

**APPENDIX 29-23. ENVIRONMENTAL MANAGEMENT AND
PROTECTION PLAN**



AGNICO EAGLE

MELIADINE GOLD MINE

Environmental Management and Protection Plan

JANUARY 2024

VERSION 10_NWB

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EXECUTIVE SUMMARY

The Environmental Management and Protection Plan (EMPP) describes the overall intent and direction for environmental management at Agnico Eagle Mines Limited (Agnico Eagle) Meliadine Gold Project (Meliadine Mine). This document outlines and describes project-specific management plans, mitigation measures, adaptive management and other standards and requirements for specific areas of environmental management. Agnico Eagle's complies with and manages the conditions of the Nunavut Impact Review Board Project Certificate (#006), the Nunavut Water Board Type A Water Licence (2AM-MEL1631), and requirements pertaining to relevant laws and regulations. Agnico Eagle has also developed standard operating and inspection procedures that take into account licenses, permits and legal requirements pertaining to the Meliadine Mine.

A cyclical feedback loop will be employed where operations are planned and implemented, monitoring data collected and analyzed, and practices adjusted to promptly reduce or eliminate any observed negative impacts throughout the life of the Mine. Continual use of this feedback loop will allow adaptive management decisions to be made, and shall lead to improvements to the environmental management systems as necessary over time.

The EMPP allows flexibility to respond to changes, for example, in the mining development plan, the regulatory regime, the biophysical environment, technology, research results, and the understanding of Inuit Qaugimajatuqangit. Thresholds and indicators to trigger management actions are provided, where applicable, in the management plans associated with licenses and permits, along with a system of accountability.

Monitoring and adaptive management are essential tools for ensuring that a project progresses as planned, that mitigation measures are successful, that the procedures and practices are effective and that potential adverse impacts are avoided or minimized. Management Plans and relevant Standard Operating Procedures outline mechanisms such as monitoring, which will be used to refine and modify any mitigation measures.

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DOCUMENT CONTROL

Version	Date	Section	Page	Revision	Author
1	November 2012			First draft of the Environmental Management and Protection Plan	John Witteman, Env. Consultant, Agnico Eagle
2	March 2013	1.2	2-4	Add Project phases to Table 1-1 and details on adaptive management	John Witteman, Env. Consultant, Agnico Eagle
		3.2	11-13	Add details on adaptive management in design of plans	
		4.5	20-21	Independent audits and reviews	
3	April 2014	1.2	5	Monitoring and mitigation plans vs licensing process	John Witteman, Env. Consultant, Agnico Eagle
		1.3	5	Revision throughout life-of-mine	
		1.3	7	Added Table 1-3	
		2.1	8	Updated Sustainable Development Policy	
		4	16 and 18	Added design, practices and procedures; link with VECs and VSECs	
4	April 2015			Update of entire document for Water Licence Application	John Witteman, Env. Consultant, Agnico Eagle
		4.2.2	24	New section on Traditional Knowledge (IQ)	
		4.2.3	25	New section on Inspections	
5	June 2016	Executive Summary		Revised Section to reflect receipt of Water Licence	Golder Associates, Ltd.
		1		Revised Introduction	
		4.2.1		Revised Environmental Monitoring to meet Water Licence	
		4.2.3		Revised Inspections	
		4.4		Revised Table 4-4 to meet Water Licence	
6	March 2017	Table 4-1 Figure 4-2		Revised Table as per approved new sampling location nomenclature	Manon Turmel, Agnico Eagle Mines Ltd.

Version	Date	Section	Page	Revision	Author
7	February 2018	All		Revised to reflect current conditions at Site and reduce repetition	Alex Gauthier and Jennifer Brown, Agnico Eagle Mines Ltd.
8	December 2018	All		Revision required by part I Item 2 of the NWB water Licence 2AM MEL1631, Update relevant Management Plan Version and Date	Dan Gorton, Kevin Buck, Martin Theriault
9	March 2019			Addition of the tables 4.1, 4.2 and 4.3 (monitoring programs and list of constituents in each parameter group) Introduction to reflect the actual mine plan Change references to Appendix B	
10_NWB	January 2024	All		Submitted to Nunavut Water Board as part of the Meliadine Mine Water Licence Amendment and revamped plan to be inline with operating practices	Permitting Department

ACRONYMS

Agnico Eagle	Agnico Eagle Mines Limited
EA	Environmental Assessment
EMPP	Environmental Management and Protection Plan
FEIS	Final Environmental Impact Statement
IQ	Inuit Qaugimajatuqangit
NIRB	Nunavut Impact Review Board
NPC	Nunavut Planning Commission
NWB	Nunavut Water Board
QA/QC	Quality Assurance and Quality Control
VEC	Valued Ecosystem Component
VSEC	Valued Socio-Economic Component

SECTION 1 • INTRODUCTION

1.1 Purpose and Scope

The Environmental Management and Protection Plan (EMPP) outlines the environmental management system Agnico Eagle Mines Limited (Agnico Eagle) implements for its Meliadine Gold Mine (Meliadine Mine or the Mine), as well as the specific management plans that set standards and requirements for different areas of environmental management. The suite of plans for the Meliadine Mine have been established to measure and manage environmental effects of the Meliadine Mine throughout the life of mine (LOM) and are outlined in greater detail in Section 4.

Many of the plans are required by law or by conditions of Nunavut Impact Review Board (NIRB) Project Certificate No.006, and Nunavut Water Board (NWB) Type A Water Licence 2AM-MEL1631 issued for the Meliadine Mine. The EMPP addresses Type A Water Licence 2AM-MEL1631 Part I, Item 1.

1.2 History of the EMPP

The EMPP was prepared in accordance with the NIRB Guidelines to support the submission of the Final Environmental Impact Statement (FEIS) for the Meliadine Mine in 2014. At that time, an Environmental Management Plan was required to:

- Provide a systematic approach to consistently manage all environmental affairs, addressing concerns through the allocation of resources, assignment of responsibility and ongoing evaluation of practices, with an aim to improving its environmental performance by continual improvement of the management system.
- Provide a perspective on how potentially adverse environmental effects will be managed throughout the life of the Meliadine Mine.
- discuss the flexibility to respond to changes in the mining development plan, the regulatory regime, the biophysical and socio-economic environments, technology, research results, and the understanding of TK.
- Discuss how the results from the Environmental Management Plan will be used in applying adaptive environmental management throughout all phases of the Mine, and identify threshold/criteria and indicators to trigger management actions in each sub plan.

Through the evolution of the Meliadine Mine and regulatory review processes, management plans originally submitted to support the FEIS and Water Licence applications have continued to be refined to encompass the environmental management specifics to the plan. The guidelines outlined above (as were recommended for the development of an Environmental Management Plan) have been amalgamated within the specific management plan; thus, centralizing the controls, responsibilities, mitigations specific to a discipline within its appropriate place. While some aspect of Agnico Eagle's environmental management system remain in this EMPP, many details are now integrated within each plan as the Mine has evolved into operations. Within the EMPP, Agnico Eagle has also included a centralized location of the Mine's existing conditions and Mine Plan for continuity amongst plans.

SECTION 2 • MELIADINE MINE PLAN

Agnico Eagle operates the Meliadine Mine, located approximately 25 kilometres north of Rankin Inlet, and 80 kilometres southwest of Chesterfield Inlet in the Kivalliq region of Nunavut (Figure 1).

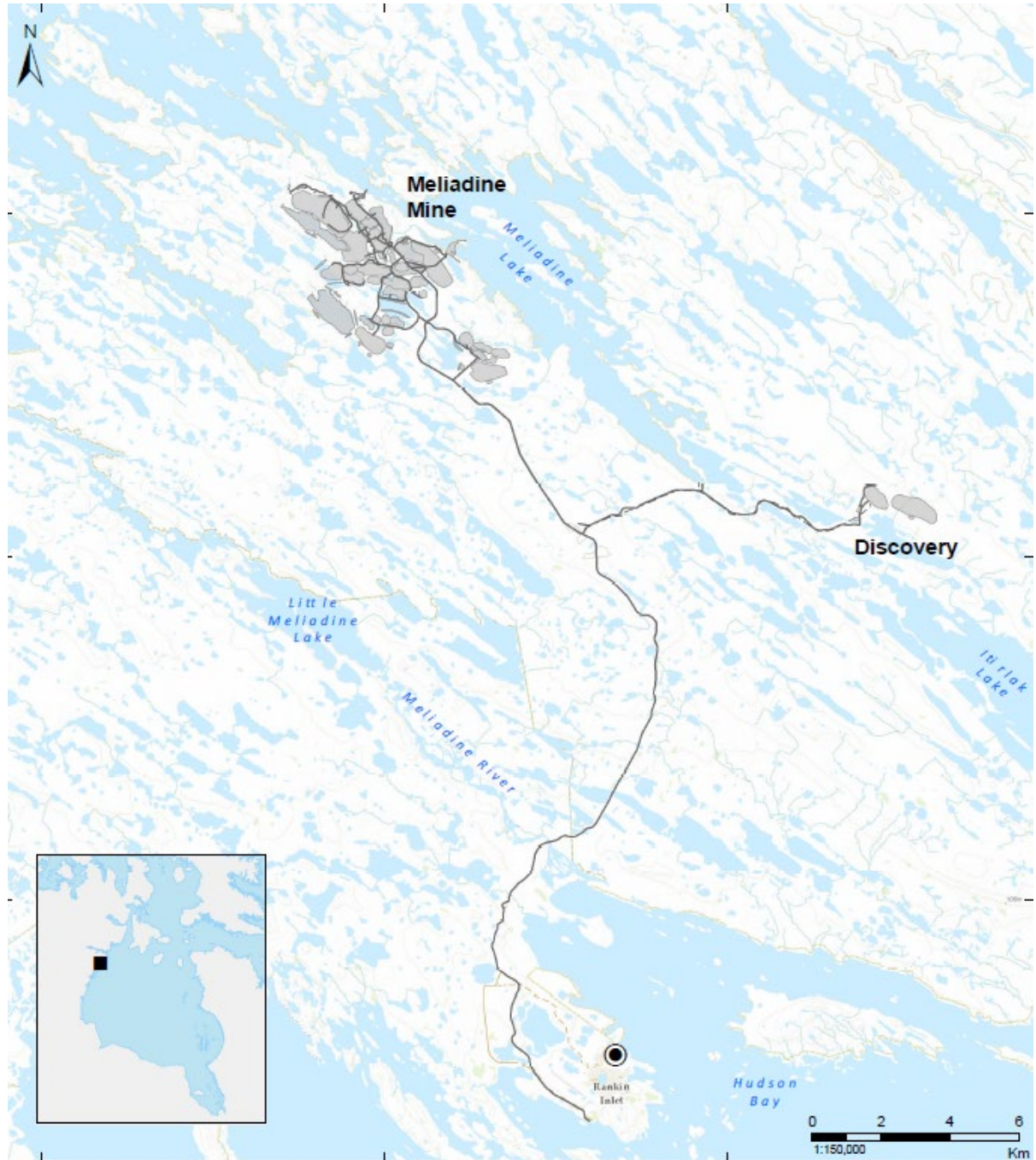
2.1 Mine Plan

Project Certificate No.006 (issued in 2015) included approval of a multi-phase approach to development, including mining of Tiriganiaq deposit using open pit and underground mining methods; and mining of the Pump, F Zone, Discovery, and Wesmeg deposits using open pit methods. Type A Water Licence 2AM-MEL1631 (issued in 2016) was primarily for the Tiriganiaq deposit.

The current operations include open pit and underground mining methods for the development of the Tiriganiaq gold deposit, with two open pits (Tiriganiaq Pit 1 and Tiriganiaq Pit 2) and one underground mine.

Saline effluent will be conveyed via a waterline which runs parallel to the All-weather Access Road (AWAR) which initiates at the Saline Effluent Treatment Plant (SETP) on-site and will connect to an engineered diffuser for discharge to Itivia Harbour. The engineered diffuser, suited for discharge of up to 20,000 m³/day, will be operated as per the Adaptive Management Plan.

The Application to amend Water Licence 2AM-MEL1631 includes continue mine operations to 2031 through open pit mining of F Zone, Wesmeg, Pump, and Discovery deposits and associated infrastructure.

Figure 1 Meliadine Mine Location

Meliadine Mine Water Licence Amendment Site Location

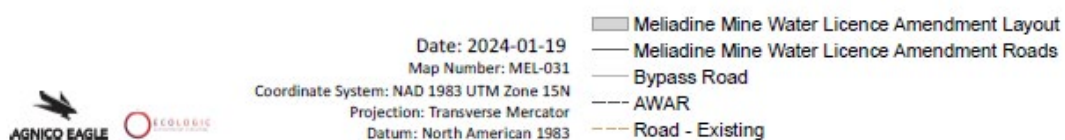
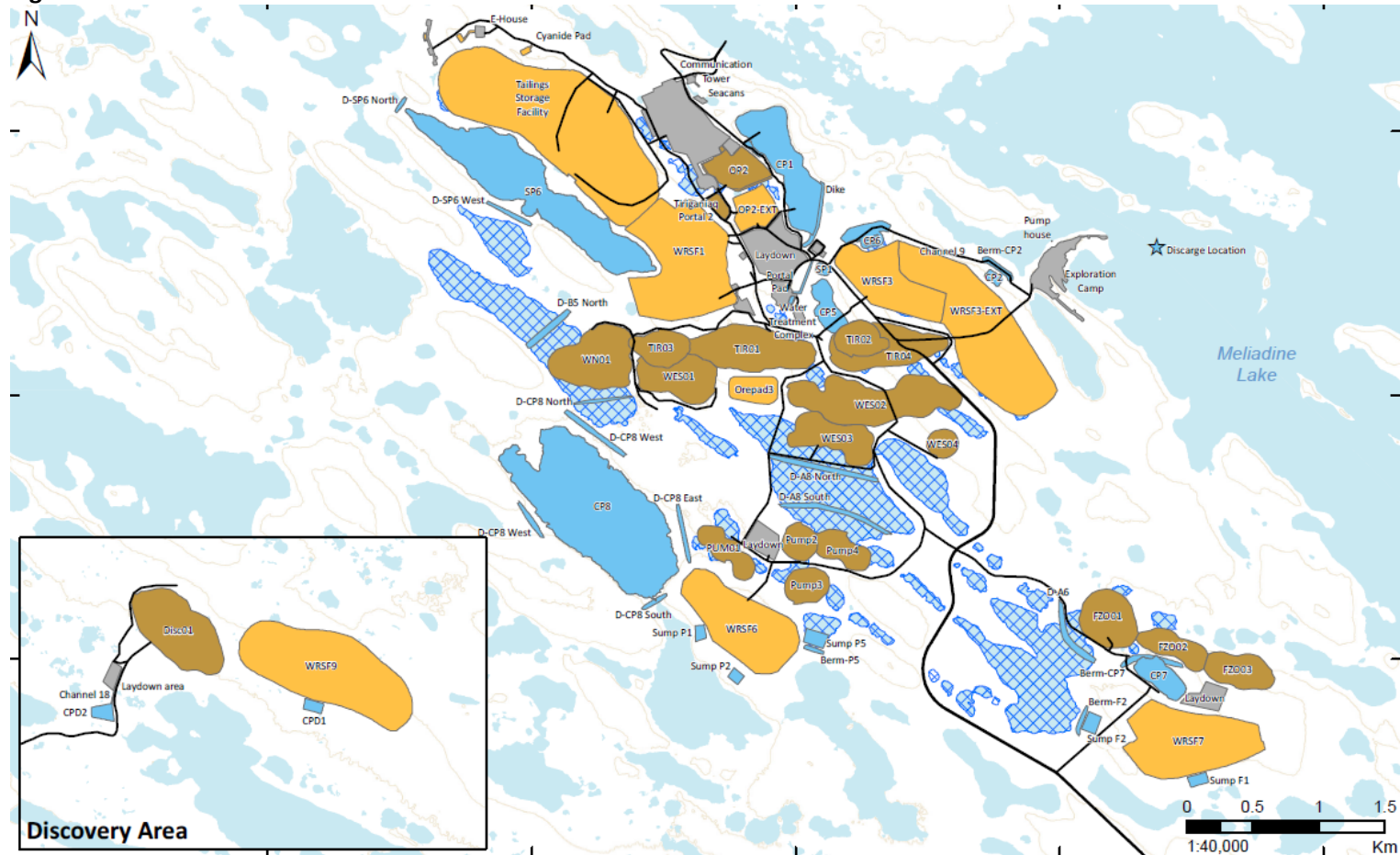


Figure 2 General Site Plan



Meliadine Mine Water Licence Amendment

General Site Plan



Date: 2024-01-19
 Map Number: MEL-112
 Coordinate System: NAD 1983 UTM Zone 15N
 Projection: Transverse Mercator
 Datum: North American 1983

Legend:

- Facilities
- Mining
- Storage
- Water Management
- Dewatered Lake
- Roads

SECTION 3 • EXISTING ENVIRONMENT

3.1 Site Conditions

The Mine is located in an area of poorly drained lowlands near the northwest coast of Hudson Bay. The dominant terrain in the Mine area consists of glacial landforms such as drumlins (glacial till), eskers (gravel and sand), and many small lakes. The topography is gently rolling with a mean elevation of 65 metres above sea level (masl) and a maximum relief of 20 metres.

The local overburden consists of a thin layer of topsoil overlying silty gravelly sand glacial till. Cobbles and boulders are present throughout the region at various depths. Bedrock at the mine site area consists of a stratigraphic sequence of clastic sediments, oxide iron formation, siltstones, graphitic argillite and mafic volcanic flows (Snowden 2008; Golder 2009).

The climate is extreme in the area, with long cold winters and short cool summers, and mean air temperatures of 10.5°C in July and -31°C in January. The mean annual air temperature at the Mine site is approximately -10.4 °C (Okane 2021). Strong winds blow from the north and north-northwest direction more than 30 percent of the time.

The mean annual precipitation in the area is approximately 430 mm and is typically equally split between rainfall and snowfall (Tetra Tech 2021).

Late-winter ice thicknesses on freshwater lakes in the mine site area were recorded from 1998 to 2000. The measured data indicated that ice thickness ranges from 1.0 to 2.3 m with an average thickness of 1.7 m. Ice covers usually appear by the end of October and are completely formed in early November. The spring ice melt typically begins in mid-June and is complete by early July (Golder 2012b).

3.2 Local Hydrology

The Mine is located within the Meliadine Lake watershed. Meliadine Lake has a surface water area of approximately 107 square kilometres (km²), a maximum length of 31 km, features a highly convoluted shoreline of 465 km and has over 200 islands. Unlike most lakes, it has two outflows that drain into Hudson Bay through two separate river systems. It has a drainage area of 560 km² upstream from its two outflows. Most drainage occurs via the Meliadine River, which originates at the southwest end of the lake. The Meliadine River flows for a total stream distance of 39 km. The Meliadine River flows through a series of waterbodies, until it reaches Little Meliadine Lake and then continues into Hudson Bay. A second, smaller outflow from the west basin of Meliadine Lake drains into Peter Lake, which discharges into Hudson Bay through the Diana River system (a stream distance of 70 km). At its mouth, the Diana River has a drainage area of 1,460 km².

Watersheds in the Mine area are comprised of an extensive network of waterbodies, and interconnecting streams. The hydrology of these watersheds is dominated by lake storage and evaporation.

3.3 Ice and Winter Flows

Late-winter ice thicknesses on freshwater lakes in the Mine area range between 1.0 to 2.3 m with an average thickness of 1.7 m. Ice covers usually appear by the end of October and are completely formed in early November. The spring ice melt (freshet) typically begins in mid-June and is complete by early July (Golder 2012b).

3.4 Spring Melt (Freshet) and Freeze-up Conditions

With the exception of the main outlet of Meliadine Lake, which has been observed to flow continuously throughout the year, outlets of waterbodies near the Mine typically start flowing late May or early June, followed by freshet flows in mid-to-late-June. Flows steadily decrease in July and low flows are ongoing from August to the end of October, prior to winter freeze.

3.5 Permafrost

The Mine is located in an area of continuous permafrost. The depth of permafrost is estimated to be in the order of 285 to 430 m and 400 m in average. The depth of the active layer ranges from about 1 m in areas with shallow overburden, up to 3 m adjacent to the lakes. It is anticipated that the active layer adjacent to lakes or below a body of moving water such as a stream will be deeper. The typical permafrost ground temperatures at the depths of zero annual amplitude (typically at the depth of below 18 m) are in the range of -5.9 to -7.0 °C in the areas away from lakes and streams. The geothermal gradient ranges from 0.016 to 0.02 °C/m (Golder 2012b).

3.6 Hydrogeology

Groundwater characteristics at areas of continuous permafrost that are generally present in the Mine area include the following flow regimes:

- A shallow flow regime located in an active layer (seasonally thawed) near the ground surface and above permafrost; and,
- A deep groundwater flow regime beneath the base of the permafrost.

From late spring to early autumn, when temperatures are above 0 °C, the active layer thaws. Within the active layer, the water table is expected to be a subdued replica of topography, and is expected to parallel the topographic surface. Mine area groundwater in the active layer flows to local depressions and ponds that drain to larger lakes.

Taliks exist beneath waterbodies that have sufficient depth such that they do not freeze to the bottom over the winter. Beneath small waterbodies that do not freeze to the bottom over the winter, a talik bulb that is not connected to the deep groundwater flow regime will form (a closed talik). Elongated waterbodies with terraces (where the depth is within the range of winter ice thickness), a central pool(s) (where the depth is greater than the range of winter ice thickness), and a width of 340 to 460 m or greater are expected to have open taliks extending to the deep groundwater flow regime at the Mine site. A review of bathymetric data, ice thickness data, and results of thermal modelling

suggests that Meliadine Lake and Lake B7 are likely to have open taliks connected to the deep groundwater flow regime (Golder 2012a).

Tiriganiaq Underground Mine is planned to extend to approximately 625 m below the ground surface; therefore, part of the underground mine will be operated below the base of the frozen permafrost (top of the cryopeg). The underground excavations will act as a sink for groundwater flow during operation, with water induced to flow through the bedrock to the underground mine workings once the mine has advanced below the base of the frozen permafrost.

Both Tiriganiaq Pit 1 and Tiriganiaq Pit 2 will be mined within the frozen permafrost, therefore, groundwater inflows to the open pits is expected to be negligible.

2D thermal modelling was completed to update the predicted depth to the base of permafrost in the study area, to assess the extent of lake taliks and permafrost limits (Golder 2021b).

The 2D thermal modelling considered supplemental thermistor data collected since the 2014 FEIS to improve and update understanding of existing permafrost conditions and to consider the effects of lake terrace geometries compared to what was evaluated in the 2014 FEIS (Golder 2021b,c). Only data from deep thermistors were used in the updated model compared to the shallower thermistors (less than 40 m deep) evaluated during the 2014 FEIS.

Taliks (areas of unfrozen ground) are to be expected where lake depths are greater than about 1.0 m to 2.3 m. Formation of an open talik, which penetrates through the permafrost, would be expected for lakes which exceed a critical depth and size. The thermal modelling update indicates that below Lake B7, Lake A8, Lake B5, Lake A6, Lake CP8, Lake D4 and Lake CH6 will have open taliks with some being connected to the deep groundwater flow regime (Golder 2021c).

SECTION 4 • ENVIRONMENTAL MANAGEMENT DOCUMENTATION

Agnico Eagle has a functioning environmental management system composed of numerous management plans that were developed and approved under its Project Certificate No.006, and Type A Water Licence 2AM-MEL1631. The structure of the Mine's environmental and socio-economic management documentation is shown in Table 1. The individual plans document the revision history, as required, as a result of changes in operations, technologies employed, the phase of the Meliadine Mine, the result of research findings commissioned by Agnico Eagle, improvements in safety procedures, and/or greater understanding of traditional knowledge (IQ). Changes to laws and regulations, environmental conditions, and other external factors can also have a bearing on the individual plan.

Individual plans are updated on different time basis as some plans (e.g., Water Management Plan or Mine Waste Management Plan), encompass major components of mine operation and there are many changes that can occur. Thus, as an adaptive strategy, the plans are revised to ensure compliance with our permits and prevent adverse environmental impacts.

In addition, through a comprehensive site wide inspection program whereby Agnico Eagle monitors different departments for compliance with our permits and management plans any non-conformity or observed deficiency can lead to corrective actions being taken and/or modifications of individual management plans.

To summarize, Agnico Eagle revises or modifies environmental management plans for the Meliadine Mine as operations advance. This is in response to legal requirements or observations (inspections) on site where there have been changes or modifications to existing management plan requirements. Therefore, Agnico Eagle has demonstrated adaptive management as a strategy to prevent or mitigate any adverse environmental impact. Any revisions or modifications are referred to in the Document Control Section of the specific management plans, along with the latest version number and date of revision.

Table 1 Environmental and Socio-Economic Monitoring, Mitigation, and Management Plans

Management Plan	Purpose of Plan	Type A Water Licence 2AM-MEL1631 Conditions	Project Certificate No.006 Terms and Conditions
MINE INFRASTRUCTURE			
Mine Waste Management Plan	The waste management objectives are to minimize potential impacts to the environment during all phases of mining. Mine waste management structures (tailings storage, waste rock and overburden storage) are utilized to contain and manage mine waste from areas affected by mining activities.	Supports Part F, item 13 and 21; and Part I, item 12	Supports Term and Condition 22, 23
Ore Storage Management Plan	The plan documents the management of ore mined at the Meliadine Mine.		
WATER, DOMESTIC WASTE, AND OPERATIONAL INFRASTRUCTURE			
Adaptive Management Plan	This plan is specific to discharge through the waterline. The primary objective of the AMP is to document specific management actions and mitigation measures to be taken when specified thresholds are exceeded. Note. Each of the management plans developed include a process of continuous improvement that is aimed at evaluating the effectiveness of the design features, mitigation measures, operating practices, and procedures put in place.	Supports Part B, Items 20 and 21 Part I, item 1d)	
Incineration Management Plan	The purpose of the plan is to provide consolidated information on the specifications, operations, management, monitoring, and reporting of the incinerator process for the Meliadine Mine.	Supports Part F, item 15	Supports Term and Condition 4
Landfarm Management Plan	The plan focuses on minimizing the waste footprint on-site, and maximizing remediation potential through implementation of bioremediation experience.	Supports Part F, item 20	
Landfill and Waste Management Plan	The plan highlights the waste segregation strategies (e.g., minimize the attraction of wildlife) that are implemented to minimize the quantity of waste to be placed in the landfill or incinerated.	Supports Part F, item 14	Supports Term and Condition 21, 75
Water Management Plan	The water management objectives are to minimize potential impacts to the quantity and quality of surface water at the Mine and surrounding waterbodies. The plan documents water management practices, proposed and existing infrastructure, the water balance model, water quality predictions, and for the water quality monitoring plan for the Mine.	Supports Part E, item 10-13	
Groundwater Management Plan	Groundwater quality and quantity metrics are monitored at points and frequencies identified in this plan with the purpose of monitoring inflows and outflows of mine water and associated water quality.	Supports Part E, item 15; Part I, item 1e)	Supports Term and Condition 24-26
Freshet Action Plan	The plan identifies areas of risk during freshet, risk management, and the procedures necessary to address potential concerns.	Supports Part D, item 9	
Sediment and Erosion Management Plan	The plan presents the monitoring and mitigating actions during periods of construction near water, during freshet or significant runoff, and during periods of potential impact to waterbodies during operation	Supports Part D, item 8; and Part E, item 9	Supports Term and Condition 16, 28
Water Quality and Flow Monitoring Plan	Regulated discharge monitoring occurs at monitoring points specified in the Type A Water Licence, other licenses, or regulations. It includes discharge limits that must be achieved to maintain compliance with an authorization (e.g., water licence) or regulation (e.g., Metal and Diamond Mining Effluent Regulations).	Supports Part I, item 1e); Part I, item 5; Part I, item 8, Table 2 – Monitoring Program	

Management Plan	Purpose of Plan	Type A Water Licence 2AM-MEL1631 Conditions	Project Certificate No.006 Terms and Conditions
Water Quality Management and Optimization Plan	Developed to support the Water Licence Emergency Amendment	Supports Part F, Item 9	
CONSTRUCTION AND TRANSPORTATION INFRASTRUCTURE			
Roads Management Plan	The plan outlines managing the access, service, and haul roads for the Meliadine Mine, covering construction, operations, and final closure.	Supports Part D, item 14	Supports Term and Condition 48, 125, 126
MATERIALS MANAGEMENT AND EMERGENCY RESPONSE			
Ammonia Management Plan	The plan provides guidance for monitoring ammonia levels at the mine site, as part of the conditions applying to waste disposal and management listed in the water licence for this water quality parameter.	Supports Part F, item 3	
Bulk Fuel Storage Facility: Environmental Performance Monitoring Plan	The plan outlines the environmental performance of the design, operation, and maintenance of the bulk fuel storage tanks at Meliadine.	Supports Part I, item 11	
Explosives Management Plan	Per the Type A Water Licence – the “Emulsion Plant” means a facility designed for manufacturing of emulsion-based explosives, as indicated in the Explosives Management Plan. The plan provides details of the Emulsion Plant.		
Hazardous Materials Management Plan	The plan provides instruction on the prevention, detection, containment, response, and mitigation of accidents that could result from handling hazardous materials	Supports Part F, item 17; Part H, item 1	
Itivia Bulk Fuel Storage Facility Management Plan	The plan outlines the environmental performance of the design, operation, and maintenance of the bulk fuel storage tanks at Itivia.	Supports Part I, item 11	
Risk Management and Emergency Response Plan	The plan provides a consolidated source of information for employees, contractors, and site visitors to respond quickly and efficiently to any foreseeable emergency that would likely occur in relation with Project activities. The plan addresses emergency scenarios that could result from mining, processing, transportation, and related activities at the Meliadine Mine; including but not limited to, the mine site, All-weather Access Road, bypass road, and Agnico Eagle Itivia facilities.	Supports Part H, item 1, 5, 6	Supports Term and Condition 120
Spill Contingency Plan	The plan documents measures to minimize the impacts of spills by the establishment of predetermined lines of response, plans of action, and to protect the safety of workers and contractors in the event of a spill.	Supports Part H, items 1-9	Supports Term and Condition 124
Occupational Health and Safety Plan	The Occupational Health and Safety Plan (OHSP) was built focusing on accident prevention and risk management.		
OPEP/OPPP	The OPEP designates lines of authority, responsibility, establishes proper reporting and details plans of action in the event of a spill. The OPPP is designated to ensure the necessary planning to prevent a spill was undertaken.	Supports Part H, item 1	Supports Term and Condition 67, 120
Shipping Management Plan	The plans covers the scope of shipping activities for the Meliadine Mine and was developed in accordance with federal legislation, notably the <i>Canada Shipping Act</i> and the <i>Arctic Waters Pollution Prevention Act</i> , and associated regulations.		Supports Term and Condition 76, 79, 81, 120, 127

Management Plan	Purpose of Plan	Type A Water Licence 2AM-MEL1631 Conditions	Project Certificate No.006 Terms and Conditions
ENVIRONMENTAL PROTECTION AND MONITORING PLANS			
Air Quality Monitoring Plan	The plan is designed according to the scale of the Meliadine Mine and the effects identified through the environmental impact assessment process. The predicted ambient air quality concentrations were considered in the design of an appropriate monitoring program and the development of mitigation and adaptive management strategies. Air quality monitoring focuses on measuring airborne particulates, dustfall, and the gaseous compounds NO ₂ and SO ₂ .		Supports Term and Condition 1, 2, 27b, 116
Aquatic Effects Monitoring Plan	The AEMP is a comprehensive study that considers water quality sampling, sediment quality sampling, an assessment of the benthic community and an assessment of plankton abundance. The study considers both the proximity of near field sampling stations as well as far field stations.	Supports Part I, items 1a), 2; Schedule I	Supports Term and Condition 27, 30
ARD-ML Testing Plan	Developed to support Meliadine Water Licence Amendment	n/a	Supports Terms and Condition 23
Blast Monitoring Plan	The plan describes the strategy regarding Blast Vibration Monitoring including surface, underground and construction blasting. The program was developed to minimize the effects of blasting on fish and fish habitat, water quality, and wildlife.		Supports Term and Condition 33
Borrow Pits and Quarries Management Plan	To plan outlines environmental aspects of developing, using, and closing the borrow pits and quarries necessary for the overall Meliadine Mine.	Supports Part D, item 14	
Cultural and Heritage Resources Protection Plan	The plan outlines heritage awareness training for staff, contractors, and subcontractors, as well mitigation measures to be incorporated into each stage of the archaeological work, including the design and implementation		Supports Term and Condition 107
Dust Management Plan	The plan is a framework for the management and control of dust (airborne particulate matter) arising from mine activities and traffic. Best management practices are identified to minimize and reduce the impact of dust on the natural and human environment. The plan identifies the sources of dust along with measures for their control during operation and closure.	Supports Part E, item 3-4, 18	Supports Term and Condition 3, 6
Environmental Management Protection Plan		Supports Part I, item 1	
Greenhouse Gas Reduction Plan	The plan provides predicted emissions for the Mine, sources of greenhouse gases, followed by monitoring measures and initiatives taken to reduce emissions.		Supports Term and Condition 9
Noise Abatement and Monitoring Plan	The plan includes a Noise Abatement Plan (NAP) and Noise Monitoring Plan (NMP). The NAP describes how noise abatement is incorporated into the Meliadine Mine, while the NMP describes the annual ambient noise monitoring program.		Supports Term and Condition 10
Ocean Discharge Monitoring Plan	The plan outlines the discharge of treated saline effluent into the marine environment. It summarizes the field sampling study design strategy, methods, laboratory requirements, quality assurance and quality control, and reporting.		Supports Term and Condition 131
Fish Offsetting Plan	To discuss measures to be implemented to offset the loss of fish habitat resulting from Meliadine Mine activities and components.		

Management Plan	Purpose of Plan	Type A Water Licence 2AM-MEL1631 Conditions	Project Certificate No.006 Terms and Conditions
Quality Assurance / Quality Control	The plan provides consolidated information on the quality assurance and quality control measures.	Supports Part I, items 17, 18	
Terrestrial Environment Management and Monitoring Plan	The plan is designed to monitor potential residual effects of the Meliadine Mine on wildlife habitat, wildlife distribution, and local wildlife abundance when mitigation strategies are implemented during operations.		Supports Term and Condition 13, 37-40, 43-47, 52, 55-57, 61, 62, 72, 74, 75, 118, and 119
Wildlife Protection and Response Plan	The plan identifies measures to deter wildlife from becoming habituated to the Meliadine site. It also provides information on species-specific response plans for ungulates and predatory mammals, and general wildlife awareness.		Supports Term and Condition 69
CLOSURE AND RECLAMATION			
Interim Closure and Reclamation Plan	Outlines how the various mine components will be decommissioned, reclaimed and/or closed following temporary closure or final mine closure. Includes care and maintenance.	Supports Part J	
SOCIO-ECONOMIC PLANS			
Business Development Plan	Superseded by IIBA		
Community Involvement Plan	Superseded by IIBA		
Human Resources Plan	Superseded by IIBA		
Socio-Economic Management Plan	Superseded by IIBA		

SECTION 5 • MAIN ELEMENTS OF ENVIRONMENTAL MANAGEMENT SYSTEM

Agnico Eagle’s environmental management system is built around seven main elements, which are all connected, and each is a driver for effective operations. These main elements are summarized in the following sections.

Main Element	
1. Responsibilities and Resource Allocation	5. Follow-up and Adaptive Management
2. Design of Mitigation and Monitoring Plans	6. Audit, Review, Update
3. Performance Measurement	7. Inspections
4. Monitoring	

5.1 Responsibilities and Resource Allocation

Responsibility for decision-making and providing the resources for the implementation, maintenance, and improvements to the EMPP rests with mine management with input from Agnico Eagle’s corporate office. Management responses to potential adverse effects will be based on the analysis of monitoring results and an understanding of the cause and effect, the severity and duration of the adverse effect, and the impact on traditional pursuits. Decisions made using an adaptive management process will improve the EMPP’s effectiveness in addressing environmental effects while maintaining the economic viability of the mine. The Environment Superintendent, as a member of the mine senior management team, will have input to collective decisions.

The response initiated and resources provided would be commensurate with the gravity and duration of the observed effect. The goal is to remove the cause of the adverse effect or reduce the observed effect to an acceptable level. This could include administrative actions, such as adjustments to standard operating procedures, especially if negative effects persist.

5.2 Design of Mitigation and Monitoring Plans

Environmental mitigation and monitoring plans outline specific procedures and actions considered essential in accomplishing defined tasks required for the Meliadine Mine. These plans include various responses, mitigation measures, and strategies designed to be corresponding to the potential adverse effects. The plans also include monitoring provisions and programs designed with the objective of assessing effectiveness of the planned mitigation measures after such measures have been implemented. These plans assist Agnico Eagle in modifying its work activities and in making improvements to its mitigation measures during all phases of the Mine.

5.3 Performance Measurement

Compliance monitoring and management is implemented for the Meliadine Mine, to ensure that performance of its regulatory obligations expectations are met. This is achieved by:

- Actively maintaining a permit and licence compliance matrix.
- Implementing awareness training for its employees and contractors.
- Conduct regular activities to monitor compliance.

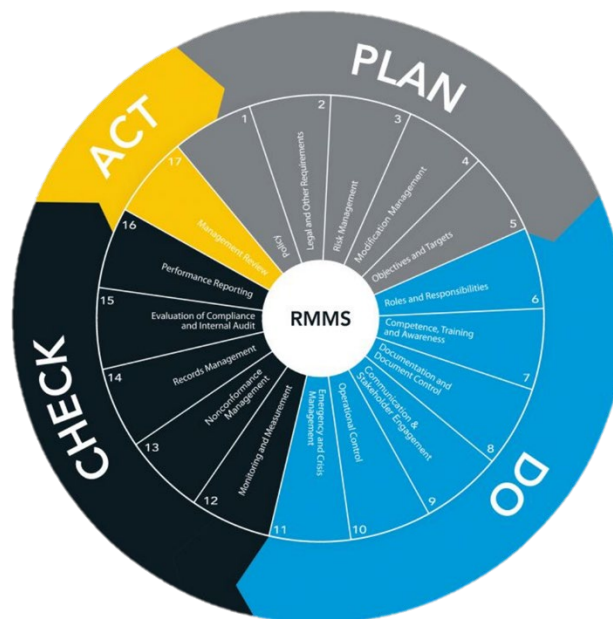
Government approvals and legislative requirements for the Meliadine Mine is maintained.

5.4 Monitoring

Monitoring is conducted from construction to post-closure, to ensure compliance with relevant regulatory requirements and permitting conditions, and to verify the accuracy of the environmental impact predictions and the effectiveness of the mitigation measures. If unusual or unforeseen adverse environmental impacts are noticed, corrective action will be put in place.

Through the adaptive management process, the existing mitigation measures will be adjusted or new mitigation measures implemented if necessary. External reporting will be completed, as required. As a result, site Management Plans may be revised or modified as required.

Whereby, Agnico Eagle effectively follows a cyclical approach of continual improvement through the PLAN-DO-CHECK-ACT cycle.



5.5 Follow-up and Adaptive Management

Management plans developed for the Mine include an intrinsic process of continuous improvement that is aimed at evaluating the effectiveness of the design features, mitigation measures, operating practices, and procedures put in place.

Making use of adaptive management requires the recognition that it is a structured, iterative approach to environmental management decision-making (CPR 2011). Many Valued Ecosystem Components (VECs) applicable to the Mine are part of dynamic natural systems where uncertainty can be a significant factor. The goal is to reduce uncertainty over time by incorporating learnings from design, monitoring, mitigation, and changes in operations into environmental management at the Mine site. Where applicable, an adaptive management strategy or approach will be used for those VECs that will be monitored by Agnico Eagle. Trends will be documented and compared to the pre-established goals/thresholds. Any corrective action plan will also be documented.

It is through monitoring that any unanticipated adverse environmental impacts can be discovered. Adaptive management is particularly useful in implementing the appropriate remedial measures in these instances. Additionally, the objectives of monitoring and adaptive management are to verify that:

- commitments are fulfilled;
- regulatory and other requirements are met;
- adverse effects are avoided or minimized;
- benefits are enhanced; and
- specific mitigation measures and associated management actions are taken should unforeseen events occur, so thresholds are not exceeded.

5.6 Audit, Review, and Update

Regulatory agencies inspect the Mine over its life for compliance with permits, regulations, and licences. Audits are also be conducted internally; however, independent researchers or consultants are also be engaged to complete the audits. Management reviews are also conducted to determine the continued suitability, adequacy, and effectiveness of the management plans. The internal inspection process can also be considered as an audit procedure. Outputs of the audits and management reviews could include:

- recommendations to revise the Management Plans;
- revision to established objectives and targets; and
- specifications for corrective actions for individual management plans.

5.7 Inspections

Agnico Eagle is responsible for inspection and maintenance of all mine components and activities at all phases of the mine life at the Mine site and Itivia site in Rankin Inlet. A regular inspection program leads to the early identification of areas where improvements are needed. The early resolution of any deficiencies will result in less ongoing maintenance and repair of mine components, and a reduction in the risk of adverse environmental effects.

Inspections ensure that Mine components are constructed, operated, maintained, managed, and closed in an environmentally sound, safe, and efficient manner. Further, inspections assist in obtaining better environmental outcomes for all activities and more timely maintenance of mine components throughout the mine life.

For the most part mine environmental personnel having knowledge and experience with the mine components and activities carry out the inspections. Training is provided by Agnico Eagle to effectively and efficiently complete inspections. Inspections result in month-end summary reports that are distributed to mine management and regulators, as needed. This allows action to be taken to address any deficiencies in components or activities. Inspection reports are retained on site by the respective inspecting departments.

REFERENCES

- Agnico Eagle (Agnico Eagle Mines Limited). 2014. Meliadine Gold Project, Nunavut. Final Environmental Impact Statement. Submitted to the Nunavut Impact Review Board. April 2014.
- CPR (Center for Progressive Reform). 2011. Making Good Use of Adaptive Management.
http://www.progressivereform.org/articles/Adaptive_Management_1104.pdf
- Golder (Golder Associated Ltd.). 2009. Assess of completeness of geotechnical data for feasibility design Tiriganiaq open pit. Submitted to Comaplex Minerals Corp., 26 May 2009, Doc. 008 Rev. 0
- Golder. 2012a. SD 7-2 Aquatic Baseline Studies- Meliadine Gold Project, Nunavut, Canada. A Technical Report Submitted to Agnico Eagle Mines Ltd. by Golder Associates, September 19, 2012.
- Golder. 2012b. SD 6-1 Permafrost Thermal Regime Baseline Studies- Meliadine Gold Project, Nunavut, Canada. A Technical Report Submitted to Agnico Eagle Mines Ltd. by Golder Associates, September 25, 2012.
- Golder. 2021b. Meliadine Extension - 2020 Thermal Assessment. Ref No. 20136436-815-R-Rev1. November 2021.
- Golder. 2021c. Summary of Hydrogeology Existing Conditions - Meliadine Extension. Ref No. 20136436-855-R-Rev2. November 2021.
- Okane (Okane Consultants Inc. 2021a. Meliadine Future Climate Change Datasets. Prepared for Agnico Eagle Mines Ltd. Rev 1, June 2021.
- Snowden. 2008. Tiriganiaq gold deposit, Nunavut – resource update. Submitted to Comaplex Minerals Corp. January 2008.
- Tetra Tech. 2021c. Rankin Inlet Design Storm and Precipitation Frequency Quantiles Update Meliadine Gold Mine, Nunavut. August 18, 2021.