



Meliadine Gold Mine
NWB 2AM-MEL1631
November 2022 Monthly Report

Prepared for:

Nunavut Water Board

Prepared by:

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BACKGROUND

As required under Part I, Item 9 of amended Type A Water License 2AM-MEL1631, this report documents the water management and monitoring activities at the mine site and provides a summary of spills/actions for the month of November 2022.

WATER MANAGEMENT

1.1 WATER USAGE

Table 1.1 details monthly water usage approved under Water License 2AM-MEL1631:

Table 1.1: Summary of the monthly water usage in November 2022

	Monthly Usage (m ³)
Camp, Mill, Dust suppression (MEL-11)	41,327
Dust suppression (water obtained along AWAR/Meliadine River)	0
Total November	41,327
Year to date 2022	421,907

1.2 DEWATERING ACTIVITIES

No dewatering activities took place during the month.

1.3 MELIADINE DISCHARGE

Discharge from the EWTP into Meliadine Lake via the Final Discharge Point (MEL-14) started July 1st, 2022, and stopped September 25th, 2022. No discharge to Meliadine Lake occurred during the month.

1.4 MELVIN BAY DISCHARGE

No discharge to Melvin Bay occurred during the month.

1.5 SEEPAGE AND RUNOFF FROM THE LANDFILL AND LANDFARM

The 2AM-MEL1631 landfill and landfarm were commissioned in November 2017. No seepage or runoff was observed during the month.

1.6 SEWAGE TREATMENT PLANT

Approximately 4,591 m³ of treated wastewater was discharged into CP1 during the month. Approximately 43 m³ of sludge was removed during the month and disposed of in WRSF1.

1.7 CONTAINMENTS

No discharge from the Itivia fuel containment facility (Station Mel-25) occurred during the month.

1.8 MONITORING ANALYTICAL DATA

One (1) sample related to the Water Licence was taken during the month. The analytical results from this sampling event are presented in Appendix. No exceedance occurred in November 2022.

MATERIAL MANAGEMENT

1.9 LANDFILL / LANDFARM

The volume of material placed into the landfill is evaluated through periodic surveys. According to the most recent survey done on November 13th, 2022, the landfill contained approximately 21,711 m³ of material.

Approximately 0.5 m³ of contaminated material was put into the Type A Landfarm during the month. According to the most recent survey done on August 5th, 2022, the Landfarm A contained approximately 522 m³ of material.

1.10 ORE

Approximately 155,280 tonnes of ore were processed through the Mill during the month.

1.11 WASTE ROCK STORAGE FACILITY

A total of 60,384 tonnes of waste rock was removed in the underground mine development process during the month while 224,052 tonnes of waste rock were removed from open pit mining. 78,925 tonnes were used as underground dry rockfill.

1.12 TAILINGS

117,216 dry tonnes of filtered tailings were sent to the Tailing Storage Facility during the month. 38,064 tonnes of tailings were used for paste underground backfill.

SECTION 4 SPILL MANAGEMENT

4.1 INTERNAL AND REPORTABLE SPILLS

Spills reported internally (16) are listed in the table 4.1 and were managed according to Agnico Eagle's spill contingency plan. Spills were contained and cleaned up, contaminated material was disposed of in an appropriate manner, and the clean-up actions were monitored closely by the Environment Department. Five (5) reportable spills occurred during the month (Refer to grey shading in Table 4.1).

Table 4.1: Summary of Agnico Eagle's Spill Reports in November 2022

Date and time of occurrence	If material not listed in dropdown or more details, enter here	Estimated quantity	Exact location of incident	Description of incident	Describe immediate corrective actions
Tuesday, November 01, 2022 10:30:00 PM	Wash Bay Water	800 L	Wash Bay	An estimated 800 L of wash bay water was spilled on the industrial pad due to a failed freshwater line in the wash bay. The freshwater was released into the wash bay sump causing the sump to overflow. The diluted wash bay sump water flowed out the overhead door and on to the industrial pad where it froze in place.	Upon discovery of the spill the freshwater valve was closed. The frozen material was cleaned up using a loader. The frozen wash bay material was then disposed of in Tiriganiaq Pit 2 its disposal location during normal operations.
Wednesday, November 02, 2022 11:30:00 AM	Hydraulic Oil	5 L	TIR01	A hydraulic hose failed while drilling production holes in TIR1 open pit, resulting in a 5 L hydraulic oil spill. The spill was contained to the local area and no water bodies were impacted.	The drilling was stopped immediately, and a bucket was placed under the drill to collect the hydraulic oil. Spill pads were used to clean up the remaining material and placed in an oily solids Hazardous waste barrel.
Thursday, November 03, 2022 1:30:00 PM	Engine Coolant	80 L	TIR01 ramp, floor	A failed coolant line on a haul truck traveling down the TIR01 pit ramp resulted in an 80 L Engine coolant spill.	A loader and excavator were used to clean-up the contaminated material that was released on the ramp and in the open pit. The contaminated material was stockpiled and disposed of in the contaminated snow cell.

Wednesday, November 09, 2022 12:00:00 AM	Meliadine Lake Water	1000 m ³	Fresh Water Line	At approximately 4 am the fresh water line that conveys water from Meliadine Lake to the Meliadine Water Treatment Plant (WTP) and mill failed resulting in a 1000 m3 fresh water release (Meliadine lake water). Upon verification, the failure occurred at the "T" junction where the line splits between the Water Treatment Plant and the mill.	The raw Meliadine Lake water flowed in channel 2 where it froze, no further clean up occurred. At approximately 11:00 a new "Y" joint was installed, and the repair was complete.
Saturday, November 12, 2022 12:30:00 AM	Hydraulic Oil	5 L	Haul road Y intersection close to paste line	A failed hydraulic line on an excavator resulted in a 5 L hydraulic oil spill on the haul road. The equipment was stopped and moved to the maintenance shop for repair.	The spill was cleaned up with equipment and absorbent pads. Approximately 0.5 m ³ of contaminated material was placed in Landfarm "A".
Sunday, November 13, 2022 7:30:00 AM	Hydraulic Fluid	15 L	New CII/Filter Press	A failed hydraulic line on a loader resulted in a 15 L hydraulic oil spill to the industrial pad. The equipment was shut down and clean-up initiated.	Spill kit with absorbent pads were used to collect the free fluid. An excavator was used to clean-up the contaminated material which was placed in a quatex bag for disposal.
Monday, November 14, 2022 11:30:00 AM	Coolant	3 L	WRSF3	A loose coolant connection on a haul truck resulted in a 3 L coolant spill on the haul road.	The haul truck was stopped, and absorbent pads and a drip tray placed under the haul truck to collect the coolant until the repair was complete. Spill pads and contaminated material were placed in a quatex bag for disposal.
Monday, November 14, 2022 6:00:00 PM	Freshwater (lake)	20 m3	Explo Camp Freshwater tank	A broken sprinkler head in N wing at the exploration camp resulted in 2 of 3 freshwater fire suppression tanks draining. After repair, the pump was placed in normal operations and the tanks were refilled. During a follow-up inspection a broken connection was identified with approximately 20 m3 of freshwater being spilled to the ground.	The pump was stopped, and the sprinkler was isolated for repair. A thin layer of ice was collected and disposed of in the snow dump.

Tuesday, November 15, 2022 6:00:00 AM	Sewage	10 L	Wing 3 lift station	An estimated 10 L of sewage was spilled on the industrial pad due to an overflow of the Wing three lift station.	Upon discovery of the spill, a vacuum truck was dispatched to empty the lift station and recover the untreated sewage outside the lift station. Free liquid was pumped back into the main camp lift station. Absorbent pads were deployed to collect the remaining liquid and packaged for offsite disposal at a licensed disposal facility. The impacted surface was hand excavated and an estimated 15 kg of material was brought to Landfarm A
Wednesday, November 16, 2022 9:00:00 AM	Tire Fill Foam	500 L	Portal 2 Dome	Employee was moving Tire Fill Foam agent into the dome at portal 2 when the loader slid and punctured a tote of Tire Fill Foam. Approximately 500 L of fill foam was spilled within the lined Portal 2 dome.	The spilled Tire Fill Foam material was collected and put inside a Quatrex bag for disposal.
Thursday, November 17, 2022 8:00:00 AM	Sewage	5 L	Wing 3	An estimated 5 L of sewage was spilled on the industrial pad due to an overflow of the Wing three lift station.	Upon discovery of the spill, 10 liters of contaminated snow was hand shoveled and placed in the main camp lift station for treatment. The solid material was cleaned up and 10 kg of material was placed in Landfarm A.
Sunday, November 20, 2022 4:00:00 AM	Emulsion	1.5 m ³	Portal 1 at the Dome 3 emulsion pad	An estimated 1.5 m ³ of emulsion was spilled on the industrial pad when loading a boom truck for transport underground. While placing an emulsion bin #1 on the boom truck with a loader (with forks attached) a previously loaded emulsion bin was accidentally pushed off the boom truck. This led to the operator accidentally raising the forks (versus tilting) on the loader causing the emulsion bin #2 being loaded to slide off the forks.	The emulsion loading operation stopped and the remediation process started. Hand tools and heavy equipment were used to cleanup the emulsion, the contaminated material was placed in quatrex bags and stored in a seacan for reprocessing and/or later use in the open pit blasting process.

Thursday, November 24, 2022 6:00:00 PM	Sewage	30 L	Wing 3	Sewage overflowed from the pump of the wing 3 lift station. A secondary containment bag was installed at this location on 18 November, 2022, however the volume that overflowed was too great and an estimated 30 L of sewage spilled onto the industrial pad.	Upon discovery of the spill, personnel noticed the pump was not running and manually engaged the pump to reduce the level in the lift station. Personnel requested a vacuum truck to recover the liquid untreated sewage spilled outside the lift station. Hand tools were used to clean up the frozen material and placed in a drum for disposal at Landfarm A.
Thursday, November 24, 2022 10:30:00 PM	Diesel	5 L	KCG parking area	While refueling a bus, an airlock caused the fuel to spray out of the refilling nozzle. Approximately 5L of diesel fuel was spilled on the ground.	The contaminated material (snow and ice) was cleaned up with a grader and loader. The contaminated material was placed in the contaminated snow cell.
Friday, November 25, 2022 7:00:00 PM	Hydraulic Oil	5 L	KCG shop yard	A failed hydraulic line on the brake cooling line resulted in a 5 L Hydraulic oil spill to the industrial pad. Equipment was shut down and the hose repaired.	Absorbent pads we used to clean up the free liquid and the snow and ice was removed and place in the contaminated snow cell.
Saturday, November 26, 2022 12:00:00 AM	Oil	20 L	KCG shop (oil seacan)	An oil container in the KCG oil seacan leaked and flowed out of the seacan and on to the ground. Approximately 20 L of oil was spilled onto the industrial pad.	Apply absorbent pads were used to collect the oil free liquid and the remaining contaminated snow and ice was placed in the contaminated snow cell.

Appendix – Monitoring Analytical Data

MEL-11		11/13/2022
Parameter	Unit	
WQ02- Conventional Parameters		
pH	pH units	7.63
Turbidity	NTU	0.2
Specific conductivity	umhos/cm	120
Hardness, as CaCO ₃	mg/L	32.5
Total alkalinity, as CaCO ₃	mg/L	25
Carbonate, as CaCO ₃	mg/L	< 1.0
Bicarbonate, as CaCO ₃	mg/L	25
TDS	mg/L	15
TDS, calculated	mg/L	59
TSS	mg/L	< 1
Total organic carbon	mg/L	3.3
Dissolved organic carbon	mg/L	3.3
WQ03- Major Ions		
Chloride	mg/L	17
Cyanide	mg/L	< 0.00050
Cyanide (free)	mg/L	< 0.0020
Cyanide (WAD)	mg/L	< 0.00050
Silica	mg/L	0.44
Sulfate	mg/L	6.1
WQ04- Nutrients and Chlorophyll a		
Ammonia Nitrogen (as N)	mg/L	< 0.050
Nitrate (as N)	mg/L	< 0.10
Nitrite (as N)	mg/L	0.017
Total Kjeldahl nitrogen	mg/L	0.24
Total phosphorus	mg/L	< 0.020
Orthophosphate (P)	mg/L	< 0.010
WQ06- Total Metals		
Aluminum	mg/L	< 0.0030
Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00056
Barium	mg/L	0.0094
Beryllium	mg/L	< 0.00010
Boron	mg/L	< 0.050
Cadmium	mg/L	< 0.000010
Chromium	mg/L	< 0.0010
Copper	mg/L	0.00094
Iron	mg/L	< 0.010
Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Manganese	mg/L	0.0031

Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	< 0.0010
Selenium	mg/L	< 0.00010
Silver	mg/L	< 0.000020
Strontium	mg/L	0.0571
Thallium	mg/L	< 0.000010
Tin	mg/L	< 0.0050
Titanium	mg/L	< 0.0050
Uranium	mg/L	< 0.00010
Vanadium	mg/L	< 0.0050
Zinc	mg/L	< 0.0050
WQ07- Dissolved Metals		
Aluminum	mg/L	< 0.0030
Antimony	mg/L	< 0.00050
Arsenic	mg/L	0.00049
Barium	mg/L	0.0092
Beryllium	mg/L	< 0.00010
Boron	mg/L	< 0.050
Cadmium	mg/L	< 0.000010
Calcium (Dissolved)	mg/L	10.2
Chromium	mg/L	< 0.0010
Copper	mg/L	0.00094
Iron	mg/L	< 0.0050
Lead	mg/L	< 0.00020
Lithium	mg/L	< 0.0020
Magnesium (Dissolved)	mg/L	1.73
Manganese	mg/L	< 0.0010
Mercury	mg/L	< 0.00001
Molybdenum	mg/L	< 0.0010
Nickel	mg/L	< 0.0010
Potassium (Dissolved)	mg/L	1.16
Selenium	mg/L	< 0.00010
Silver	mg/L	< 0.000020
Sodium (Dissolved)	mg/L	7.83
Strontium	mg/L	0.0557
Thallium	mg/L	< 0.000010
Tin	mg/L	< 0.0050
Titanium	mg/L	< 0.0050
Uranium	mg/L	< 0.00010
Vanadium	mg/L	< 0.0050
Zinc	mg/L	< 0.0050
WQ10- Volatile Organics		
Benzene	mg/L	< 0.00020

Ethylbenzene	mg/L	< 0.00020
Toluene	mg/L	< 0.00020
Xylenes	mg/L	< 0.00040
m,p-Xylenes	mg/L	< 0.00040
o-Xylene	mg/L	< 0.00020
F1 (C6-C10)-BTX	mg/L	< 0.025
F1 (C6-C10)	mg/L	< 0.025
F2 (C10-C16)	mg/L	< 0.1
F3 (C16-C34)	mg/L	< 0.2
F4 (C34-C50)	mg/L	< 0.2