental Department

Approved by:_____

Ryan VanEngen
Environmental Superintendent - Interim

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SECTION 1. INTRODUCTION

The objective of quality assurance and quality control (QA/QC) program is to assure that the chemical data collected are representative of the material being sampled, are of known quality, are properly documented, and are scientifically defensible. Data quality was assured throughout the collection and analysis of samples using specified standardized procedures, by the employment of accredited laboratories, and by staffing the program with experienced technicians.

This Plan documents the QA/QC program for the Meadowbank Project required by Type A Water License 2AM-MEA0815. It has been developed in accordance with the Aboriginal Affairs and Northern Development Canada (AANDC) 1996 '*Guidelines for Use by Class "A" Licensees in Meeting SNP Requirements and for Submission of a QA/QC Plan',* which includes the following definitions:

Quality Assurance: the system of activities designed to better ensure that quality control is done effectively; and

Quality Control: the use of established procedures to achieve standards of measurement for the three principal components of quality – precision, accuracy and reliability.

This QA/QC Plan sets out standard procedures for sample and data collection with respect to surface water and groundwater sampling in support of monitoring programs outlined in the *Water Quality and Flow Monitoring Plan*, *Groundwater Monitoring Plan* and *Core Receiving Environment Monitoring Program (CREMP)*. The QA/QC plan will be reviewed as needed and updated as required by the Environmental Superintendent.

Section 2 includes procedures for field sample collection and handling, Section 3 outlines external and internal laboratory requirements and Section 4 sets out data verification procedures and regulatory reporting requirements. Appendix A presents an updated Schedule I - Table 1 and 2 that is presented to the NWB as part of the Type A License renewal.

SECTION 2. FIELD SAMPLING

Sampling stations, frequency and parameters are set out in Type A Water License 2AM-MEA0815 Schedule I – Conditions Applying to General and Aquatic Effects Monitoring (Appendix A)[1]. All sampling stations have a GPS location and are landmarked. All stations are used repeatedly with the same qualified personnel and techniques to reduce operational error. The following sections outline the standard procedures for collection and handling of all surface water and groundwater samples.

2.1 SAMPLING EQUIPMENT

New laboratory supplied containers are used for sample collection. The bottles are either polyethylene plastic or glass, dependent on the specific parameter being analyzed.

The Analite NEP 160 Meter (turbidity), Oakton PCS35 Meter (pH and conductivity) and Hanna Multi-Parameter Meter (pH, dissolved oxygen and conductivity) are handheld instruments used to collect, as required, field parameters. The YSI 556 MPS (multiprobe system) was not used on a regular basis but can be used to measure parameter on field like pH, temperature, conductivity, dissolved oxygen and oxidation reduction potential (ORP) data as required. The instruments are calibrated before each sample event to ensure optimal performance. Calibration and maintenance procedures are followed as set out by the supplier's operation manual. Equipment and bottles are selected so that they do not contaminate or alter the concentrations of parameters of interest according to laboratory standards.

For the groundwater sampling and to collect water samples at depth from the surrounding lake receiving environments, a pump with tubing is used. Low Density Poly Ethylene (LDPE) tubing, filter apparatus, manual pump and ash less filter paper are used to filter water for specific analyses (i.e. dissolved metals, chlorophyll a) and/or for depth integrated sampling (i.e. chlorophyll a, phytoplankton or biological oxygen demand).

2.2 SAMPLING METHODS AND HANDLING

2.2.1 Sample Identification

All samples have a unique sample identification name based on a station identifier, date and time of collection. For duplicate and field blank, the sample identification are still based on the station identifier, date and time but followed by DUP (duplicate) or FB (field blank).

All sample bottles are identified with the sample identification and date of collection. This information is marked on a label with a water resistant pen and affixed to the sample bottle. Additional information like time of sampling and parameters to analyses are included in the analysis request that will be sent to the accredited laboratory.

[1] Refer to Water Quality Flow and Management Plan, Section 2.3 for more detailed description of station locations and Type A License renewal – updated Schedule I – Tables 1 and 2. The actual location of each sampling site will be marked with a highly visible stake with appropriate signage attached that will define the exact location of the collection point

2.2.2 Surface Water Sampling

The bottles are pre-labelled with the required sample identification before going on the field. Surface grab samples are collected by submerging the sample bottle to half depth of the stream. For sumps, diversion ditches and piped discharge points, sample are collected below the surface of the water.

Samples bottles are provided by the accredited laboratory. Bottles are received pre-rinsed and pre-preserved or pre-rinsed with vials of preservative that are added in the field by qualified technicians or biologists. In the case that bottles are not pre-preserved, bottles are rinsed three times with sample water before filling. When sampling bottle contains preservative, the bottle is filled by using another clean bottle to avoid any release of preservative. Sometimes, a preservative is added after filling as directed by the laboratory; see Section 2.2.4 for more detail on preservation. The bottles are filled properly to allow mixing, preservative addition and thermal expansion.

Samples analyzed for dissolved metals are filtered through ash less filter paper at the time of collection when the delay before analyses is long. However, when the delay before analyses is fast the accredited laboratory filtered the sample before analyses. For chlorophyll A analysis, the sample is filtered through the ashless filter paper. In some case, when the analysis delay is long, the sample is frozen to prevent parameter degradation.

2.2.3 Groundwater Sampling

Well Preparation for Sampling

At the time of purging and sampling the heat trace cables are activated to warm the well pipe. Once the well has been thawed the well is purged.

Well Purging

Depending on the depth of the well, purging is performed by inserting a ¾'' Low Density Polyethylene (LDPE) Waterra tube to approximately 20 meters below the water surface and to use a compressor to push the water out. The wells are purged to remove standing water inside the well and to induce the flow of fresh groundwater from the rock formation. The Waterra tube is lowered to 20 meters below the remaining water and a compressor is used to completely dry the well. The quality of the purged water is monitored for pH, conductivity, temperature, water clarity and color (visual observation) during this activity. Three (3) well volumes of water between the in-well packer and bottom of screened interval) are removed prior to sampling or until the monitored parameters stabilize (values remaining within 10% for three consecutive readings).

Groundwater Sampling

Groundwater is sampled immediately after purging by lowering the intake of the DVP tubing to 3 to 5 meters above the screened interval.

A groundwater sample is collected in clean, laboratory-supplied containers as per the instructions in the previous section. Samples analyzed for dissolved metals are filtered through a 45 µm inline filter.

Samples are collected in duplicate (see Section 2.2.5) and submitted to the analytical accredited laboratory. Duplicate samples are collected.

Measurements of groundwater temperature, pH, electrical conductivity, and salinity are obtained in the field during purging and sampling. Measurements are recorded for future reference and to check against laboratory data.

The following procedures are followed to provide data quality control on the samples:

- Measurement of field parameters at selected intervals until stable readings (within 10% of each other);
- Minimization of the exposure of the sampled water to the atmosphere;
- Use of compressed, inert gas (nitrogen) to evacuate water for sample collection;
- In-situ measurement of sensitive chemical parameters (pH, conductivity, where applicable); and
- Abiding by sample preservation methods (refrigeration and use of preservatives where needed); and specified holding times.

Bottles are labelled with required information.

2.2.4 Preservation

Preservatives, if required, are added to sample bottles by the laboratory or added by the technician after filling, as directed by the analytical laboratory. Table 2.1 summarizes the minimum sample volumes, preservation and holding times for each analyte. This information was provided by the accredited laboratory Multilab.

Table 2-1: Summary of Sampling Requirements

Parameters	Matrix				Type of Bottle	Preservative	Volume
	Drinking Water	Waste Water	Surface Water	Ground Water (1)			
Microbiology							
Escherichia coli, total coliforms, A.A.H.B	48h	48h	48h	48h	PPS	TS, E	250ml
Enterococcus	48h	48h	48h	48h	PPS	TS, E	250ml
Thermo tolerant coliforms (fecal)	48h	48h	48h	48h	PPS	TS, E	250ml
Inorganic Chemistry							
Absorbance UV, Transmittance UV				24h	P. T. V	N	125ml
Alkalinity, Acidity, Bicarbonates, Carbonates	14d	14d	14d	14d	P, T, V	N	250ml
Ammonia nitrogen (NH_3-NH_4)	28d	28d	28d	28d	P, T, V	AS	125ml
Kjeldahl ammonia (NTK)		28d	28d	28d	P, T, V	AS	125ml
Anions (Cl, F,SO_4)	28d	28d	28d	28d	P, T, V	N	250ml
Color, Free & total Chlorine	48h	48h	48h	48h	P, T, V	N	125ml
Conductivity	28d	28d	28d	28d	P, T, V	N	250ml
Cyanides total/available, Cyanides	14d	14d	14d	14d	P, T, V	NaOH	250ml
BOD_5/Carbonated BOD_5 (2)		48h/4°	48h/4°		P, T, V	N	250ml
COD (chemical oxygen demand)		28d	28d		P, T, V	AS	125ml

Mercury (Hg)	28d	28d	28d	28d	P, T, V	AN	250ml
Total/dissolved metals (filtered on field)	180d	180d	180d	180d	P, T, V	AN	250ml
Dissolved Metals (filtered in the laboratory)	24h	24h	24h	24h	P, T, V	N	250ml
Total suspended solids & Volatile TSS		7d	7d	7d	P. T. V	N	500ml
NH_3 or NH_4		24h	24h	24h	P.T.V	N+AS	2/125ml
Nitrites (NO_2), Nitrates (NO_3), Turbidity	48h	48h	48h	48h	P, T, V	N	250ml
Nitrites-Nitrates (NO_2-NO_3)	28d	28d	28d	28d	P, T, V	AS	250ml
O-Phosphates (O-PO_4)	48h	48h	48h	48h	P, T, V	N	500ml
pH	24h	24h	24h	24h	P, T, V	N	125ml
Total Phosphorus (P-tot)	28d	28d	28d	28d	P, T, V	AS	125ml
Dissolved solids (TDS)		7d	7d	7d	P. T. V	N	250ml
Total solids		7d	7d	7d	P. T. V	N	250ml
Sulphides (H_2S) (3)	28d	28d	28d	28d	P. T. V	E.D.T.A	125ml
Thiosulfates	48h	48h	48h	48h	P. T. V	N	125ml
Radioactive & Organic Chemistry							
Fatty resin acids (S-T)	--	28d	28d	--	VA, VT	AS	1L
Congeners PCB (S-T)	28d	28d	28d	28d	VA, VT	N	1L
Chlorobenzene	28d	28d	28d	28d	2 Vial+1 blank	TSS	2/40ml
Total Organic Carbon (TOC)	28d	28d	28d	28d	P, T, V (B)	AC	100ml
Dissolved Organic Carbon (DOC)	48h	48h	48h	48h	P, T, V (B)	N	100ml
Total Inorganic Carbon (CIT)	48h	48h	48h	48h	P, T, V (B)	N	100ml
Phenolic compound (GC-MS)	28d	28d	28d	28d	VA, VT	AS	1L
Glyphosate (S-T)	14d	14d	14d	14d	P.T	N	500ml
PAH	28d	28d	28d	28d	VB	AS	1L
Oil & Greases (total and non-polar)	28d	28d	28d	28d	VA, VT	AS	1L
C10-C50 HP and/or Petroleum Product Identification	28d	28d	28d	28d	VA, VT	AS	1L
Phenol index	28d	28d	28d	28d	VA, VT	AS	500ml
Radium-226	180d	180d	180d	180d	P, T. V	AN	1L
VOC (MAH, CAH, THM, BTEX) (3)	28d	28d	28d	28d	2 Vial+1 blank	TSS	2/40ml

Type of bottle:
P.S.V.T.: plastic bottle, bag or glass bottle with Teflon cap
P, T: Plastic bottle or plastic bottle with Teflon cap
P.T.V.: Plastic bottle or glass bottle with plastic or Teflon cap
PPS: Sterile propyl ethylene bottle
VA: Clear or amber glass with aluminium or Teflon seal
VB: Amber glass (or clear glass covered with aluminium paper) aluminium seal of Teflon
VT: Clear or amber glass bottle with Teflon seal
Preservative:
AC: 0.1ml (100µl) of HCl per 100ml of sample
AcZn: 0.2ml zinc acetate 2N per 100ml of sample and NaOH 10N to pH >9
AN: HNO3 to pH <2
AS: H2SO4 to pH <2
E: 2.5ml EDTA 1.5% (p/v) per 100ml of sample if heavy metals are suspected
ED: 0.1ml diamine ethylene 45 mg/l per 100 ml of sample
EDTA: 1ml EDTA 0.25M per 100ml of sample
N: No preservative
NaOH: NaOH 10N to >12
TS: Sodium thiosulfate final concentration in the sample of 0.1% (p/v)
TSS: about 40mg of thiosulfate sodium

2.2.5 Field Duplicates and Blanks

One field duplicate, one filter blank and one field blank are collected for a) every 10 samples (i.e. duplicate samples are taken for 10% of the samples), b) each sampling event or c) once per year as shown in Table 2.2. Field duplicates and filter blanks are collected and handled in the same manner as the other samples in the field. Field blanks are samples of distilled water handled concurrently and in the same manner as the other samples in the field.

Table 2-2: Quality Control Sample Frequency

Sampling Site	QA/QC Sampling Frequency
Compliance Monitoring Program	
Attenuation ponds	1 field duplicate and 1 field blank per year
Mine facilities - operations	1 field duplicate per year
Mine facilities - closure	1 field duplicate per year
Mine facilities - post-closure	1 field duplicate per year
Seep water chemistry	1 field duplicate and 1 field blank per 10 samples
Groundwater chemistry	1 field duplicate and 1 field blank per groundwater sampling event
Receiving water chemistry	Blind field duplicates, laboratory and field blanks, sediment cleaning swipes, laboratory matrix spike duplicates per 10 samples (CREMP)
Event Monitoring Program	
Each event	One field duplicate per 10 samples

The duplicate samples are given sample identification numbers and included in the sample stream. The indication of the sample as a duplicate is maintained in the data records at site.

2.2.6 SAMPLE TRANSPORT

All water samples are stored upright in coolers with ice packs and preserved as specified by the laboratory. Samples are shipped to the external laboratory as soon as possible via chartered aircraft and dedicated ground transportation to ensure arrival in a safe and timely manner. If sample can't be shipped the same day, there are conserved to the refrigerator at 4°C until shipping.

A Chain of Custody form with the following information is completed for every shipment of samples:

- Company name and sampler's name;
- Sample identification name;
- Time and date of sampling;
- Presence and type of preservative and whether the sample was filtered or not;

- Requested analytical parameters for each bottle;
- Time and date of shipping; and
- Analytical laboratory address and contact person.

One electronic or PDF copy is send by email to the laboratory and one electronically copy is kept at the mine site for reference.

SECTION 3. LABORATORY ANALYSIS

3.1 EXTERNAL LABORATORY

All analytical chemistry analyses are performed by an accredited laboratory.

In many cases these analyses are performed by MultiLab Direct in Val d'Or, Quebec, an accredited facility (see Appendix B) that is located in Val D'Or. This ensures that samples collected meet holding time requirements for all regulatory sampling. All data from MultiLab undergoes a rigorous internal QA/QC process, including the use of spiked samples and duplicate samples. All QA/QC data passed the laboratories acceptable limits. All toxicity tests were performed by Maxxam Analytique in Quebec City and Exova in Saint-Augustin-de-Desmaures, QC. Testing was conducted as stipulated in the corresponding Environment Canada Biological Test Methods.

AEM also require the services of laboratory as Maxxam in Edmonton, Alberta, and SGS in Lake Filed, Ontario for some parameters that Multilab is not accredited for. AEM also uses the services of ALS for many of the CREMP and AEMP water quality analysis.

3.2 INTERNAL LABORATORY

The assay lab at the Meadowbank site is not an accredited laboratory but is periodically used for "real-time" results for some parameters like TSS, Copper and WAD Cyanide. These results are for observational purposes and do not meet the standards of an accredited laboratory.

SECTION 4. DATA REQUIREMENTS

4.1 DATA COLLECTION

Since the first quarter of 2009, a database of all water sampling data is maintained at the Meadowbank Mine site. The database has been designed based on the sample stations in the compliance monitoring program of 2AM-MEA0815 Schedule I and the various discharge limits designated in the license. The database functionality includes event scheduling, trend analysis and flagging out of compliance samples, all to enhance the effectiveness of the QA/QC program. All of this information is presented to regulators in the annual report.

The following data is collected for each sample in the field and will be entered into the database by the sampler for the corresponding sampling station:

a) Sample identification name;
b) Name of sampler;
c) Date and time of sampling or measurement; and
d) Physical characteristics (pH, temperature etc.), if required.

Upon receipt of sample results from the laboratory, the data will be input to the database and matched on sample identification name.

The analysis certificate for each sample from the accredited laboratory will include but not limited to:

a) Analytical methods or techniques used;
b) Date of analysis;
c) Name of the person(s) / laboratory that approved the certificate; and
d) Results of any analysis.

4.2 DATA VERIFICATION

Upon reception of analytical results, the field blank and duplicate analyses will be verified for potential contamination and accuracy, respectively. Results will be interpreted and recommended actions will be taken if results are not accurate.

4.3 EXCEEDENCE REPORTING

Any measured concentration at a sample station exceeding a regulated discharge criterion stipulated in Water License 2AM-MEA0815 or the Metal Mining Effluent Regulations (MMER) will be reported to the NWB, EC and AANDC water inspector within 30 days of the receipt of the analysis. In addition, results of the action plan will be reported and, where necessary, mitigation options identified within 90 days after receipt of the analyses.

Appendix A
Water License 2AM-MEA0815 Schedule I
Table 1: Monitoring Group
Table 2: Monitoring Program

Table 1: Monitoring Group

Group	Parameters
1	pH, turbidity, hardness, alkalinity, ammonia, ammonia nitrogen, total metals (aluminum, arsenic, barium, cadmium, chloride, chromium, copper, fluoride, iron, lead, manganese, mercury, molybdenum, nickel, nitrate, selenium, silver, thallium, zinc) sulphate, total dissolved solids (TDS), TSS, total cyanide
2	**Total and Dissolved metals:** aluminum, antimony, arsenic, boron, barium, beryllium, cadmium, copper, chromium, iron, lithium, manganese, mercury, molybdenum, nickel, lead, selenium, tin, strontium, titanium, thallium, uranium, vanadium and zinc **Nutrients:** Ammonia-nitrogen, total kjeldahl nitrogen, nitrate nitrogen, nitrite-nitrogen, ortho-phosphate, total phosphorous, total organic carbon, total dissolved organic carbon and reactive silica; **Conventional Parameters:** bicarbonate alkalinity, chloride, carbonate alkalinity, conductivity, hardness, calcium, potassium, magnesium, sodium, sulphate, pH, total alkalinity, TDS, and TSS, turbidity; Total cyanide and free cyanide.
3	MMER parameters (total cyanide, arsenic, copper, lead, nickel, zinc, radium 226, total suspended solids, pH), sulphate , turbidity and total aluminium.
4	Total Arsenic, Total Copper, Total Lead, Total Nickel, TSS, Ammonia, Total Cyanide, Benzene, Toluene, Ethylbenzene, Xylene, TPH, Oil & Grease, pH
MMER	total cyanide, arsenic, copper, lead, nickel, zinc, radium 226, total suspended solids, pH, effluent volumes and flow rate of discharge, acute toxicity, Daphnia Magna and environmental effects monitoring (EEM).
Full Suite	Group 2, Total Petroleum Hydrocarbons, Turbidity

Table 2: Monitoring Program

Station	Description	Phase	Monitoring Parameters	Frequency
Mine Site				
ST-DC-1 to TBD	Monitoring stations during Dike Construction as defined in Final Water Quality Monitoring and Management Plan for Dike Construction and Dewatering referred to in Part D Item 11	Construction	As defined in Final Water Quality Monitoring and Management Plan for Dike Construction and Dewatering referred to in Part D Item 11	As defined in Final Water Quality Monitoring and Management Plan for Dike Construction and Dewatering referred to in Part D Item 11
ST-DD-1 to TBD	Monitoring stations during Dike Dewatering as defined in Water Quality Monitoring and Management Plan for Dike Construction and Dewatering referred to in Part D Item 11	Construction	As defined in Final Water Quality Monitoring and Management Plan for Dike Construction and Dewatering referred to in Part D Item 11	As defined in Final Water Quality Monitoring and Management Plan for Dike Construction and Dewatering referred to in Part D Item 11
ST-1	Water Intake for camp, mill and reflooding	Late operation, closure	Volume (m^3)	Monthly
ST-3	Water Intake for Emulsion Plant	Late operation, closure	Volume (m^3)	Monthly
ST-4	Water reclaimed from Tailings Storage Facility	Late operation, closure	Volume (m^3)	Monthly
ST-5	Portage Area (east) diversion ditch	Late operation, closure	Group 3	Monthly during open water
ST-6	Portage Area (west) diversion ditch	Late operation, closure	Group 3	Monthly during open water
ST-8	East Dike Seepage Discharge	Late operation, closure	Group 3	Monthly
ST-9	Portage Attenuation Pond prior to discharge through Third Portage Lake Outfall Diffuser	Early operation	Full Suite	Prior to discharge and Weekly during discharge
			Volume (m^3)	Daily during periods of discharge
			Acute Lethality	Once prior to discharge and Monthly thereafter
ST-10	Vault Attenuation Pond prior to discharge through Wally Lake Outfall Diffuser	Late operation	Full Suite	Prior to discharge and Weekly during discharge
			Volume (m^3)	Daily during periods of discharge
			Acute Lethality	Once prior to discharge and Monthly thereafter
ST-11	Tailings Storage Facility	Post closure	Group 1	Annually during open water

ST-12	Portage/ Goose Pit Lake	Post closure	Full Suite	Annually during open water season
ST-13	Vault Pit Lake	Post closure	Full Suite	Annually during open water
ST-14 (TEH-11)	Discharge to the TSF from Landfarm sump at mine site	Late operation, closure	Group 4	Prior to discharge
			Volume (m^3)	Daily during periods of discharge
ST-16	Portage Rock Storage Facility	Late operation	Group 1	Monthly during open water
		Closure	Group 1	Bi-annually during open water
ST-17**	North Portage Pit Sump	Operation	Group 1	Monthly during open water
			Volume (m^3)	Daily during periods of discharge
	Portage Pit Lake	Late operation	Group 2	Monthly during open water
		Closure	Group 2	Bi-annually during open water
ST-19**	South Portage Pit Sump	Early operations	Group 1	Monthly during open water
			Volume	Daily during periods of discharge
	Third Portage Pit Lake	Late operations	Group 2	Monthly during open water
ST-20	Goose Island Pit Sump	Early operations	Group 1	Monthly during open water
			Volume	Daily during periods of discharge
	Goose Island Pit Lake	Late operations	Group 2	Monthly during open water
		Closure	Group 2	Bi-annually during open water
ST-21	Tailings Reclaim Pond	Late operation	Group 1	Monthly during open water
ST-22	Tailings Storage Facility	Closure (drainage runoff)	Group 2	Bi-annually during open water
ST-23	Vault Pit Sump	Late operations	Group 2	Monthly during open water
			Volume (m^3)	Daily during periods of discharge
	Vault Pit Lake	Closure	Group 2	Bi-annually during open water
ST-25	Vault Attenuation Pond	Late operation	Group 1	Monthly during open water
ST-S-1 to TBD	Seeps (to be determined)	Late operations, closure	Group 1	Monthly or as found

ST-GW-1 to TBD	Groundwater wells (to be determined)	Early operations, late operations, closure	Group 2	Annually
ST-AEMP-1 to TBD	Receiving AEMP and CREMP	Late operations, closure	Group 2	A minimum of 5 events per year at CREMP stations. Ideally 3 during open water and 2 during winter (through ice). TPL assay, NP2, NP1 and Dogleg ponds to be monitored monthly during open water (July, Aug, and Sept.) Monthly field limnology data collected throughout year at smaller number of locations (through ice)
ST-MMER-1 to TBD	Vault and Portage effluent outfall	Late operations	MMER	Weekly during open water
ST-37	Secondary containment sump at the Bulk Fuel Storage Facility at Meadowbank	Late Operation, closure	Group 4	Prior to discharge or transfer of effluent
ST-38	Secondary containment sump at the Bulk Fuel Storage Facility in Baker Lake – Jet-A containment	Late Operation, closure	Group 4	Prior to discharge or transfer of effluent
ST-40 (MEA-4)	Secondary containment sump at the Bulk Fuel Diesel Storage Facility in Baker Lake	Late operation, closure	Group 4	Prior to discharge or transfer of Effluent

Appendix B
Multilab Accreditate Certificate

Multilab's Rouyn-Noranda and Val-D'Or Laboratories

Matrix legend:
EP: Drinking Water
EU: waste water, ES: Ground water, EA: Surface water
S: Soil, SO: Solid, Lix: Lixiat
MD: Dangerous mannor

Location legend :
R-N : Rouyn-Noranda
V-D : Val-d'Or
Color Legend:
Aaccreditation in wait
To remove wen acceditation will be received

Dom	Parameters	Matrix	Method	location
1	Total and fecal coliforms oru *Escherichia coli*	EP, ES	Membrane filtration	R-N
2	AAHB, Enterococcus	EP, ES	Culture, Membrane filtration	R-N
4	Total coliforms (presence/abscence), Escheria coli (presence/abscence)	EP, ES	Presence/Absence	R-N
11	Ba, B, Cd, Cr, Pb, Cu	EP,ES	ICP-MS	R-N
12	Hg	EP,ES	Mercury analysor	R-N
13	As, Se	EP,ES	ICP-MS	R-N
14	U	EP, Lix	ICP-MS	R-N
15	CN, F, NO2-NO3, Turbidity	EP, ES, EA	Colorimetry, ionic chromatography, ion analyzer, turbidimetor	R-N
17	Nh3-NH4, dissolved bromine, CNd, NO2, NO3, Ptot, H2S	ES, EP, EA, Lix	Ion analyzer, ICP-MS, Colorimetry, Ion analysor, Optiquc-ICP, Colorimetry	R-N
20	T.O.C.	EU, EA		V-D
23	Ca, Fe, Mg, Mn, Na	ES	ICP-MS	R-N
28	Sb	ES, EP	ICP-MS	R-N
30	Fecal coliforms	ES, EA, EU, lix	Membrane filtration	R-N
31	Total coliforms	EU	Membrane filtration	R-N
40	BOD5, COD	EP, EU	Specific electrod, Colorimetry	R-N
42	NH3-NH4, NTK, OPO4, Ptot	EU, EA		R-N
43	Total solids	EU	Gravimetry	V-D, R-N
49	Phenol index (colorimetric)	EU, ES, EA, Lix	Colorimetry	V-D
50	TSS (total suspended solids)	EU, ES, lix	Gravimetry	R-N
58	Conductivity	ES, EU	Automatic Titration	V-D, R-N
60	Chloride, color, pH, SO4	EU, lix	Ion analyzer, Colorimetry, automatic titration, ion analyzer	R-N
63	As, Hg, Se	EU, lix	ICP-MS	R-N
64	Cd, Cr, Cu, Fe, Ni, Pb, Zn	EU, lix	ICP-MS	R-N
66	Oils and greases	EU	Gravimetry	V-D
77	Al, Sb, Ag, As, Ba, Be, Ca, Co, Mg, Mn	EU, lix	ICP-MS	R-N
86	pH	EP, EU, ES, lix	Automatic Titration	V-D
88	Al, Ag, As, Cd, Cr, Cu, Fe, Mn, Hg, Ni, Pb, Se, Na, V, Zn (métaux pour mines)	EU, lix	ICP-MS	R-N
91	NH3-NH4, CNO, Cn, NO2+NO3, MES, H2S, SCN, S2O3	EU, EA		R-N
92	Cyanid, TSS	EU	Colorimetry, gravimetry	V-D, R-N
97	Ba, Sn, Mo	EU	ICP-MS	R-N
109	C10-C50 (hydrocarbures pétroliers)	EP, EU, EA, lix	GC-FID	V-D
120	Policyclic aromatic hydrocarbon (PAH) *Benzo (a) pyrène*	EP, EU, ES	GC-MS	V-D