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

Prepared for:
Nunavut Water Board

Prepared by:
Agnico Eagle Mines Limited – Meliadine Division

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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 April 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 April 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	40 082	-	-	-	-	-	-	-	-	156,796
Dust suppression[2]	m^3	0	0	0	0	-	-	-	-	-	-	-	-	0
Dust suppression (CP1)[3]	m^3	0	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 April 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	-	-	-	-	-	-	-	-	0
MEL-26	m^3	0	0	0	0	-	-	-	-	-	-	-	-	0
MEL-25	m^3	0	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 April 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	4,519	-	-	-	-	-	-	-	-	18,487
Sewage Sludge	Amount (m^3)	17	7	20.5	18	-	-	-	-	-	-	-	-	62.50
	Disposal Location	WRSF1	WRSF3	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 April 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			23,663			-			-			-
Landfarm (Survey)	m^3	-			143			-			-			-
Landfarm[4]	m^3	0	41.5	3	5.5	-	-	-	-	-	-	-	-	50

[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 April 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	149,029	-	-	-	-	-	-	-	-	626,788
Waste Rock	Removed from open pit mining	50,606	42,866	114,885	159,630	-	-	-	-	-	-	-	-	367,987
	Removed from underground mining	67,109	51,780	70,674	73,390	-	-	-	-	-	-	-	-	262,953
	Used as underground dry rockfill	51,834	48,024	35,017	18,200	-	-	-	-	-	-	-	-	153,075
Tailings	Send to TSF	133,227	121,499	132,300	110,473	-	-	-	-	-	-	-	-	497,499
	Used as paste underground backfill	22,287	29,377	39,069	38,556	-	-	-	-	-	-	-	-	129,289

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 April 2023

Date and time of occurrence	Contaminant	Estimated quantity	Unit	Exact location of incident	Description of incident	Describe immediate corrective actions
Monday, April 03, 2023 9:00:00 PM	Hydraulic oil	100	L	Dome 3 laydown	An estimated 100 L of hydraulic oil was spilled on the ground at the front entrance of Dome 3. While arranging equipment around the dome, an underground haul truck came in contact with a tote, causing a small crack on the tote and flipping it on its side.	The employee requested a loader to flip the tote back on its side to prevent any further hydraulic oil from leaking from the tote. The tote was then brought inside Dome 3 where it was pumped and transferred to another tote. Spill rags were deployed on the free liquid and loader was used to scrape the contaminated surface. Contaminated absorbent rags were disposed of in a labeled quatrex bag which will brought to the hazardous waste laydown. An estimated of 1.5 m3 of contaminated material was excavated and brought to Landfarm A.

Tuesday, April 04, 2023 2:30:00 AM	Hydraulic oil	5	L	WRSF3 overburden lift	A dozer tilted on its side, and the cylinder hose started to leak.	Operator stopped the equipment. Absorbent pads were deployed to contain the spill and were disposed of as per procedure.
Thursday, April 06, 2023 2:30:00 AM	Hydraulic oil	60	L	TIRI-01	During the night shift, a worker noticed oil leaking from a drill. A hydraulic oil hose failed due to wear and tear or friction between the hoses.	The drill was stopped. Absorbent pads were used and disposed as hazmat. A loader was used to scrape remaining contaminated material and 0.5m3 of material was brought to Landfarm A.
Thursday, April 06, 2023 12:00:00 PM	Diesel Fuel	2	L	Loading station itivia	A minor leak occurred during the loading of the fuel trucks from the loading arm.	The loading was stopped. Grease was applied. Absorbent pads were used to collect the spilled material, and some was wrapped around the arm to prevent this event to occurrent again. Contaminated material was disposed of in the designed barrel at the loading station.
Friday, April 07, 2023 10:00:00 AM	Radiator Antifreeze	5	L	Construction laydowm	Radiator from a tractor trailer got punctured due to a damaged rotor of fan.	Gravel/snow was scrapped and placed in a glycol waste quatrex bag.

Friday, April 07, 2023 1:30:00 PM	Sewage	20	L	Powerplant wash car	An estimated 20 L of sewage was spilled onto the industrial pad by the powerplant wash car due to a miscommunication between the vacuum truck operators. During normal operations, both vacuum truck operators failed to confirm if hose was connected to the truck prior to transferring material.	The sewage-impacted snow was excavated and brought to Landfarm A as per the Spill Contingency Plan.
Saturday, April 08, 2023 10:15:00 AM	Diesel Fuel	70	L	KCG shop yard	Pickup truck #20-0022 was fueled in order to move it in the garage. After moving the pickup truck, the workers noticed a 70 L fuel spill where it was parked. The fuel - water separator filter cap was removed.	Absorbent pads were placed on the spill and were disposed of in a designated quatrex bag. Contaminated snow was collected and disposed of in the contaminated snow cell. In addition, an estimated of 0.5m^3 was scrapped from the surface and brought to the KCG hazmat laydown for disposal.
Saturday, April 08, 2023 3:30:00 PM	Hydraulic oil	6	L	New CIL	During normal operations, a hydraulic hose broke on an aerial work platform. Further investigation discovered that the hydraulic hose was not properly crimped.	Absorbent pads were used. Contaminated material (snow) was removed and disposed of properly.

Monday, April 10, 2023 8:30:00 AM	Hydraulic oil	25	L	Haul road	While moving the pilling crane on the haul road, a hydraulic hose failed.	Absorbent pads were used to contain the spill. Contaminated material was scrapped and 1 m^3 was brought to the Landfarm A.
Monday, April 10, 2023 10:00:00 AM	Hydraulic oil	10	L	Industrial Pad	An excavator hydraulic oil line failed resulting in a 10 L hydraulic oil spill onto the industrial pad.	Absorbent pads were used to contain the spill and were disposed of in a designated drum. Contaminated material was collected and placed in a designated quatrex bag.
Friday, April 14, 2023 10:00:00 AM	Hydraulic Oil	10	L	TIRI01	An excavator hydraulic oil line failed resulting in a 10 L hydraulic oil spill in TIRI01.	Equipment was stopped. Absorbent pads were used to collect the spill and disposed of it in designated area. 1 m^3 of contaminated material was scrapped and placed in the Landfarm A.
Saturday, April 15, 2023 8:00:00 AM	Coolant	40	L	TSF cell 2	A haul truck coolant line failed resulting in a 40 L coolant spill on the TSF.	The operator stopped the equipment. Absorbent pads were used to collect the spill and disposed of in as hazardous waste.

Sunday, April 16, 2023 8:00:00 AM	Waste oil	75	L	Maintenance Yard hazmat area	A worker was moving a waste oil tote into a seacan. When aligning the tote in the seacan the fork of the equipment punctured the tote resulting in a 75 L waste oil spill onto the industrial pad.	Absorbent pads were used to contain the spill and disposed of in a designated drum. 250 L of contaminated snow and ice were disposed of in a designated drum.
Monday, April 17, 2023 3:30:00 AM	Drill Cutting Water	40	L	Drill#4 sh-89	Drilling contractor was removing their drilling equipment from the ice surface of an unnamed waterbody approximately 7.5 kilometers east of the industrial pad. On April 17th, the drill crew prepared to drag two skid-mounted units of drilling equipment, chained in series, behind a tractor. The last unit in the train was the cuttings recirculation unit. Due to the lack of daylight and the cuttings recirculation unit being at the back of the train, the drilling crew did not notice the spill of 40 L of drill cuttings to the ice surface as the equipment left the site. The spill was discovered during the post-drilling inspection on April 17th.	The frozen material was scraped off the frozen waterbody surface and deposited in a natural depression previously used for drill cuttings disposal which was approved by the Environment Department.

Monday, April 17, 2023 10:00:00 AM	Hydraulic oil	17	L	TIRI01	While driving in TIRI01, a worker tipped over a hydraulic oil pail spilling 17 L of hydraulic oil in TIRI 01.	Absorbent spill pads were used to clean up the spill and disposed of in a designated containment. 1.5 m^3 of contaminated soil was collected and disposed in Landfarm A.
Saturday, April 22, 2023 6:30:00 AM	Copper Sulfate	0,25	L	North of Process Plant	While cleaning the floor in the reagent laydown area inside the process plant, 0.25 L water mixed with a few ounces of copper sulphate made its way under the north overhead door and froze outside.	The contaminated material was removed with a skid steer and placed in the Detox sump for processing through the plant.
Tuesday, April 25, 2023 9:00:00 AM	Diesel Exhaust Fluid	15	L	MSB OUTSIDE BAY 6	A tote of used DEF was placed outside over the winter. The tote cracked and during the warmer weather, the DEF started to melt and spilled approximately 15 L in the maintenance yard.	The spill was contained using absorbent pads placed to collect the fluid. 2 L of contaminated soil/sludge was collected and placed in a barrel for disposal as hazardous material waste.
Thursday, April 27, 2023 11:00:00 AM	Engine oil	3	L	Dome 1	3 L of engine oil was discovered on the ground by Dome 1.	Contaminated snow was collected and disposed of in the snow cell.

Thursday, April 27, 2023 5:30:00 PM	Hydraulic oil	25	L	TIRI01	Rotation head of the drill was leaking resulting in a 25L hydraulic oil spill.	The drill was stopped. Absorbent pads were used to clean the spill and disposed of in a quatrex bag. To prevent future spill, secondary containment was placed under this area.

Appendix – Monitoring Analytical Data

	Sample date	4/4/2023
	Sample name	MEL-11
	Sample type	N
Parameter	**Unit**	
WQ02- Conventional Parameters		
pH	**pH units**	7.34
Turbidity	**NTU**	0.2
Specific conductivity	**umhos/cm**	160
Hardness, as CaCO3	**mg/L**	43.8
Total alkalinity, as CaCO3	**mg/L**	30
Carbonate, as CaCO3	**mg/L**	< 1.0
Bicarbonate, as CaCO3	**mg/L**	30
TDS	**mg/L**	65
TDS, calculated	**mg/L**	78
TSS	**mg/L**	< 1
Total organic carbon	**mg/L**	4.2
Dissolved organic carbon	**mg/L**	4.1
WQ03- Major Ions		
Chloride	**mg/L**	21
Cyanide	**mg/L**	< 0.00050
Cyanide (free)	**mg/L**	< 0.0020
Cyanide (WAD)	**mg/L**	< 0.00050
Silica	**mg/L**	0.80
Sulfate	**mg/L**	9.2
WQ04- Nutrients and Chlorophyll a		
Ammonia Nitrogen (as N)	**mg/L**	0.081
Nitrate (as N)	**mg/L**	< 0.10
Nitrite (as N)	**mg/L**	< 0.010
Total Kjeldahl nitrogen	**mg/L**	0.29
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**	0.00071
Barium	**mg/L**	0.0143
Beryllium	**mg/L**	< 0.00010
Boron	**mg/L**	< 0.050

Cadmium	**mg/L**	< 0.000010
Chromium	**mg/L**	< 0.0010
Copper	**mg/L**	0.00119
Iron	**mg/L**	0.020
Lead	**mg/L**	< 0.00020
Lithium	**mg/L**	< 0.0020
Manganese	**mg/L**	0.0053
Mercury	**mg/L**	< 0.00001
Molybdenum	**mg/L**	< 0.0010
Nickel	**mg/L**	0.0014
Selenium	**mg/L**	< 0.00010
Silver	**mg/L**	< 0.000020
Strontium	**mg/L**	0.0787
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**	0.00064
Barium	**mg/L**	0.0141
Beryllium	**mg/L**	< 0.00010
Boron	**mg/L**	< 0.050
Cadmium	**mg/L**	< 0.000010
Calcium (Dissolved)	**mg/L**	14.3
Chromium	**mg/L**	< 0.0010
Copper	**mg/L**	0.00110
Iron	**mg/L**	0.0080
Lead	**mg/L**	< 0.00020
Lithium	**mg/L**	< 0.0020
Magnesium (Dissolved)	**mg/L**	2.53
Manganese	**mg/L**	< 0.0010
Mercury	**mg/L**	< 0.00001
Molybdenum	**mg/L**	< 0.0010
Nickel	**mg/L**	0.0010
Potassium (Dissolved)	**mg/L**	1.57
Selenium	**mg/L**	< 0.00010
Silver	**mg/L**	< 0.000020
Sodium (Dissolved)	**mg/L**	10.7

Strontium	**mg/L**	0.0782
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