Meliadine Gold Mine
NWB 2AM-MEL1631
March 2023 Monthly Report

Prepared for:
Nunavut Water Board

Prepared by:
Agnico Eagle Mines Limited – Meliadine Division

Table of Contents

SECTION 1 • 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 March 2023.

SECTION 2 • WATER MANAGEMENT

2.1 WATER USAGE

Table 2.1 details monthly water usage approved under Water License 2AM-MEL1631.

Table 2.1: Summary of the monthly water usage in March 2023

Usage	Unit	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2023 Total
MEL-11[1]	m^3	36,021	37,240	43,452	-	-	-	-	-	-	-	-	-	116,713
Dust suppression[2]	m^3	0	0	0	-	-	-	-	-	-	-	-	-	0
Dust suppression (CP1)[3]	m^3	0	0	0	-	-	-	-	-	-	-	-	-	0

2.2 DEWATERING ACTIVITIES

No dewatering activities took place during the month.

2.3 WATER DISCHARGE

Table 2.3 details monthly water discharge, including:

- discharge from the EWTP to Meliadine Lake via the Final Discharge Point (MEL-14);
- discharge of treated saline effluent to Melvin Bay via the Final Discharge Point (MEL-26), and
- discharge from the Itivia fuel containment facility (MEL-25).

[1] Camp, Mill, Dust suppression

[2] Water obtained along AWAR/Meliadine River

[3] Reclaim water obtained from CP1 and used for dust suppression on site

Table 2.3: Summary of the monthly water discharge in March 2023

Location	Unit	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2023 Total
MEL-14	m^3	0	0	0	-	-	-	-	-	-	-	-	-	0
MEL-26	m^3	0	0	0	-	-	-	-	-	-	-	-	-	0
MEL-25	m^3	0	0	0	-	-	-	-	-	-	-	-	-	0

No discharge activities took place during the month.

2.4 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.

2.5 SEWAGE TREATMENT PLANT

Table 2.5 details monthly discharge from the Sewage Treatment Plant (STP), including the treated wastewater discharge to CP1 and sludge removed and disposed of in the WRSF.

Table 2.5: Summary of the monthly disposal/discharge from the STP in March 2023

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2023 Total
Wastewater Discharge (m^3)		5,141	4,305	4,522	-	-	-	-	-	-	-	-	-	13,968
Sewage Sludge	Amount (m^3)	17	7	20.5	-	-	-	-	-	-	-	-	-	44.5
	Disposal Location	WRSF1	WRSF3	WRSF3	-	-	-	-	-	-	-	-	-	NA

2.6 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 exceedances occurred in March 2023.

SECTION 3 • MATERIAL MANAGEMENT

3.1 LANDFILL / LANDFARM

Table 3.1 details quarterly Landfill and Landfarm survey results, as well as the amount of material placed in the Landfarm every month.

Table 3.1: Summary of the monthly disposal in the Landfarm and quarterly survey volumes of Landfill and Landfarm

Location	Unit	Q1			Q2			Q3			Q4			2023 Total
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Landfill (Survey)	m^3	25,666			-			-			-			-
Landfarm (Survey)	m^3	-			-			-			-			-
Landfarm[4]	m^3	0	41.5	3	-	-	-	-	-	-	-	-	-	-

[4] Amount of contaminated solid material (soil) placed in the Landfarm or lined sorting area.

3.2 ORE, WASTE ROCK STORAGE FACILITY, TAILINGS

Table 3.2 details monthly material management, including processed ore, waste rock, and tailings.

Table 3.2: Summary of the monthly material management in March 2023

Material (tonnes)		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Cumulative 2023
Processed Ore		155,514	150,876	171,369	-	-	-	-	-	-	-	-	-	477,759
Waste Rock	Removed from open pit mining	50,606	42,866	114,885	-	-	-	-	-	-	-	-	-	208,357
	Removed from underground mining	67,109	51,780	70,674	-	-	-	-	-	-	-	-	-	189,563
	Used as underground dry rockfill	51,834	48,024	35,017	-	-	-	-	-	-	-	-	-	134,875
Tailings	Send to TSF	133,227	121,499	132,300	-	-	-	-	-	-	-	-	-	387,026
	Used as paste underground backfill	22,287	29,377	39,069	-	-	-	-	-	-	-	-	-	90,733

SECTION 4 SPILL MANAGEMENT

4.1 INTERNAL AND REPORTABLE SPILLS

Spills reported internally (10) 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. Three (3) reportable spills occurred during the month (Refer to the gray shading in Table 4.1).

Table 4.1: Summary of Agnico Eagle's Spill Reports in March 2023

Date and time of occurrence	Contaminant	Estimated quantity	Unit	Exact location of incident	Description of incident	Describe immediate corrective actions
Wednesday March 01, 2023 5:30:00 AM	Sewage	9,000.00	L	Main camp lift station	An estimated 9 m3 of sewage was spilled to the industrial pad due to an equipment failure at the main camp lift station causing it to overflow. The spilled sewage migrated south and collected in the multiple service building (MSB) parking lot where it was contained, and cleanup was initiated.	The Energy and Infrastructure Maintenance supervisor was notified that the spill was occurring and switched the pumping system into manual mode to lower the lift station level and stop the release. The impacted area was scrapped using an excavator, and approximately 40 m^3 of sewage-impacted snow and ice was recovered. Due to the large volume of material that was generated from the spill remediation, Agnico Eagle requested authorization from CIRNAC, in consultation with KivIA, to transfer the sewage-impacted snow and ice within the Tiriganiaq Pit 2. A one-time authorization was

						granted on February 17th, 2023. Tiriganiaq Pit 2 is currently used for interim storage of saline contact water from the underground mine. This water will be treated at the Saline Effluent Treatment Plant (SETP) prior to discharge to sea at Melvin Bay to meet the MDMER discharge criteria.
Thursday, March 02, 2023 5:30:00 AM	Hydraulic oil	20.00	L	Dome Portal 2	An hydraulic hose on the Hyster boom failed resulting in a 20 L spill within the Portal 2 dome.	The Hyster was turned off and the hose repaired. Absorbent pads were used to collect the spill and were placed in oily rags quatrex bag at Portal 2. The ground was scrapped, approximately 25 kg of gravel was brought to landfarm A.
Friday, March 03, 2023 5:30:00 PM	Hydraulic oil	40.00	L	TIRI01	A hose was leaking oil on an excavator, resulting in a 40 L spill in Tiriganiaq Open Pit 1.	The excavator was stopped, and the hose repaired. Absorbent pads were used and contaminated materials (overburden) were recovered and placed in the Landfarm.
Sunday, March 05, 2023 11:30:00 AM	Hydraulic oil	20.00	L	TIRI01	An operator found a hose that was split on an excavator, resulting in a 20L spill in Tiriganiaq Open Pit 1.	The equipment was shut down and brought to maintenance to be repaired. Contaminated soil was recovered and placed in the Landfarm.

Tuesday, March 07, 2023 4:30:00 PM	Hydraulic oil	5.00	L	Main road in front of ERT building	A hydraulic hose failed on an aerial work platform, resulting in a 5L hydraulic oil spill.	Absorbent pads were used. Contaminated material (mix of snow and soil) was recovered and disposed of in a Quatrex bag.
Thursday, March 09, 2023 5:30:00 PM	Hydraulic oil	15.00	L	New CIL laydown	Hydraulic hose failed on AWP resulting in a 15L Hydraulic oil spill.	Absorbent pads use to contain the spill and contaminated material was disposed of in quatrex bag.
Monday, March 13, 2023 4:15:00 PM	Coolant	4.00	L	WRSF3	A failed coolant line on dozer #21 resulted in a 4 L coolant spill on the Waste Rock Storage Facility 3.	Equipment was shut down. Absorbent spill pads were placed under the leak to collect the coolant. Contaminated material was placed in a 45 gallons drum for disposal as hazardous material.
Friday, March 17, 2023 6:30:00 AM	Diesel fuel	20.00	L	Gatehouse generator seacan	A diesel fuel leak was observed from a fuel line inside the gatehouse generator seacan. The diesel made its way out of the generator seacan and on the Gatehouse pad resulting an estimated 20 L of diesel spill.	The leaking hose was repaired. Contaminated material was collected with a shovel and disposed of in the contaminated snow cell.

Friday, March 17, 2023 2:00:00 PM	Hydraulic oil	1.00	L	Lake A8	An estimated 1 L of hydraulic oil was spilled onto the ice surface on lake A8. While lowering the drill tower to relocate the drill a hydraulic line was pinched spilling hydraulic oil within the drill and into the water recovery pan. After the water recovery pan was removed and the drill relocated remnant oil from under the drill floor was observed on the snow.	Absorbent pads were deployed to collect the free oil and disposed of in a Quatrex bag. The remaining impacted snow and ice was recovered with a shovel and bucket and transferred to the contaminated snow cell at the Meliadine mine site.
Monday, March 20, 2023 6:00:00 PM	Engine oil	2.00	L	New Verti Mill	Worker reported that engine of pick-up truck had a malfunction resulting in an approximately 2L of engine oil to be released.	Absorbent pads were used. The area was scraped and contaminated material was placed in quatrex bag for disposal.
Tuesday, March 28, 2023 4:00:00 PM	Hydraulic oil	50.00	L	Dome 3	At the Dome 3 pump Station, a new worker connected the hydraulic hose to the fuel truck and left it unattended with the timer, causing the fuel to overflow. This resulted in a 50L hydraulic oil spill.	Absorbent pads were immediately put in place to contain the spill. Contaminated material was disposed of in a Quatrex bag.

Wednesday, March 29, 2023 1:30:00 PM	Sewage	2.00	L	MSB Lift Station	An estimated 5 L of sewage was spilled onto the industrial pad due to a condensation buildup in the air intake pipe of the vacuum truck. The contaminated material was cleaned up with a loader and the material has been placed in Landfarm A. The initial NT/NU Spill Report indicated that 5 L of sewage was released but after further assessment it was determined that 2 L was released.	A loader was directed to scrape the contaminated area. The contaminated ice and gravel were excavated and brought to Landfarm A as per the Spill Contingency Plan.
Friday, March 31, 2023 10:30:00 AM	Coolant	50.00	L	TIR01 ramp	Haul truck was driving loaded heading out of the ramp. A coolant line failed resulting in a 50L spill.	The engine was stopped. The ramp was scrapped and the contaminated material was disposed of in a Quatrex bag.

Appendix – Monitoring Analytical Data

	Sample date	3/4/2023
	Sample name	MEL-11
Parameter	**Unit**	
WQ02- Conventional Parameters		
pH	**pH units**	7.09
Turbidity	**NTU**	0.2
Specific conductivity	**umhos/cm**	150
Hardness, as CaCO3	**mg/L**	39.2
Total alkalinity, as CaCO3	**mg/L**	28
Carbonate, as CaCO3	**mg/L**	< 1.0
Bicarbonate, as CaCO3	**mg/L**	28
TDS	**mg/L**	40
TDS, calculated	**mg/L**	72
TSS	**mg/L**	1
Total organic carbon	**mg/L**	4.3
Dissolved organic carbon	**mg/L**	4.3
WQ03- Major Ions		
Chloride	**mg/L**	21
Cyanide	**mg/L**	< 0.00050
Cyanide (free)	**mg/L**	< 0.0020
Cyanide (WAD)	**mg/L**	0.00057
Silica	**mg/L**	0.72
Sulfate	**mg/L**	8.5
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**	< 0.010
Total Kjeldahl nitrogen	**mg/L**	0.31
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**	0.00062
Barium	**mg/L**	0.0124
Beryllium	**mg/L**	< 0.00010
Boron	**mg/L**	< 0.050
Cadmium	**mg/L**	< 0.000010
Chromium	**mg/L**	< 0.0010
Copper	**mg/L**	0.00102
Iron	**mg/L**	0.018
Lead	**mg/L**	< 0.00020

Lithium	**mg/L**	< 0.0020
Manganese	**mg/L**	0.0056
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**	0.0699
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**	0.00058
Barium	**mg/L**	0.0127
Beryllium	**mg/L**	< 0.00010
Boron	**mg/L**	< 0.050
Cadmium	**mg/L**	< 0.000010
Calcium (Dissolved)	**mg/L**	12.3
Chromium	**mg/L**	< 0.0010
Copper	**mg/L**	0.00103
Iron	**mg/L**	0.0076
Lead	**mg/L**	< 0.00020
Lithium	**mg/L**	< 0.0020
Magnesium (Dissolved)	**mg/L**	2.24
Manganese	**mg/L**	< 0.0010
Mercury	**mg/L**	< 0.00001
Molybdenum	**mg/L**	< 0.0010
Nickel	**mg/L**	< 0.0010
Potassium (Dissolved)	**mg/L**	1.46
Selenium	**mg/L**	< 0.00010
Silver	**mg/L**	< 0.000020
Sodium (Dissolved)	**mg/L**	9.67
Strontium	**mg/L**	0.0729
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)-BTEX	**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