



Nunavut Impact Review Board

Site Update Report

Meliadine Gold Mine Project

Agnico Eagle Mines Limited

NIRB File No. 11MN034



October
2021

Report Title: The Nunavut Impact Review Board’s 2021 Site Update Report for Agnico Eagle Mines Limited’s *Meliadine Gold Mine Project* (NIRB File No. 11MN034)

Project: Meliadine Gold Mine Project
Project Location: Kivalliq Region, Nunavut
Land Tenure: Inuit Owned Land

Project Owner: Agnico Eagle Mines Limited
Meliadine Mine Site
Rankin Inlet, NU
X0C 0G0

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Cover Photograph: Tiriganiaq Pit 1

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1 INTRODUCTION

The Nunavut Impact Review Board (NIRB or Board) was established through Articles 10 and 12 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement)* and is responsible for post environmental assessment monitoring of a Project in accordance with Part 7 of Article 12 of the *Nunavut Agreement* and s. 135(4) of the *Nunavut Planning and Project Assessment Act*, S.C. 2013, c. 14 (*NuPPAA*).

1.1 Objectives & Purpose of a Site Update

In accordance with the Terms and Conditions as set out in the amended Meliadine Gold Mine Project Certificate¹ and in accordance with Section 12.7.2 of the *Nunavut Agreement*, and s. 135 (3) of the *NuPPAA*, the NIRB is responsible for the establishment of a monitoring program for Agnico Eagle Mines Limited's (Agnico Eagle) Meliadine Gold Mine Project (the Project), which includes conducting periodic site visits. The objective of the NIRB's site visit is to determine whether, and to what extent, the land or resource use in question is being carried out within the predetermined terms and conditions of the NIRB's Project Certificates issued.

The NIRB Project Certificate used to assess Agnico Eagle's compliance throughout this report was Project Certificate No. 006, Amendment 1 (February 26, 2020)¹

Due to the COVID-19 Public Health restrictions, the NIRB was unable to conduct a site visit in 2021 and therefore was unable to visually inspect activities occurring related to the Project and assess compliance to the requirements of the Project Certificate. This year, to ensure parties and community members are kept up to date at site, the NIRB has developed a Site Update Report based on updates and photos provided courtesy of Agnico Eagle.

Materials related to the NIRB's 2020-2021 monitoring year are filed at the NIRB's online Public Registry at www.nirb.ca/project/124106.

1.2 Objective & Purpose of a Public Information Session

Pursuant to the *Nunavut Agreement*, the *NuPPAA*, and the Meliadine Gold Mine Project Certificate 006, the NIRB monitoring responsibilities include providing periodic updates regarding its Monitoring Program for the communities most affected by the Meliadine Gold Mine Project. These meetings are also to further ensure ongoing awareness of Project-specific terms and conditions and encourage effective participation throughout the Board's monitoring process. However due to operational constraints and restrictions caused by the COVID-19 pandemic, the NIRB was unable to hold an in person Public Information Session in 2021. However, to ensure

¹ Public Registry No.: 323212

that the community is kept up to date on the Board’s monitoring of the Meliadine Gold Mine Project, the NIRB conducted a radio show over the local radio in Rankin Inlet.

2 MELIADINE GOLD MINE PROJECT OVERVIEW

The Meliadine Gold Mine Project involves the construction and operation of a gold mine located in the Kivalliq Region, approximately 25 kilometres (km) north of Rankin Inlet on Inuit-owned lands. There are five (5) separate deposits that the Proponent plans to develop in a phased approach. Phase 1 is focused on the Tiriganiaq deposit, which will include two (2) open-pits and one (1) underground mine. Phase 2 will include development of four (4) other deposits along with a spur road to allow access for development of the Discovery deposit.

The mine site is comprised of a camp, associated mining infrastructure, and the Tiriganiaq underground mine which moved into operations in 2019 (Figure 1). Additional Project infrastructure is located at Itivia Harbour in the Hamlet of Rankin Inlet and consists of barge unloading facilities, a laydown storage and marshalling area, and a 37.5 million litre (ML) fuel tank farm (Figure 2). The Itivia Harbour area is connected to the mine site with a private bypass road which allows mine-related traffic from Itivia to bypass the community before connecting to the all-weather access road (AWAR). The approximately 24 kilometres (km) long AWAR connecting the bypass road to the mine site is restricted to all-terrain-vehicle access only by the public but will be opened to all public traffic for Phase 2 of the project which includes expansion of the AWAR to two-lane with appropriate turn offs.

In 2019 after an amendment process, the NIRB approved the addition of discharge of a portion of the saline effluent (salty groundwater) from the Tiriganiaq underground mine to the ocean at Melvin Bay. This included truck transport of saline effluent from the mine site to a saline water discharge tank located at the Itivia Fuel Storage Facility where the saline effluent is then pumped through a pipeline to an engineered diffuser located in Melvin Bay at a rate of 800 cubic meters (m³)/day. The saline effluent transport and discharge into Melvin Bay only happens during the open water season and Agnico Eagle stores saline effluent on site for the remainder of the year.

Due to higher than predicted saline effluent volumes inflowing into the underground mine, in 2020 Agnico Eagle requested a temporary measure to increase the volume of traffic transporting saline effluent and to double the volume of effluent being discharged to Melvin Bay to 1,600 m³/day during the open water season. Agnico Eagle provided updated monitoring plans to mitigate and/or monitor any adverse impacts. On January 20, 2021 the Nunavut Planning Commission (the Commission) reviewed Agnico Eagle’s proposal to extend the “2020 Saline Discharge Strategy” for an additional year and on April 13, 2021, Agnico Eagle provided the NIRB with an update on the Commission’s conformity determination that the proposed activities were exempt from screening by the NIRB. Subsequently, on April 21, 2021 the NIRB requested Agnico Eagle provide a submission directly to the NIRB’s Public Registry to allow the NIRB to confirm the

monitoring requirements applicable to the activities under the strategy. To date the NIRB is still awaiting the requested material.

As a more long-term measure to manage increased volumes of saline effluent, in 2020 Agnico Eagle applied to amend its Project Certificate to change the conveyance of the saline effluent from the mine site to Itivia Harbour from trucking to waterlines constructed alongside the AWAR, as well as increase the volume of saline effluent discharged to 6,000 to 12,000 m³/day. The proposal also included an alternative to also discharge treated surface contact water to an additional 8,000 m³/day. The NIRB held the Public Hearing and Community Roundtable for the “Saline Effluent Discharge to Marine Environment” project proposal on June 14-17, 2021 and released the Reconsideration Report and Recommendations to the Responsible Minister on July 30, 2021. All documents related to the “Saline Effluent Discharge to Marine Environment” project proposal can be found at www.nirb.ca/project/125515.

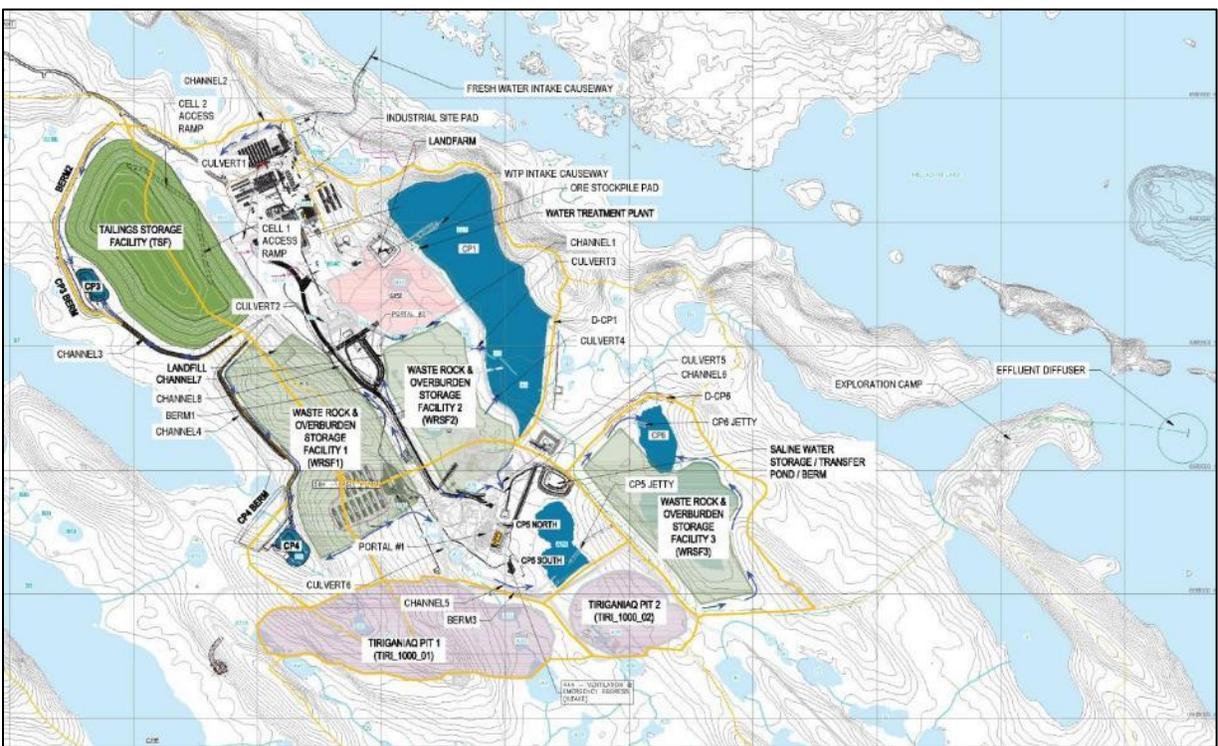


Figure 1: Meliadine Mine Site (from Agnico Eagle’s 2018 Annual Report; Figure 1)

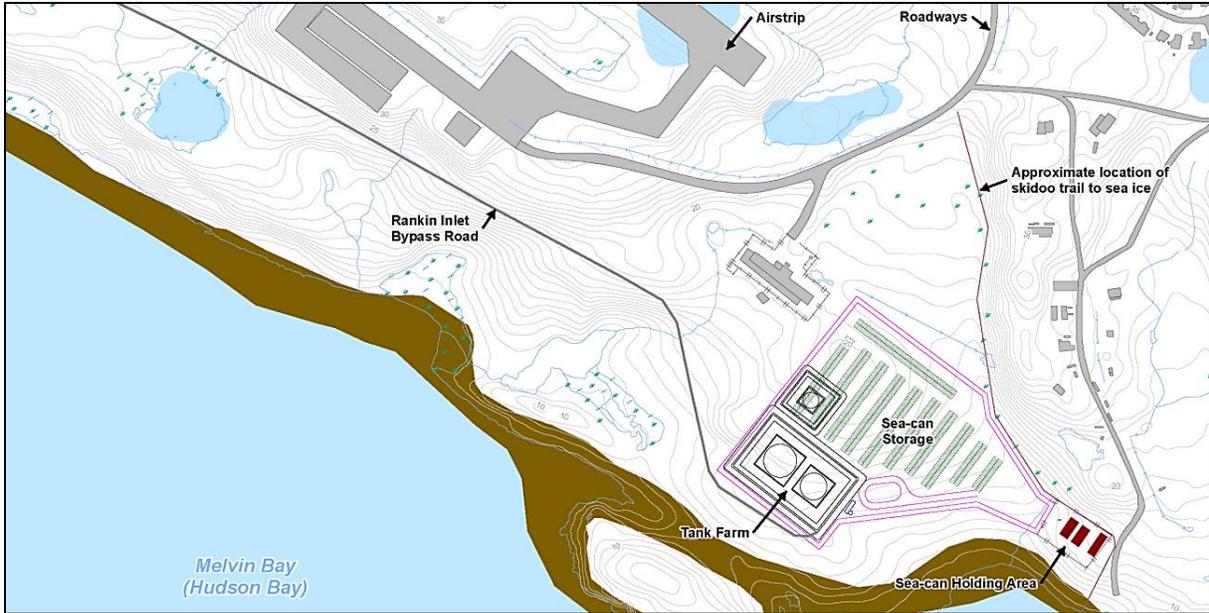


Figure 2. Overview of the Itivia Site, Bypass Road, and Community Snowmobile Trail. Source: Agnico Eagle's Roads Management Plan for Meliadine (March 2017).

3 GENERAL OBSERVATIONS FOR MELIADINE MINE SITE

The photos have been provided by Agnico Eagle as information for all parties and where photo(s) pertain to a Term and Condition, Monitoring Officers have noted it in the following table.

Table 1: Summer 2021 Site Update Report Select Terms and Conditions for the Meliadine Gold Mine Project Certificate No. 006, Amendment 1

T&C No.	Category	Observation
1 & 3	Air Quality Monitoring Plan	Photo 15 and Photo 16 provide evidence of dustfall monitoring along the all-weather access road. Photo 56 shows the equipment used for air quality monitoring.
10 & 11	Noise and Vibration Abatement Plan	Photo 54 and Photo 55 show the equipment used for blast monitoring and noise monitoring, respectively.
25	Groundwater Quantity and Quality	Photo 3 and Photo 4 show the saline effluent discharge facility and filtration station at Itivia Harbour. Photo 34 and Photo 35 depict the saline ponds for on-site saline water storage.
41	Reclamation and re-vegetation	Photo 51 shows the revegetation plot.
61 & 74	Bird Deterrents	Photo 53 provides evidence of a bird deterrents.

T&C No.	Category	Observation
64, 67 & 77	Marine Environment - Accidents and Malfunctions	Photo 2 demonstrates secondary containment of the fuel farm at Itivia Harbour next to Melvin Bay.
75	Predatory Attractants	Photo 44 provides evidence that incinerator doors are kept closed to prevent wildlife. Photo 45 demonstrates management of food waste. Photo 46 , Photo 47 , and Photo 48 demonstrate improvements to the waste segregation on site.
110	Individual and community wellness	Photo 58 and Photo 59 show programs for country food and sewing at the mine site. Photo 61 , Photo 63 , and Photo 64 demonstrate cultural programs and activities in the communities of Rankin Inlet and Arviat.
124	Spill preparedness	Photo 14 shows the emergency spill response seacans along the all-weather access road.
125	Accidents and Malfunctions – All weather access road	Photo 6 shows the gatehouse at KM 8 for access to the all-weather access road. Photo 7 , Photo 8 , Photo 9 , and Photo 10 show the health and safety, and public usage signage for the all-weather access road.

4 ITIVIA HARBOUR

4.1 Fuel Storage



Photo 1: Fuel Farm 1



Photo 2: Fuel Farm 2 and Secondary Containment

4.2 Saline Effluent Discharge



Photo 3: Saline Effluent Discharge Seacans



Photo 4: Saline Effluent Filtration Station Installed in 2021

5 BYPASS ROAD



Photo 5: Bypass Road Snowmobile Crossing

6 ALL-WEATHER ACCESS ROAD (AWAR)

- In 2020 stop signs were added on both sides of the gatehouse to better control the traffic on the road.



Photo 6: Gatehouse at KM 8

6.1 Health and Safety signage along the AWAR



Photo 7: Call Dispatch Signage



Photo 8: No Public Access Signage



Photo 9: Blind Hill Signage



Photo 10: Signage for Pullouts

6.2 Bridges

- Maintenance was performed on the bridges in August 2021.
- Bridges are inspected regularly.



Photo 11: Char River Bridge



Photo 12: M-5 Bridge



Photo 13: Meliadine River Bridge

6.3 Spill Response at Bridge Crossings



Photo 14: Emergency Spill Response Seacans

6.4 Dust Management and Monitoring

- Water and calcium chloride were used along the AWAR to limit dust emissions.
- Agnico Eagle restarted monitoring transects south of the gatehouse which were suspended in 2020 due to COVID-19 restrictions.
- The dustfall stands on the Bypass Road were adjusted at certain distances from the road to reflect the updates made in the Air Quality Monitoring Plan version 3 (June 2020).



Photo 15: Dustfall Monitoring Transect

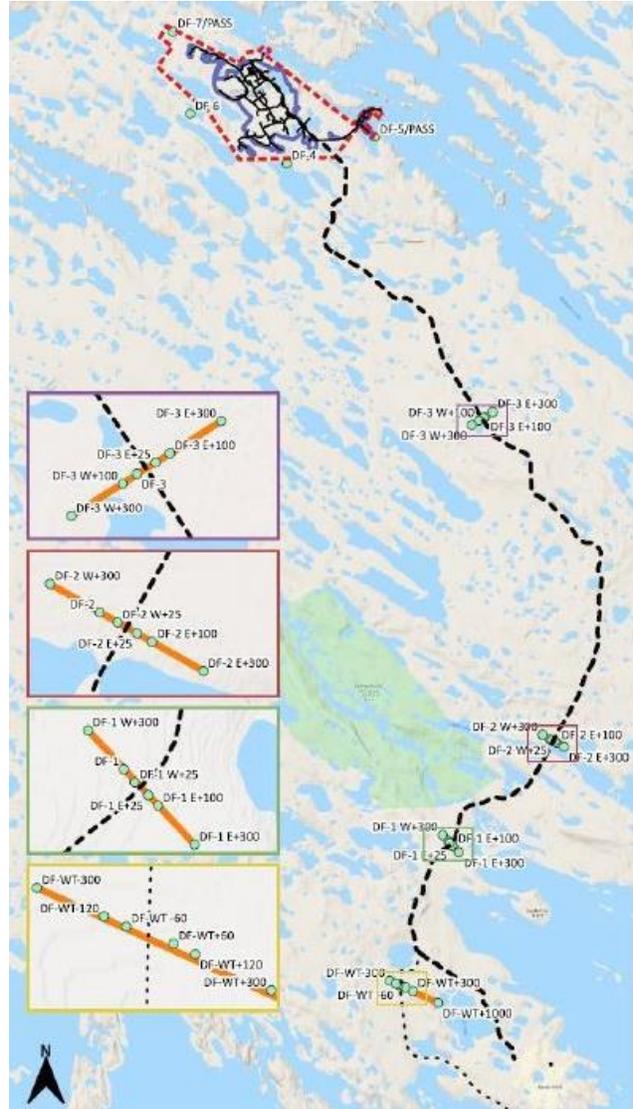


Photo 16: Dustfall Transects along the AWAR and Bypass Roads

6.5 AWAR Wildlife Camera Monitoring

- Trail cameras were temporarily installed near the end of June 2021 to monitor the caribou migration and they were removed mid-July 2021, similar to installation in 2020.



Photo 17: AWAR Camera



Photo 18: AWAR Camera Locations

7 EXPLORATION CAMP AND INFRASTRUCTURE

- In the summer of 2021, Agnico Eagle conducted a site clean up around the Exploration Camp (Photo 20).
- Agnico Eagle is evaluating shipping the empty fuel tanks off site. These tanks contained sewage sludge and had a secondary gravel berm constructed around them in case of spills or leaks (Photo 21).
- The rows of contaminated soil in the landfarm were turned (Photo 22).
- On June 4th, 2021, a 250-litre fuel spill occurred at the Exploration Camp core shack due to the failure of a fuel line. In July 2021, dismantling of the core shack building started, to allow soil remediation (Photo 23).



Photo 19: Exploration Camp Aerial View



Photo 20: Exploration Camp



Photo 21: Exploration Camp Fuel Tanks



Photo 22: Landfarm B



Photo 23: Spill Remediation

8 MINE AND CAMP INFRASTRUCTURE

8.1 Mine Pits and General Site Infrastructure

- In 2021 Tiriganiaq Pit 2 is being used to store saline effluent from the underground mine (Photo 25).
- A wash bay was commissioned for cleaning of underground and surface equipment.



Photo 24: Tiriganiaq Pit 1



Photo 25: Tiriganiaq Pit 2



Photo 26: Tiriganiaq Underground Mine Water Stope



Photo 27: Tiriganiaq Underground Mine Pumping Station



Photo 28: Newly Commissioned Wash Bay

8.2 Quarries and Eskers

- Agnico Eagle noted that reclamation of quarries and eskers was completed in 2019 (Photo 29 and Photo 30).



Photo 29: Reclaimed Quarry B7-1



Photo 30: Reclaimed Esker North of Main Camp

8.3 Water Management

- In 2020-2021, Agnico Eagle built the water treatment complex, designed to provide a centralized building for contact water treatment (Photo 36).



Photo 31: Containment Pond 1



Photo 32: Containment Pond 3



Photo 33: Containment Pond 5



Photo 34: Saline Pond 1



Photo 35: Saline Pond 3 Prior to Treated Saline Effluent Storage



Photo 36: Water Treatment Complex

8.4 Waste Management

- Waste Rock Storage Facility 1 is still active and expected to reach its design capacity in Year 4 (2023; Photo 38).
- Waste Rock Storage Facility 3 received all waste material from Tiriganiaq Pit 2 in 2020 and will accommodate portions of waste rock from Tiriganiaq Pit 1 in 2022 and 2023 until capacity is reached (Photo 39).
- The temporary sorting pad was used for hazmat sorting in May 2021. As of August 30, 2021, it contains approximately 150 cubic meters (m³) of unsorted, contaminated gravel from a recent spill excavation. Agnico Eagle will screen this material prior to deposition in Landfarm A (Photo 40).
- An oil separator system has been installed at the Landfarm A site to treat accumulated sump water (Photo 41).
- A landfill volume survey was completed on August 10, 2021. The current volume is 13,587.7 cubic meters (Photo 42).
- A gate was installed to control access to the landfill in 2020. In 2021, no animal deterrents were placed at the landfill (Photo 43).
- Incinerator doors are kept closed to prevent wildlife. During summer, a steel grating is used to keep wildlife out while the door is open to allow heat to escape (Photo 44).
- There is a backlog of food waste on-site to be burnt. In the meantime, food waste seacans are double stacked to prevent any wildlife from accessing them (Photo 45).



Photo 37: Tailings Storage Facility Aerial View



Photo 38: Waste Rock Storage Facility 1



Photo 39: Waste Rock Storage Facility 3



Photo 40: Landfarm A



Photo 41: Oil Separator System



Photo 42: Landfill



Photo 43: Landfill Gate



Photo 44: Incinerator



Photo 45: Example Stacked Food Waste Seacan

8.5 Waste Segregation

- A site wide relaunch of waste segregation was completed in April 2021 with new signs and standardized bin labels and posters (Photo 46, Photo 47, Photo 48, and Photo 49).
- In 2020, a protocol was implemented to inspect seacans and individual items before they are moved from the users work location. This protocol is still in place in 2021 (Photo 50).

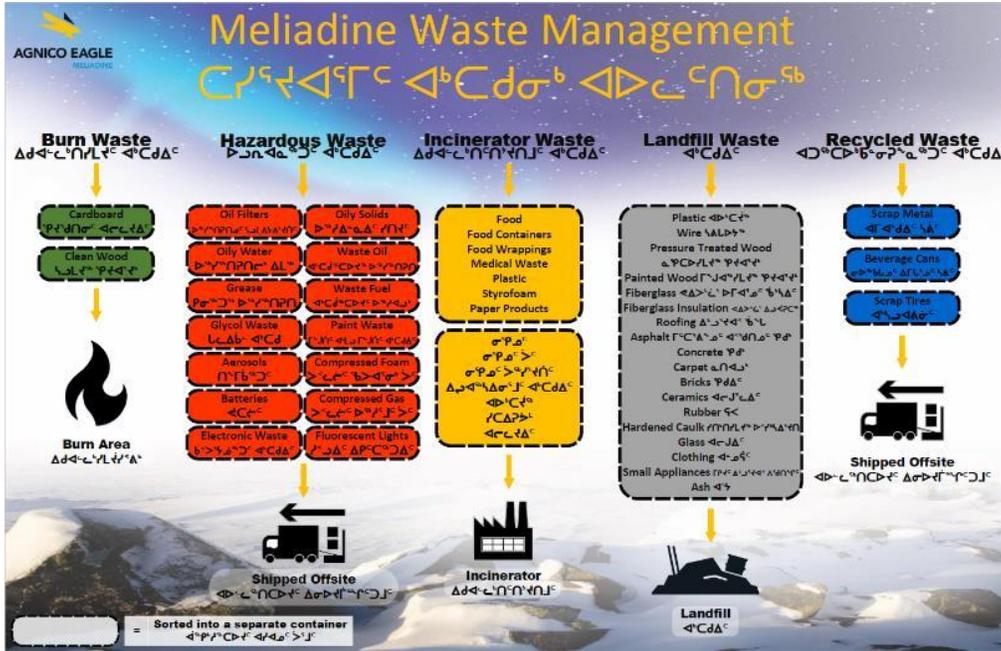


Photo 46: Example Waste Segregation Information Poster



Photo 47: New Waste Sorting Facility



Photo 48: Landfill and Wood Signs

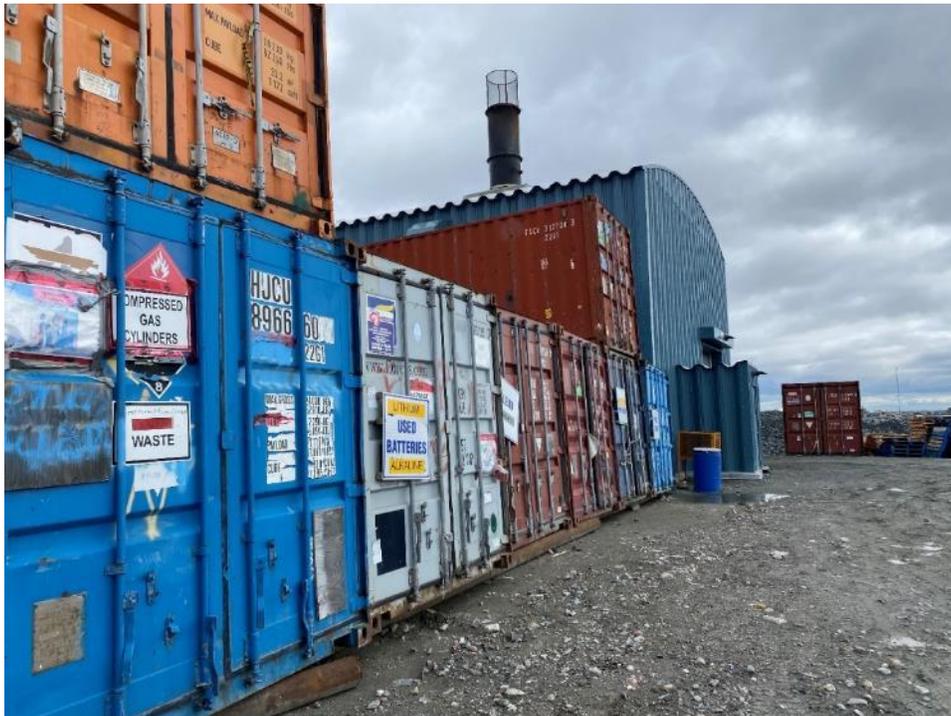


Photo 49: Hazardous Waste Sorting Facility

- 1** Ensure the hazardous waste seacan complies with the following:
 - Only **one type** of hazardous waste per seacan;
 - Containers (quatex bags, totes and drums) are **closed properly**;
 - Every container is **labelled** with its contents and source;
 - Containers are **not leaking or damaged**;
 - Containers are **not stacked**;
 - There are **10 pallets/ totes per seacan**;
 - The seacan **doors close properly**.
- 2** Contact environment to request a seacan inspection.
 - meli.environment@agnicoeagle.com
 - WATER MANAGEMENT channel on the radio
 - Ext. 4603925, 4603903, 4603202
- 3** Environment personal will certify your seacan is packed correctly. The seacan door will be closed and tagged an environment approval sign.



Hazardous Waste Seacan
Approved by Environment

Seacan # _____

Waste Producer _____

Seacan Contents _____

Inspector _____

Approval Date _____

- 4** Once approved; environment will contact warehouse for seacan movement to the long-term storage area.



Photo 50: Waste Seacan Poster

8.6 Revegetation Study

- University of Saskatchewan was able to come on-site mid June 2021 to monitor the plots and perform work (Photo 51).



Photo 51: Revegetation Plot

8.7 Wildlife Management

- A waterline crossing was installed on-site in June 2021 (Photo 52). There are no wildlife crossings on the AWAR, as the embankment gradient is gradual enough not to impede crossing.
- Snowy owls, reflector tourniquets, balloons, coyotes, kites, and propane cannons were used in the 2021 breeding season in several locations to prevent birds from nesting in critical locations to the operations (Photo 53).



Photo 52: Wildlife Crossing on Site



Photo 53: Bird Deterrent

8.8 Monitoring Equipment

- Air quality monitoring units were reinstalled by the supplier in October 2020 (Photo 56). Agnico Eagle has obtained a set of spare parts as recommended and environmental technicians are carrying out a schedule of routine maintenance.



Photo 54: Blast Monitoring Equipment



Photo 55: Noise Monitoring



Photo 56: Air Quality Monitoring

8.9 Camp life

- Nunavummiut from the Kivalliq region have progressively returned to work during the summer of 2021, following approval by the Chief Public Health Officer (Photo 57).



Photo 57: Nunavummiut Return to Work



Photo 58: Country Food



Photo 59: Sewing Event



Photo 60: Nunavut Day



Photo 62: Rankin Inlet Landfill Cleanup



Photo 63: Young Hunters Program in Arviat



Photo 64: Land Camp Revamp in Arviat

10 COVID-19

- The Meliadine Gold Mine is still a site in isolation and a detached operation protocol and no-contact policy is in place (Photo 65).



Photo 65: COVID-19 Signage Restricting Public Entry

11 CONCLUSION

From the photos received, the site appears to be generally in compliance with the Terms and Conditions of the Project Certificate 006, Amendment 1. The NIRB appreciates that Agnico Eagle resumed monitoring dust at the AWAR and Bypass Road sampling transects in 2021 (Photo 15 and Photo 16) as dust levels have been a concern expressed by community members in previous years. The NIRB also acknowledges the Proponents efforts on improving waste management (Photo 45, Photo 46, Photo 47, Photo 48, Photo 49, and Photo 50). The NIRB also appreciates the updated information on the current landfill capacity and looks forward to receiving further information on this issue on September 30, 2021.

Finally, the NIRB acknowledges the efforts made by Agnico Eagle to maintain the Project adequately during the COVID-19 outbreak and the continued monitoring as per the Terms and Conditions.

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