AGNICO EAGLE

MELIADINE DIVISION

Type A Water Licence 2AM-MEL1631 Amendment

AUGUST 2020

EXECUTIVE SUMMARY

Agnico Eagle Mines Limited (Agnico Eagle) is operating the Meliadine Gold Mine, located approximately 25 kilometers north of Rankin Inlet, and 80 kilometers southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. The mine plan includes 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.

Agnico Eagle is proposing changes to the approved project activities under Type A Water Licence 2AM-MEL1631. Specifically, Agnico Eagle is seeking approval to include the following amendments:

- Updated total dissolved solids (TDS) thresholds to Meliadine Lake;
- Increase annual freshwater consumption;
- Additional laydown area;
- Updated waste management strategy;
- Construction of site access roads; and
- Updated Interim Closure and Reclamation Plan.

These items were all included in previous Nunavut Impact Review Board (NIRB) and Nunavut Planning Commission (NPC) determinations on the Meliadine Mine, but were not included in previous water licence applications.

The NIRB is currently considering a Project Certificate Reconsideration Application for a proposed waterline between the mine and Melvin Bay, which is new mine infrastructure. This application for amendment to 2AM-MEL1631 includes a focused alternative to surface water management should the Project Certificate be amended to permit the waterline, which could provide a second receiver option of Melvin Bay for the transfer of CP1 water to Meliadine Lake.

Agnico Eagle requests the Nunavut Water Board amend Type A Water Licence 2AM-MEL1631 where appropriate to include the components and associated infrastructure to account for the requested infrastructure and activities.

The proposed amendments will begin as soon as approval and permits for the amendment applications are received (requested for Ministerial approval before May 2021, to ensure the updated water management strategy can be implemented in time for freshet 2021). The proposed amendment activities do not change the Mine schedule or relate to any expansions. The Mine is currently in operation and is anticipated to be operational and in production through 2027, with closure and post-closure activities continuing until 2037.

ᓇᐃᓈᖅᓯᒪᔪᖅ

ᐊᒡᓃᑯ ᐄᒍ ᐅᔭᕋᒃᑕᕆᐊᓕᕆᔾᔪᑦ (ᐊᒡᓃᑯᒃᑯᑦ) ᒫᓐᓇ ᐊᐅᓛᖅᑎᑦᑎᔪᑦ ᑕᓯᕐᔪᐊᕐᒥᑦ ᒌᓗᒧᑦ ᐅᔭᕋᒃᑕᕆᐊᕐᒥᑦ, 25 ᑭᓛᒥᑕᐃᑦ ᐅᐊᖕᓇᖕᒐᓂᑦ ᑲᖏᖅᓱᓂᕐᒥᑦ ᐅᖕᒐᓯᒃᑎᒋᔪᖅ, ᐊᒻᒪᓗ 80 ᑭᓛᒥᑕᐃᑦ ᓂᒋᖅᐸᓯᐊᓂᑦ ᐱᖕᒐᖕᓇᖅᐸᓯᐊᓂᑦ ᐃᒡᓗᓕᓕᖅᔪᖕᒥᑦ ᐅᖕᒐᓯᒃᑎᒋᔪᖅ ᑭᕙᓪᓕᕐᒥᑦ ᓄᓇᕗᒥᑦ. ᐅᔭᕋᒃᑕᕆᐊᕐᒧᑦ ᐸᕐᓇᐅᑎᒥᑦ ᐃᓚᐅᔪᑦ ᓄᓇᒥᑦ ᐅᒃᑯᐃᖕᒐᔪᖅ ᐊᒻᒪᓗ ᓄᓇᐅᑉ ᐃᓗᐊᓂᑦ ᐅᔭᕋᒃᑕᕆᐊᑦ ᐱᕙᓪᓕᐊᔭᐅᓂᖕᒐᓄᑦ ᑎᑎᕋᓂᐊᖅ ᒨᓗᑕᓕᒃ, ᒪᕐᕉᖕᓂᒃ ᓄᓇᒥᑦ ᐅᒃᑯᐃᖕᒐᔪᖃᖅᑯᓂ (ᑎᑎᕋᓂᐊᖅ ᓄᓇᒥᑦ ᐅᒃᑯᐃᖕᒐᔪᖅ 1 ᐊᒻᒪᓗ ᑎᑎᕋᓂᐊᖅ ᓄᓇᒥᑦ ᐅᒃᑯᐃᖕᒐᔪᖅ 2) ᐊᒻᒪᓗ ᐊᑕᐅᓯᖅ ᓄᓇᐅᑉ ᐃᓗᐊᓂᑦ ᐅᔭᕋᒃᑕᕆᐊᖅ.

ᐊᒡᓃᑯᒃᑯᑦ ᐊᓯᐊᙶᖅᓯᔪᒪᔪᑦ ᓈᒻᒪᒋᔭᐅᔪᖅ ᐱᓕᕆᐊᕐᒥᑦ ᖃᓄᐃᓕᐅᕐᓂᖏᓐᓂᑦ ᒪᓕᒃᑯᒍ Type A ᐃᒪᕐᒧᑦ ᓚᐃᓴᓐᓯ 2AM-MEL1631. ᐱᓗᐊᖅᑐᒥᑦ, ᐊᒡᓃᑯᒃᑯᑦ ᐃᓚᐅᑎᑦᑎᔪᒪᔪᑦ ᐅᑯᓂᙵᑦ ᐋᖅᑭᐊᖅᓯᓂᐅᔪᓂᒃ:

- ᐅᑉᐳᒥᒨᓕᖅᑐᖅᓯᒪᔪᑦ ᑲᑎᕐᓗᒋᑦ ᓄᖑᑎᖅᓯᒪᔪᑦ ᓯᑎᔪᑦ ᑎᑭᐅᑎᓂᐅᔪᑦ ᑕᓯᕐᔪᐊᕐᒧᑦ;
- ᐊᖏᒡᓕᒋᐊᕐᓗᒍ ᐊᕐᕌᒍᑕᒦᖅ ᐃᒪᑦᑎᐊᕙᒃᑐᕐᓂᖅ;
- ᐱᕐᑯᑎᓄᑦ ᐃᓂᒃᓴᖃᕐᕕᒃᑲᓂᖅ;
- ᐅᑉᐳᒥᒨᓕᖅᑐᖅᓯᒪᔪᖅ ᐃᒪᕐᒥᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᖅᑑᕈᑎ;
- ᓴᓇᔭᐅᕙᓪᓕᐊᔪᒧᙱᐅᔪᖅ ᐊᑉᑯᑏᑦ; ᐊᒻᒪᓗ
- ᐅᑉᐳᒥᒨᓕᖅᑐᖅᓯᒪᔪᖅ ᐅᒃᑯᐊᖅᐸᓪᓕᐊᓕᖅᐸᑦ ᐊᒻᒪᓗ ᐅᑎᖅᑎᑎᕙᓪᓕᐊᓂᕐᒧᑦ ᐸᕐᓇᐅᑎ.

ᑖᑉᑯᐊ ᐃᓚᐅᓗᒃᑖᓚᐅᖅᑐᑦ ᐊᕙᑎᓕᕆᔾᔪᑦ ᐊᒻᒪᓗ ᓄᓇᕗᒻᒥ ᐸᕐᓇᐃᔾᔪᑦ ᖃᐅᔾᔪᑎᖕᒋᓐᓄᑦ ᑕᓯᕐᔪᐊᕐᒧᑦ, ᑭᓯᐊᓂ ᐃᓚᐅᓚᐅᕐᒋᑦᑐᑦ ᐃᒪᕐᒧᑦ ᓚᐃᓴᓐᓯᒧᑦ ᑐᒃᓯᕋᐅᑕᐅᓚᐅᖅᑐᓄᑦ.

ᐊᕙᑎᓕᕆᔾᔪᑦ ᒫᓐᓇᐅᔪᖅ ᐃᓱᒪᒋᔭᖃᖅᑐᑦ ᐱᓕᕆᐊᕐᒧᑦ ᓇᓗᓇᐃᒃᑯᑕᕐᒥᒃ ᐃᓱᒪᒃᓴᖅᓯᐅᕆᒃᑲᓂᕐᓂᕐᒧᑦ ᑐᒃᓯᕋᐅᑎ ᐃᒪᕐᒧᑦ ᓱᑉᐳᓕᓕᐅᖅᑕᐅᔪᒪᔪᒧᑦ ᐊᑯᓂᖕᒐᓂᑦ ᐅᔭᕋᒃᑕᕆᐊᑉ ᐊᒻᒪᓗ ᐃᑎᕝᕕᐊᓄᑦ, ᑖᒻᓇ ᓄᑖᖑᔪᖅ ᐅᔭᕋᒃᑕᕆᐊᑉ ᐱᕐᑎᖏᓐᓂᑦ. ᑐᒃᓯᕋᐅᑎ ᐋᖅᑭᐊᕐᓂᐊᕐᓗᒍ 2AM-MEL1631 ᐃᓚᐅᔪᑦ ᑕᐅᑐᒐᖃᕐᓂᒃᑯᑦ ᐊᓯᐊᒍᙳᖅ ᐃᒪᕐᒥᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᐱᓕᕆᐊᕐᒧᑦ ᓇᓗᓇᐃᒃᑯᑕᖅ ᐋᖅᑭᐊᕐᓂᐊᖅᐸᑦ ᐃᒪᕐᒧᑦ ᓱᑉᐳᓕᓕᐅᕐᓂᐊᕐᓗᓂ, ᑐᓂᓯᔪᖕᓇᖅᑐᖅ ᑐᓪᓕᐊᓂᑦ ᑯᕕᓯᕝᕕᐅᓂᐊᖅᑐᒥᑦ ᐃᑎᕝᕕᐊᓂᑦ CP1-ᒥᑦ ᐃᒪᖅ ᑕᓯᕐᔪᐊᕐᒧᐊᕐᓂᐊᕐᓗᒍ.

ᐊᒡᓃᑯᒃᑯᑦ ᓄᓇᕗᒻᒥ ᐃᒪᓕᕆᔾᔪᑎᓂᑦ ᐋᖅᑭᐊᖅᓯᖅᑯᔾᔪᑦ Type A ᐃᒪᕐᒧᑦ ᓚᐃᓴᓐᓯ 2AM-MEL1631-ᒥᑦ ᐊᑐᕆᐊᖃᖅᑐᒥᑦ ᐃᓚᐅᓂᐊᕐᓗᒋᑦ ᐃᓚᒋᔭᐅᔪᑦ ᐊᒻᒪᓗ ᑕᒪᑐᒧᙵ ᐱᖁᑎᑦ ᐊᑐᕐᓂᐊᕐᓗᓂ ᐱᖁᑎᒧᑦ ᐊᒻᒪᓗ ᖃᓄᐃᓕᐅᕐᓂᐅᔪᓄᑦ.

ᐋᖅᑭᐊᖅᓯᓂᐅᔪᒪᔪᑦ ᐱᒋᐊᑲᐅᑎᒋᓇᔭᖅᑐᑦ ᓈᒻᒪᒋᔭᐅᑐᐊᖅᐸᑦ ᐊᒻᒪᓗ ᐱᔪᖕᓇᖅᑎᑦᑎᓃᑦ ᐋᖅᑭᐊᖅᓯᓂᕐᒧᑦ ᑐᒃᓯᕋᐅᑎᓂᒃ ᐱᔭᐅᒃᐸᑕ (ᒥᓂᔅᑕᒧᑦ ᓈᒻᒪᒋᔭᐅᓗᓂ ᓄᕋᐃᑦ 2021 ᓯᕗᓂᐊᒍᑦ, ᐅᑉᐳᒥᒨᓕᖅᑐᖅᓯᒪᔪᖅ ᐃᒪᕐᒥᒃ ᐊᐅᓚᑦᑎᓂᕐᒧᑦ ᖃᓄᖅᑑᕈᑎ ᐊᑐᓕᖅᑎᑕᐅᔪᖕᓇᕐᓂᐊᕐᒪᑦ ᐊᐅᒃᐸᓪᓕᐊᓂᖃᕐᓂᐊᕌᖅᑎᓪᓗᒍ 2021-ᒥᑦ). ᑐᒃᓯᕋᐅᑕᐅᔪᑦ ᐋᖅᑭᐊᖅᓯᓂᕐᒧᑦ ᖃᓄᐃᓕᐅᕐᓂᐅᔪᑦ ᐊᓯᐊᙶᖅᓯᙳᒋᑦᑐᑦ ᐅᔭᕋᒃᑕᕆᐊᑉ ᐋᖅᑭᐅᒪᓂᖕᒐᓂᑦ ᐱᔾᔪᑎᖃᙱᓪᓗᓂᓗ ᓱᓇᑐᐃᓐᓇᓂᒃ ᐊᖏᒡᓕᒋᐊᖅᓯᓂᐅᔪᓂᒃ. ᒫᓐᓇ ᐅᔭᕋᒃᑕᕆᐊᖅ ᐊᐅᓛᖅᑐᖅ ᐊᒻᒪᓗ ᓂᕆᐅᒋᔭᐅᔪᖅ ᐊᐅᓛᕐᓂᐊᕐᓂᖕᒐᓄᑦ ᐊᒻᒪᓗ ᐱᓕᐅᕆᕙᓪᓕᐊᓗᑎᒃ 2027-ᒧᑦ ᑎᑭᓪᓗᒍ, ᐅᒃᑯᐊᖅᐸᓪᓕᐊᓗᑎᒃ ᐊᒻᒪᓗ ᐅᒃᑯᐊᖅᓯᒪᓕᖅᑎᓪᓗᒍ ᖃᓄᐃᓕᐅᕐᓂᐅᔪᑦ ᑲᔪᓯᓗᑎᒃ 2037-ᒧᑦ ᑎᑭᓪᓗᒍ.

Table of Contents

EXECUTIVE SUMMARY i

ᓇᐃᓐᖏᑦᑐᖅ ii

SECTION 1. Introduction 1

1.1 Project Definition 3

1.2 The Proponent 3

1.3 Sustainable Development and the Precautionary Principle 4

1.3.1 Application of the Precautionary Principle 4

1.4 Regional Context 5

1.5 Regulatory Regime 5

1.6 Consultation 10

SECTION 2. Project Description and Alternatives 12

2.1 Rationale 12

2.2 Mine Schedule 12

2.3 Project Components and Activities 12

2.3.1 Total Dissolved Solids Thresholds 12

2.3.2 Freshwater Consumption 16

2.3.3 Laydown Area 16

2.3.4 Updated Waste Management Strategy 18

2.3.5 Site Access Roads 19

2.3.6 Security 20

2.4 Alternatives 26

2.4.1 CP1 Water Diversion to Waterline 29

SECTION 3. References 31

Appendix A – Water Balance and Water Quality FOrecast 32

Appendix B – Water Quality Management and Optimization Plan 33

Appendix C – Water Management Plan 34

Appendix D – Mine Waste Management Plan 35

Appendix E – Prefeasibility Level Design WRSF3 & Water Management Infrastructure 36

Appendix F – Road Drawings 37
Appendix G – Security 38
Appendix H – Impact Assessment of the Diversion of Site Runoff to Melvin Bay on the FLow and Water Level Regimes of Meliadine Lake 39
Appendix I – Supplement Information Guideline (SIG) 40
Appendix J – NPC Conformity Determinations 41

LIST OF TABLES

Table 1-1: Project Definition 3
Table 1-2: Permits and Licenses for the Meliadine Mine 6
Table 1-3: Previous Conformity Determinations 7
Table 2-1: Consumptive Flows 16
Table 2-2: List of Infrastructure 18
Table 2-3: Comparison between Meliadine 2015 (AEM 2015), 2019 (SLI 2019) and 2020 (Appendix G) ICRP cost estimates. 21
Table 2-4: Comparison Between Alternatives to Manage CP1 Water 27

LIST OF FIGURES

Figure 1-1: Approved General Mine Site Layout 2
Figure 2-1: Laydown Area and WRSF3 17

SECTION 1. INTRODUCTION

Agnico Eagle Mines Limited (Agnico Eagle) is operating the Meliadine Gold Project (the Mine), located approximately 25 kilometres (km) north of Rankin Inlet, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. The mine plan is approved by NIRB to 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 (Figure 1-1).

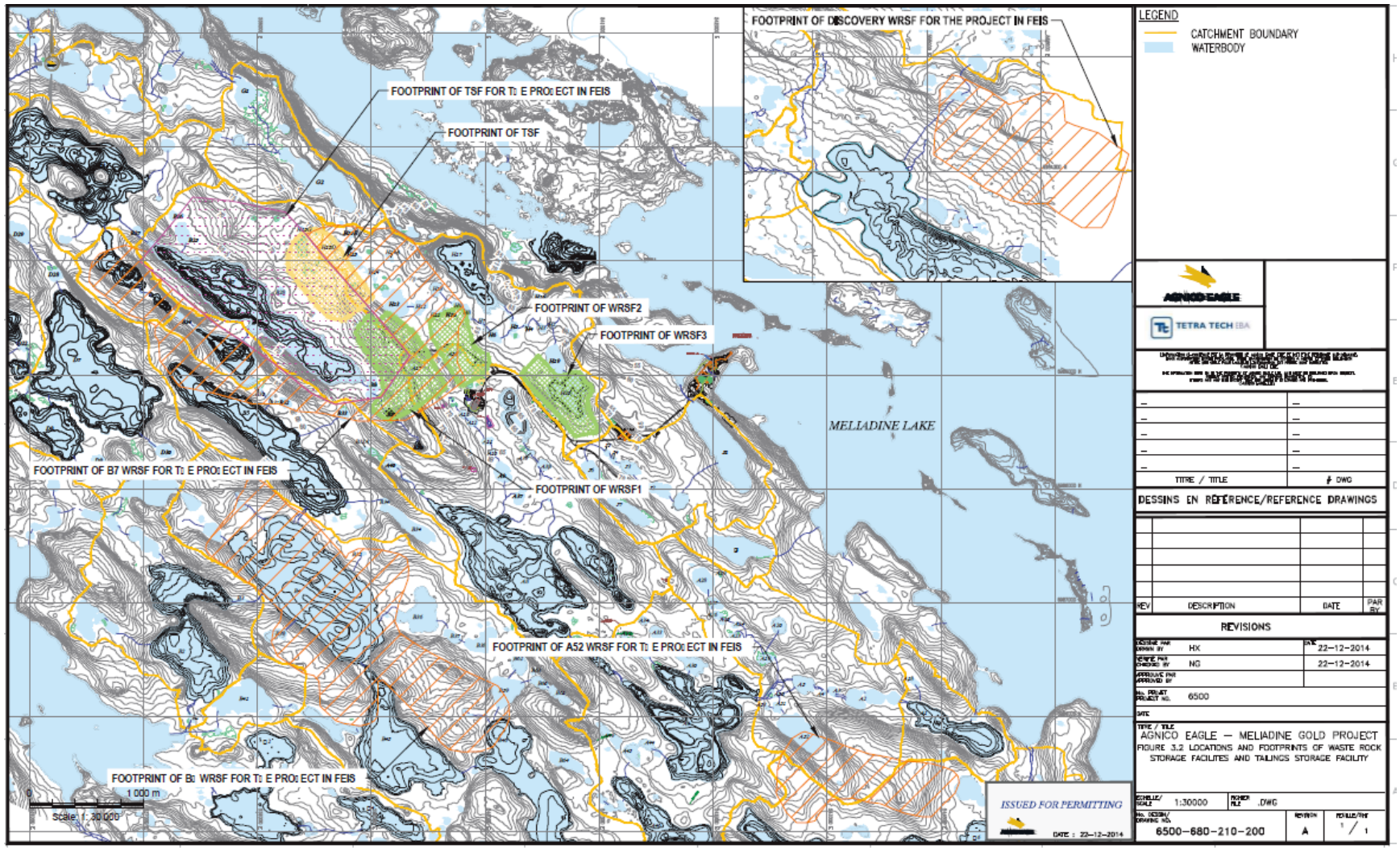
On October 10, 2014, the Nunavut Impact Review Board (NIRB) provided the Minister with the Final Hearing Report and recommended Terms and Conditions for the Meliadine Project, the Minister accepted the NIRB's recommendation on January 27, 2015 and Project Certificate No. 006 was issued on February 26, 2015. On May 19, 2016, the Minister approved the Type A Water Licence 2AM-MEL1631 to begin construction and operation of the Meliadine Mine. Since the Project Certificate was issued, the Meliadine Mine has been subject to two reconsiderations by NIRB. On February 26, 2019 the NIRB provided a positive decision to amend the Project Certificate to include discharge of saline effluent to the marine environment via diffuser at Itivia Harbour and to convey saline effluent along the all-weather access road to Itivia Harbour (i.e., Melvin Bay). On April 7, 2020 Agnico Eagle filed a Final Environmental Impact Statement Addendum (FEIS Addendum) to convey the saline effluent via waterline rather than trucks, to accommodate increased volumes. On June 15, 2020, the NIRB determined a reconsideration of the Project Certificate is required before this activity may proceed and the NIRB reconsideration process on the waterline is ongoing.

Agnico Eagle is proposing changes to the approved project activities under Type A Water Licence 2AM-MEL1631. Specifically, Agnico Eagle is seeking approval from the Nunavut Water Board (NWB) to include the following amendments:

- Updated total dissolved solids thresholds to Meliadine Lake;
- Increase annual freshwater consumption;
- Additional laydown area;
- Updated waste management strategy;
- Construction of site access roads; and
- Updated Interim Closure and Reclamation Plan.

Agnico Eagle requests the NWB amend Type A Water Licence 2AM-MEL1631 where appropriate to include the components and associated infrastructure to account for the requested infrastructure and activities.

Figure 1-1: Approved General Mine Site Layout



1.1 Project Definition

Table 1-1 provides a high-level summary of the approved activities in comparison to the changes requested in the Water Licence Amendment Application.

Table 1-1: Project Definition

Description	Approved Activity	Water Licence Amendment Application
Total dissolved solids (TDS) threshold to Meliadine Lake	Discharge criteria from CP1 to Meliadine Lake - MAC TDS EQC in the Water Licence of 1,400 mg/L referenced at Part F, Item 3	Reviewing discharge criteria from Part F Item 3 with the approach outlined in the Phase 3 of the Water Quality Management and Optimization Plan Rev2 for: • the maximum average concentration (MAC) and maximum grab concentration (MGC) for discharge from CP1 (i.e., effluent quality criteria; EQC) for TDS to Meliadine Lake; and • the benchmark TDS concentration to be achieved at the edge of the mixing zone in Meliadine Lake, which would also be consistent with the site-specific water quality objective for longer-term management of the receiving environment of Meliadine Lake
Freshwater consumption	318,000 m^3/year for Operations	741,706 m^3/year for Operations
Laydown area	Currently located on the Industrial Site Pad presented on Figure 2-1	Expansion of laydown area, which is consistent Water Licence Amendment Application remains consistent with general outdoor laydown areas are described in Section 2.5.9 of the 2011 Project Description or within the project disturbance area
Updated waste management strategy	Refer to Figure 1-1 for approved site layout of the WRSFs	An extension of WRSF3 to allow for increased volumes of mining waste from mining the additional deposits already permitted by NIRB but not currently included in the Water Licence
Site access roads	The footprint for areas assessed as part of FEIS (Agnico Eagle 2014) included for Discovery, Pump, Fzone, and Wes-Normeg deposits	Construction of site access roads to these future deposits (already included in NIRB approved Project)
Security	$59,514,717	An additional $7.4 million (further details provided in Section 2.3.6)

1.2 The Proponent

The Meliadine property is owned and managed by Agnico Eagle Mines Limited (NYSE:AEM, TSX:AEM), a Canadian publicly traded mining company listed on the Toronto and New York Stock Exchange, trading symbol AEM, with head offices in Toronto, Ontario.

Agnico Eagle is a long established, Canadian headquartered, gold producer with operations located in Canada, Finland, and Mexico, and exploration and development activities in Canada, Finland, Sweden, Mexico, and the United States. Agnico Eagle is the sole owner of the Mine. In Canada, Agnico Eagle also owns and operates the LaRonde, Goldex, and Meadowbank Complex mines.

A list of officers for the company is provided in Block 22 of the Application Form. A summary of Agnico Eagle is available on-line at: 2019 Annual Financial Information.

1.3 Sustainable Development and the Precautionary Principle

Agnico Eagle is committed to creating value for their shareholders by operating in a safe, socially, and environmentally responsible manner, while contributing to the prosperity of our employees, their families, and the communities in which we operate. This is imbedded into the four fundamental values that make up the keystones of Agnico Eagle's Sustainable Development Policy: Operate Safely, Protect the Environment, and treat Employees and Communities with Respect (Agnico Eagle 2015).

In developing the Mine and the approach to groundwater management, Agnico Eagle integrated the development engineering and construction teams with the environmental and social specialists early in the process. Parameters of the Project and assessment were chosen to be as conservative as possible to make sure that all potential adverse impacts were captured.

1.3.1 Application of the Precautionary Principle

As understood by Agnico Eagle, the "precautionary principle" or precautionary approach is as follows: if an action has a suspected risk of causing harm to the public or to the environment, in the absence of scientific consensus, then that action should be considered harmful (Agnico Eagle 2014). The principle implies that there is a social responsibility to protect the public from exposure to harm when scientific investigation has found a plausible risk. These protections can be relaxed only if further scientific findings emerge that provide sound evidence that no harm will result. Agnico Eagle uses adaptive management as part of the precautionary approach. Adaptive management is a part of decision-making processes, including those around environmental effects. Agnico Eagle's approach can be summarized as follows:

- Priority 1 – Collect the scientific data required to allow scientific consensus to be achieved and consult with local stakeholders to incorporate Inuit Qaujimaningit and Inuit Qaujimajatuqangit, Traditional Knowledge and Community Knowledge collected into our data to help reach consensus.
- Priority 2 – Design all facilities and activities with adaptive management in mind. In cases where uncertainty remains, Agnico Eagle has looked for applicable data from similar settings elsewhere so that others' experiences can be brought into consideration. Agnico Eagle has also built in appropriate safety factors in the design of the facility or in the proposed action. In each case, Agnico Eagle has incorporated flexibility so that the activity or design can be actively adapted to accommodate possible future change.
- Priority 3 – Design and implement monitoring programs to address all areas of uncertainty so that data are being generated to a) allow for scientific consensus to be achieved, and b) to allow activities where some uncertainty exists to be adaptively managed in a timely manner.

As a general comment, these proposed amendments to the Water Licence are considered minor and are within the overall scope of the original NPC conformity determinations and environmental assessment and permitted mine.

1.4 Regional Context

The proposed Project is primarily situated on Inuit Owned Lands and administered by the Kivalliq Inuit Association (KivIA; surface rights) on behalf of the Inuit Beneficiaries as designated under the Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada (Nunavut Agreement; GC 1993b).

1.5 Regulatory Regime

The Meliadine Mine is located within the Nunavut Territory and is subject to the regulatory approvals established under the applicable laws and regulations of Canada and of Nunavut.

All current, applicable, and active permits are the sole ownership and responsibility of Agnico Eagle – Meliadine Division. While the existing authorizations will continue in effect for the Meliadine Mine, no other amendments or new permits or authorizations have been identified other than the need for a Water Licence Amendment Application. A list of permits and licenses for the Mine is provided in Table 1-2.

Table 1-2: Permits and Licenses for the Meliadine Mine

Licence Number	Issued By	Details	Issue date	Expiry date
KVPL11D01	KIA	Production Lease	June 30, 2017	June 29, 2027
KVCA07Q08	KIA	Tiriganiaq/Westmeg/Emulsion/Meliadine Quarry Permit	July 19, 2018	September 12, 2021
KVCA11Q01	KIA	AWAR Quarry Permit	April 19, 2018	April 19, 2021
KVRW11F02	KIA	AWAR Land Use Permit	April 19, 2012	June 29, 2027
	KIA	Water Compensation Main Site	February 11, 2016	March 31, 2031
2BB-MEL1424	NWB	Bulk Sampling and exploration drilling-Water Licence	July 31, 2009	July 21, 2024
2AM-MEL1631	NWB	Mining	April 1, 2016	March 31, 2031
16QN071	NIRB	Screening decision (Itivia Quarry)		
Project Certificate No. 006	NIRB	Project Certificate	February 26, 2015	NA
102631	GN-NAD	Land Lease, laydown Itivia		July 1, 2021
L-51809T	GN-CGS	Right-of-Way permit AWAR on Municipal land	June 1, 2017	May 31, 2027
L-51808T	GN-CGS	Right-of-Way Lease Bypass Road km 2-7	June 1, 2017	May 31, 2027
102893	GN-NAD	Right-of-Way Lease Bypass Road km 1-2	July 1, 2017	July 1, 2027
01-600-23	GN	Quarry Permit - Site D	July 1, 2020	July 1, 2021
	GN	Wildlife research permit	October 1, 2020	September 30,2021
55K/16-42-2	Saline Effluent Discharge Pipeline and Diffuser	Meliadine	43644	
S-20/21-1001-NU	Scientific Purpose	Meliadine	June 17,2020	

As set out in Table 1-3, each of the components of this application were included as part of previous conformity determinations and NIRB reviews.

Table 1-3: Previous Conformity Determinations

Current Approved Activity under Water Licence	Proposed Water Licence Amendment Application	Previous NPC Conformity (based on Meliadine Gold Project Description, April 11)	Previous NIRB Reviews of Meliadine Mine
Water Consumption 318,000 m^3/year for Operations	Water Consumption increased to a total of 741,706 m^3/year for Operations (increased water consumption due to increased tonnage from previously approved deposits)	Water Licence Amendment Application remains consistent with Section 2.13.1 of the Project Description, which stated "The estimated rate of water consumption will be based on the use of 200 litres per person per day and make-up water required for the mill. The total will be specified in the draft Environmental Impact Statement."	Water Licence Amendment Application remains consistent with 2014 FEIS - in the 2014 FEIS, the total freshwater needs for the Project was assessed at 2,168,100 m^3/year (Agnico Eagle 2014, Volume 2, Table 2-27). Based on this, the additional freshwater volume requested as part of this application only represents 15% of the total volume assessed in the 2014 FEIS.
Laydown Area	Additional surface laydown and storage space in a centralized location to the portals and open pits is needed to proceed with mining from previously approved deposits	Water Licence Amendment Application remains consistent with project disturbance described in the 2011 Project Description Water Licence Amendment Application	Water Licence Amendment Application remains consistent with 2014 FEIS.
The detailed design report and IFC construction drawings for WRSF3 (Agnico Eagle 2020) were approved by the NWB at the end of March 2020.	Updated waste management strategy (an extension of WRSF3 to allow for increased volumes of mining waste from mining the additional deposits already permitted by NIRB but not currently included in the Water Licence). Waste rock from the open pits and underground mining that will not be used for site development purposes will be transported to the waste rock storage facilities (WRSFs) until the end of mining. Two (2) WRSFs are planned for the Project: WRSF1 and WRSF3. The previous WRSF2 has been removed and the WRSF3 has been extended. Ore stockpile 2 was also extended into the previous WRSF2 footprint. Laydown area to support open pit operation was added on the previous WRSF2 and P-Area Footprint.	Water Licence Amendment Application remains consistent with project disturbance described in the 2011 Project Description	Water Licence Amendment Application remains consistent with 2014 FEIS.

Current Approved Activity under Water Licence	Proposed Water Licence Amendment Application	Previous NPC Conformity (based on Meliadine Gold Project Description, April 11)	Previous NIRB Reviews of Meliadine Mine
Site access roads to support mining	Construction of site access roads to future deposits (Discovery, Pump, Fzone and Wes-Normeg deposits)	Water Licence Amendment Application remains consistent with road access and routes described in the 2011 Project Description and include spur roads from Fzon, Discovery, Wes-Normeg, and Pump deposits.	Water Licence Amendment Application remains consistent with 2014 FEIS. The footprint for areas assessed as part of FEIS (Agnico Eagle 2014) included for Discovery, Pump, Fzone, and Wes-Normeg deposits. The potential for environmental effects from the development and construction activities associated with site access roads (e.g., new crossings, road widening) were assessed in the 2014 FEIS, specifically for hydrology and fish and fish habitat (Agnico Eagle 2014). The potential effects related to navigability, hydraulics, and fish passage and required mitigations were discussed in the Sections 7.3.2 (hydrology) and Section 7.5.5 (fish) (Agnico Eagle 2014). The FEIS concluded that these development and construction activities had no linkage or minor pathways. The development and construction of site access roads described under this amendment are expected to be as described in the environmental assessment; therefore, no added potential for environmental effects are expected.

Current Approved Activity under Water Licence	Proposed Water Licence Amendment Application	Previous NPC Conformity (based on Meliadine Gold Project Description, April 11)	Previous NIRB Reviews of Meliadine Mine
Discharge criteria from CP1 to Meliadine Lake - MAC TDS EQC in the Water Licence of 1,400 mg/L TDS referenced at Part F, Item 3 During 2020 discharge season, up to 3,500 mg/L (MAC) TDS discharge was permitted per emergency amendment issued by NWB April 29, 2020 and approved by the Minister May 12, 2020.	As per Phase 3 of the Water Quality Management and Optimization Plan Rev2 will provide supporting rationale for revising: • the maximum average concentration (MAC) and maximum grab concentration (MGC) for discharge from CP1 (i.e., effluent quality criteria; EQC) for TDS to Meliadine Lake; and • the benchmark TDS concentration to be achieved at the edge of the mixing zone in Meliadine Lake, which would also be consistent with the site-specific water quality objective for longer-term management of the receiving environment of Meliadine Lake	Proposed water license amendment remains consistent with Site Water Management strategy described at Section 2.13 of 2011 Project Description.	Proposed Water Licence Amendment Application remains consistent with 2014 FEIS as it assessed and determined that no significant change to the water quality of the receiving environment would occur. The FEIS considered a higher TDS concentration than currently approved as a MAC (3,500 mg/L) and found that the TDS concentration at the edge of the mixing zone would more than adequately meet the threshold set for TDS. All future discharges will continue to comply with applicable regulatory requirements including the Metal and Diamond Mining Effluent Regulations (MDMER) and the final Water Licence terms and conditions, in accordance with the FEIS.
Current security $59,514,717	Update to Interim Closure and Reclamation Plan to reflect new infrastructure and increase of an additional $7.4 million to account for new infrastructure (further details provided in section 2.3.6)	N/A	N/A

1.6 Consultation

The NWB requires proponents to provide a summary of any consultation meetings, including when the meetings were held, where, and with whom. Proponents are also to provide a summary of the results of consultation meetings including a list of concerns expressed and measures proposed to address concerns.

As part of the 2014 FEIS, community consultation was previously carried out on the Meliadine Mine.

To date, preliminary consultations have been held to inform community members of the Water Licence Amendment Application. The main concerns that were expressed during these preliminary meetings are:

- Community organizations and members did not appreciate not being consulted or given the opportunity to comment on the CP1 Emergency Amendment. They would like to ensure that this type of emergency does not happen again in the future.
- Consultations are required throughout the water licence application process, in person where possible, and community organizations and members want more details as the Water Licence Amendment Application progresses through the NWB process.

Deposit of surface contact water in Meliadine Lake is a topic of concern for some community members, as members carry out traditional activities in Meliadine Lake. To address the above concerns, Agnico Eagle is planning consultations with community organizations and members in September 2020, to provide more information on the details of the water licence amendment, especially around TDS levels, as well as provide more opportunity for feedback on the elements of the amendment application. Agnico Eagle is gathering more information on the environmental effects of the temporary elevated TDS discharges occurring in Meliadine Lake during 2020 discharge season and are reporting on those outcomes to the Working Group, of which KivIA is a member. The results from the 2020 monitoring will be integrated into the revision of the TDS discharge criteria. The outcome of those analysis will be communicated in plain language to the community members during the consultation activities. Since discharge from CP1 started June 5, 2020, Agnico Eagle has shared a weekly update on CP1 discharge progress on our Facebook page, as well as on our website http://aemnunavut.ca/emergency_amendment/. Agnico Eagle filed this Water Licence Amendment Application in August 2020 to avoid the need for an emergency amendment in the future and to allow for sufficient time for the NWB amendment process to complete by May 2021 (i.e., commencement of freshet).

Several meetings were organized with the local leaders (e.g., CIRNAC, KIA, local MLA, NTI) to discuss the objective of amending the long-term TDS criteria in the Water Licence prior to freshet 2021. Table 1-4 provides a summary of those activities, as well as planned future engagements on the Water Licence Amendment Application during September 2020.

Table 1-4: Summary of Consultation on Water Licence Application

Date	Stakeholder	Method	Status
21-Aug	KIA Executive and Lands	Teleconference	Completed
7-Jul	Rankin Inlet - Elders	In person with local staff	Completed
20-Jul	KIA Executive	Teleconference	Completed
22-Jul	Rankin Inlet - Elders	In person with local staff	Completed
27-Jul	Rankin Inlet HTO	In person with local staff & teleconference	Completed
31-Jul	Rankin Inlet CLARC and KIA Lands	In person with local staff & teleconference	Completed
10-Aug	Rankin Inlet Hamlet	In person with local staff & teleconference	Planned
September	Rankin Inlet HTO	In person with local staff & teleconference	Planned
September	Rankin Inlet Hamlet	In person with local staff & teleconference	Planned
September	Rankin Inlet Public	Call-in Radio Show	Planned
September	Rankin Inlet Public	In person with local staff	Planned
September	Rankin Inlet CLARC and KIA Lands	In person with local staff & teleconference	Planned
September	KIA Executive	Teleconference	Planned
September	Rankin Inlet - Women	Focus Group	Planned
September	Rankin Inlet - Youth	Focus Group	Planned
September	Rankin Inlet - Elders	Focus Group	Planned
September	Rankin Inlet - Cabin Owners	Focus Group	Planned

SECTION 2. PROJECT DESCRIPTION AND ALTERNATIVES

This Amendment Application provides supporting rationale for the recommendations as per Phase 3 of the Water Quality Management and Optimization Plan (WQ-MOP Rev2; Golder 2020) for the maximum average concentration (MAC) and maximum grab concentration (MGC) for discharge for TDS from CP1 (i.e., effluent quality criteria; EQC) to Meliadine Lake, and the benchmark TDS concentration to be achieved at the edge of the mixing zone in Meliadine Lake, which would also be consistent with the site-specific water quality objective for longer-term management of the receiving environment of Meliadine Lake. Per Table 1-1, in addition to revising TDS discharge criteria, this Amendment Application proposes increasing the annual freshwater consumption volumes, construction of infrastructure to support ongoing open pit mining such as laydown areas, an updated waste management strategy that will see an extension of WRSF3 to accommodate volume of waste from WRSF2 , and construction of site access roads to support future mining.

2.1 Rationale

Agnico Eagle is filing this Amendment Application with the objective of having the MAC and MGC for discharge for TDS from CP1 (i.e., effluent quality criteria; EQC) to Meliadine Lake amended prior to discharge season 2021.

While the approval of the enclosed application is not required until May 2021, Agnico Eagle is filing the application now to ensure sufficient time for all NWB procedural steps including seeking comments from the public and intervenors.

2.2 Mine Schedule

The proposed amendment activities do not change the Mine schedule. The Mine is currently in operation and is anticipated to be operational and in production through 2027, with closure and post-closure activities continuing until 2037.

2.3 Project Components and Activities

2.3.1 Total Dissolved Solids Thresholds

Agnico Eagle implemented mitigation to the TDS loading in CP1 from the beginning of the construction phase by building several water treatment systems such as evaporators, reverse osmosis (RO), and desalination plants. Segregation of surface and underground water to improve treatment efficiency was reviewed each year to optimize water management practices and reduce concentration at the source.

In 2019, Agnico Eagle identified an issue with potential for annual storage capacity limitations and elevated TDS concentrations in CP1 following an extreme wet climate year. Agnico Eagle completed an investigation of the overall CP1 water quality issue to determine the most appropriate course of action to reduce risk at the site due to excess site water to be managed and to maintain protection of the surrounding environment (particularly Meliadine Lake). Results of this investigation showed that TDS was

the only parameter of concern in water directed to CP1, relative to the discharge limits for regulated CP1 discharge to Meliadine Lake. Several different scenarios were evaluated to manage this situation in 2019 and different adaptive management measures were implemented during last summer to allow discharge of CP1 water in Meliadine Lake, such as improving the water treatment efficiency by increasing RO permeate production and rerouting surface water on site to reduce inflows in CP1.

As per the 2020 Emergency Amendment process, potential new water management strategies required to manage CP1 water efficiently were evaluated. The selected strategy consists of improving segregation of surface contact water with high TDS concentration from CP1 by capturing runoff reporting in CP1 upstream to the pond and use the access road as a temporary structure to hold this inflow. Even with the implementation of those mitigations, forecasted CP1 water TDS concentrations will be above the Licence Limit MAC TDS EQC of 1,400 mg/L (set out at Part F, Item 3 of the Water Licence) and the volume of water in CP1 will be above the Maximum Operating Level. Additional details on the alternative of discharge water above the Water Licence Limit MAC TDS EQC of 1,400 mg/L are provided in section 2.4.

The accumulation of the contact water in CP1 was primarily related to the high volume of precipitation during the 2019 season and the current Water Licence TDS effluent quality discharge criteria. To ensure Agnico Eagle has capacity moving forward and to comply with the operational design criteria of the CP1 dike (DCP1), CP1 is to be drawn down every year prior to freeze-up. This water is discharged to Meliadine Lake via the existing in-lake diffuser or may be added to the volume of water transferred to Melvin Bay (Section 2.4.1). The active annual draw-down of CP1 ensures the site has capacity for the following freshet.

Agnico Eagle considers that the treatment and storage option is not a long-term solution as storage capacity is limited and CP1 water cannot be discharged with the current MAC TDS EQC. Agnico Eagle initiated in late 2019 a study to understand the potential effect of mine effluent TDS loading on the Meliadine Lake, which is presented in the approved Water Quality Management and Optimization Plan (WQ-MOP; Golder 2020). The results of that study showed that the 1,400 mg/L is over conservative and that a higher effluent discharge limit would allow the site to manage CP1 water effectively and without any environmental effect in Meliadine Lake.

In April 2020, Agnico Eagle was approved by the NWB for an emergency amendment to the Type A Water Licence to discharge water from CP1 at a MAC TDS concentration of 3,500 mg/L (for only the 2020 CP1 discharge season) due to the accumulation of contact water in CP1 located at the Mine. All discharge criteria is met under the Metal and Diamond Mining Effluent Regulations (MDMER) and the Water Licence, with the exception of the TDS discharge criteria set out at Part F, Item 3 of the Water Licence. The current MAC TDS EQC in the Water Licence of 1,400 mg/L referenced at Part F, Item 3 is lower than necessary to remain protective of the receiving environment (i.e., required to minimize adverse effects on aquatic ecosystems), and thereby limits the management of waters at site in an appropriate manner.

As part of this amendment, Agnico Eagle requests the revision of the current TDS discharge criteria in the Water Licence of 1,400 mg/L (as a MAC) to be consistent with the outcomes of Phase 3 of the WQ-MOP Rev 2 (Finalize Meliadine Mine Benchmarks), which will be completed in September 2020 with the conclusion of Phase 2 of the WQ-MOP Rev 2 (Conduct Validation Study). Based on the initial monitoring results, MAC TDS concentration of 3,500 mg/L will remain protective of the receiving environment.

2.3.1.1 *Water Balance and Water Quality Forecast*

An update to the water balance and water quality forecast was completed to evaluate long-term TDS concentrations in CP1. This Water Licence amendment consists of mining of the Tiriganiaq gold deposit using a traditional open-pit mining method (Tiriganiaq 1 and 2 pits) and underground mining, as previously approved by NIRB in 2015.

The water management objectives are to minimize potential impacts to the quantity and quality of surface water at the mine site. Water management structures (water retention dikes/berms and diversion channels) will be constructed as needed to contain and manage the contact water from the areas affected by the mine or mining activities. Water management is divided into surface contact water management and saline water management.

An update to the water balance and water quality forecast to evaluate long-term TDS in CP1 was completed for operations from May 2020 to December 2028. The model results are provided in Appendix A and summarized here:

- Under both the average and wet years scenarios, surface contact water on site can be managed within the design discharge rates for the various CPs.
- Under both the average year and wet years scenarios, modelled peak concentrations of the regulated constituents (i.e., TDS, total ammonia, aluminum, arsenic, copper, nickel, lead, and zinc) are expected to be appropriate for discharge to Meliadine Lake (i.e., meet discharge criteria).
- Although flows from each of the contact water sources (e.g., Contaminant Ponds: CP-1, CP-3, CP-4, CP-5, CP-6, and CP-7; P-Area Ponds (2020 only); Open Pits: Tiri-1 and Tiri-2; and influent and effluent from Effluent Water Treatment Plant (EWTP) are sensitive to TDS concentrations in the runoff, any variability appears to be generally attenuated by the volume in CP1.

2.3.1.2 *Water Quality Management and Optimization Plan*

The Water Licence Amendment Application provides an updated version of the WQ-MOP (Rev 3) that was originally generated as part of the Emergency Amendment for effluent discharges associated with the Mine. The objective of the WQ-MOP is to formalize a procedure for management of effluent discharges that follows a systematic and science-based framework for determining acceptable effluent quality conditions. The plan considers the operational discharge of water to Meliadine Lake via the existing in-lake diffuser.

On 2 June 2020, the WQ-MOP Rev2 (Golder 2020) was submitted to the NWB as a requirement under NWBs Reason for Decision (NWB 2020) to approve effluent discharges associated with the Meliadine Mine. The objective of the WQ-MOP was to formalize a procedure for management of effluent discharges that follows a systematic and science-based framework for determining acceptable effluent quality conditions. Within the WQ-MOP Rev2, a three-phased approach was developed that included Phase 1 - developing interim discharge and edge of mixing zone targets for total dissolved solids (TDS) which is now complete; Phase 2 - designing and completing validation studies for the discharge and receiving environment which is ongoing in 2020; and Phase 3 - finalizing the TDS benchmarks based on the outcomes of Phase 1 and Phase 2.

The purpose of this update (Rev 3) to support the Water Licence Amendment Application is to present the findings of the validation monitoring that has been conducted to date under Phase 2 of the WQ-MOP Rev2 and to provide supporting rationale for the recommendations as per Phase 3 of the WQ-MOP Rev2 for:

- the MAC and maximum grab concentration (MGC) for discharge from CP1 to Meliadine Lake (i.e., effluent quality criteria; EQC); and
- the benchmark concentration to be achieved at the edge of the mixing zone in Meliadine Lake, which would also be consistent with the SSWQO for longer-term management of the receiving environment of Meliadine Lake.

This WQ-MOP update also describes the adaptive management thresholds associated with the management of water in CP1 and in the receiving environment (edge of mixing zone in Meliadine Lake) that are proposed for triggering measures that would be implemented to reduce the potential for the targets associated with discharge to Meliadine Lake to be exceeded.

The updated WQ-MOP Rev3 is provided in Appendix B.

2.3.1.3 *Water Management Plan*

An updated Water Management Plan is provided in Appendix C to include revisions to the water and waste management strategy. Refer to Section 2.3.4 for additional information on the waste management strategy.

The major change to water management is that waste rock and overburden originally planned to be stored in WRSF2 will be placed within an increased footprint of the WRSF3. This extension will necessitate the construction of additional water management infrastructure (i.e., Channel 9, Channel 10, CP2, and CP2 thermal protection berm). The previous designated footprint for WRSF2 will be used for further expansion of the ore stockpile and construction of infrastructure to support open pit mining operations.

The design of these infrastructures (i.e., Channel 9, Channel 10, CP2, and CP2 thermal protection berm) has been developed at a prefeasibility level and is presented in the Water Management Plan (Appendix C.)

2.3.2 Freshwater Consumption

Due to increased tonnage, the Mill requires higher freshwater consumption than originally planned. The current Water Licence annual consumption is 318,000 m^3/year for Operations.

Table 2-1 provides the updated freshwater consumption needs. Agnico Eagle is requesting an increase to a total of 741,706 m^3/year for Operations of freshwater consumption.

In the FEIS, the total freshwater needs for the Project was assessed at 2,168,100 m^3/year (Agnico Eagle 2014, Volume 2, Table 2-27). Based on this, the additional freshwater volume requested as part of this application only represents 15% of the total volume assessed in the 2014 FEIS.

Table 2-1: Consumptive Flows

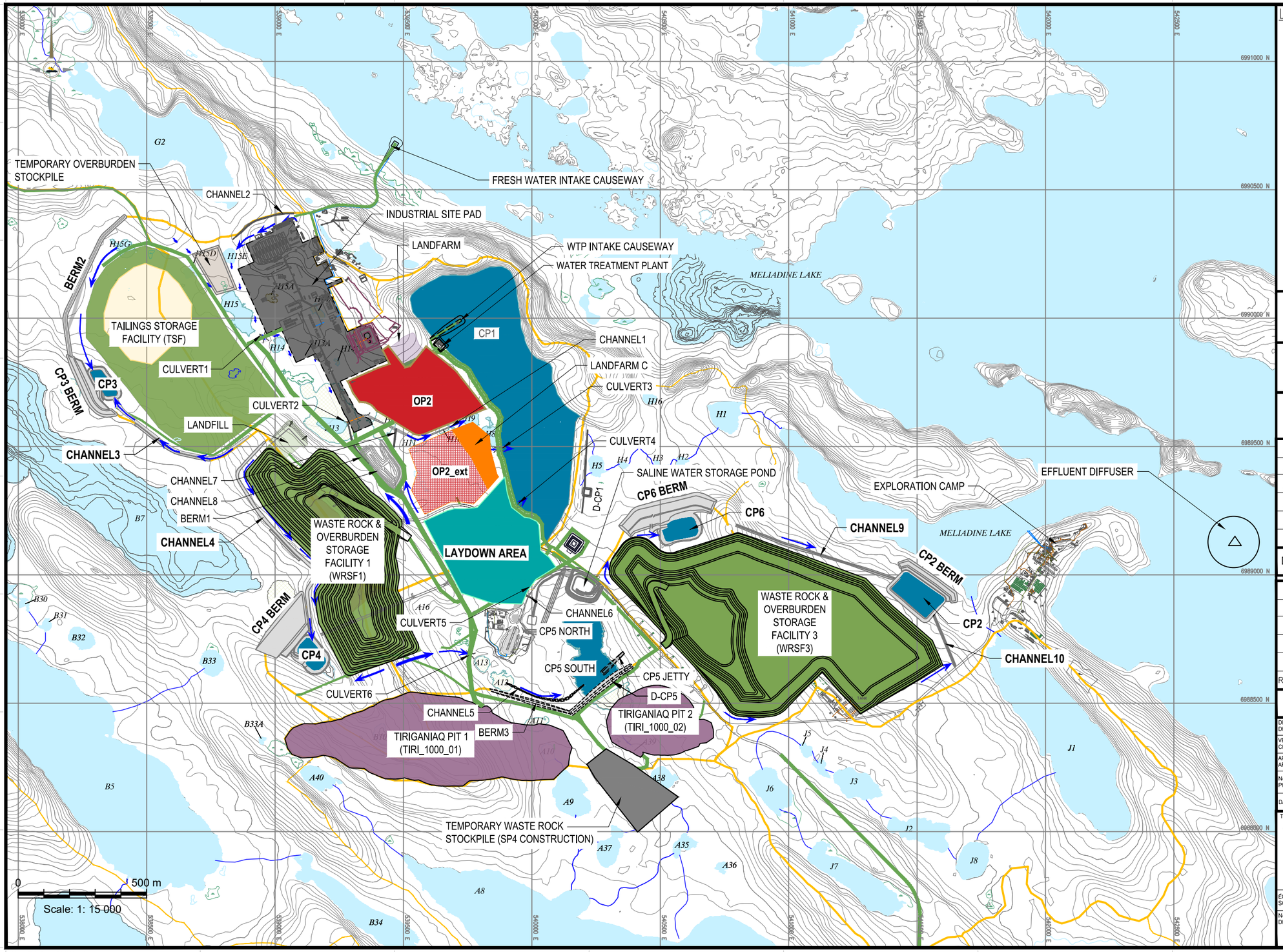
Item	Flow Rate	m^3 per year
Camp Use	200 L/Day/Person People = **680 e**a LOM	50,000
Truck Shop – Wash Bay Consumptions (New 2020 and Dyno)	1.1 cubic m^3/d	9,636
Paste Plant Usage	0.144 m^3 per tonne of paste 2000 TPD	105,120
Mill Fresh Water use	6000 TPD @ 0.194 m^3 per tonne	424,860
Drilling Water, per pit	Per Drill per day = 2 m^3	1,460
Dust Control	Use ponded water on surface, but if Fresh Water 106 days * 45% of no overcast = 53 days at 120,000 gal = 6.3 M gallons	24,168
Emulsion Plant	7M TPY pits at 0.35 kg of emulsion/tonne using 0.17 6.4M Kg from UG at 0.17	420 1,100
Underground consumptive flows Wash Bay	180 m^3/month	2,200
	Contingency (20%)	123,618
	Total	**741,706**

2.3.3 Laydown Area

With the start of operations, the mine recognized the requirement for additional surface laydown and storage space in a centralized location to the portals and open pits. The footprint of this facility was developed so that the northern half of this footprint will provide additional ore storage capacity, while the southern portion will accommodate an additional laydown area to support open pit operations, in addition to providing space for a permanent staging area for the aggregate crusher and stockpiles (Figure 2-1). The laydown area is proposed to be used for the future expansion of the Ore Stockpile 2 and construction of infrastructure to support ongoing open pit mining operations.

NO. DESSIN
DRAWING NO.

FORMAT ANSI B–11x17



LEGEND

- CATCHMENT BOUNDARY
- SERVICE ROAD
- HAUL ROAD
- WATERBODY
- WATER COLLECTION POND
- DRAINED POND AREA
- OPEN PIT
- OVERBURDEN
- WASTE ROCK
- ORE
- TAILINGS
- INDUSTRIAL SITE PAD
- CONTACT WATER FLOW DIRECTION

AGNICO EAGLE

TETRA TECH

TITRE / TITLE | # DWG

DESSINS EN RÉFÉRENCE/REFERENCE DRAWINGS

REV	DESCRIPTION	DATE	PAR BY

REVISIONS

DESSINÉ PAR / DRAWN BY	DATE
VÉRIFIÉ PAR / CHECKED BY	
APPROUVÉ PAR / APPROVED BY	
No. PROJET / PROJECT NO.	6526
DATE	

TITRE / TITLE

AGNICO EAGLE – MELIADINE GOLD PROJECT
JULY 2020 WATER LICENCE AMENDMENT
FIGURE 2 GENERAL SITE LAYOUT PLANVIEW

ÉCHELLE/SCALE	FICHIER/FILE	REVISION	FEUILLE/SHT
1:15000	.DWG	0	1 / 1

No. DESSIN/DRAWING NO.

AE–CART–ANSI B

C:\Users\hongwei.xia\Desktop\Meliadine Expansion 2020\WRSFs\Production Drawings\Figure 4 IFU.dwg

The list of infrastructure associated with the laydown area including a general description of these infrastructure is provided in Table 2-2.

Further details are provided in the 2020 Mine Waste Management Plan (Appendix D).

Table 2-2: List of Infrastructure

Infrastructure	Description
Garage Area	Small repair bay, earthworks repair bay, open pit garage, equipment parking area, parts storage containers
Warehouse Pad	Container area laydown, oversized material, steel racks, piping
Container Area 1	Material storage, and equipment related to mining
Container Area 2	Material storage, and equipment related to earth works
Ore Staging Area	Ore to be brought to surface and re-handled to OP2 Waste to be brought to surface and re-handled to WRSF's Seasonal Aggregate Staging and Crushing for general consumption Ore Stockpiling for consumption by Mill
Waste Staging Area	Waste to be brought to surface and re-handled to WRSFs
Mobile Crusher Area	Seasonal Aggregate Staging and Crushing for general consumption
Ore Pad 2 Extension	Ore Stockpiling for consumption by Mill
Landfarm C	Increase capacity for handling hydrocarbon

2.3.4 Updated Waste Management Strategy

As part of the updated waste management strategy, Agnico Eagle is proposing the waste rock and overburden originally planned to be placed in WRSF2 will instead be placed within an increased footprint of WRSF3.

The updated waste management strategy focuses on updates to the WRSF3 and associated water management infrastructure. The detailed design report and IFC construction drawings for WRSF3 (Agnico Eagle 2020) were approved by the NWB at the end of March 2020. Following the removal of WRSF2 as stated in Section 2.3.3, the footprint of WRSF3 has been increased. The updated detailed design for WRSF3 and associated water management infrastructure will be carried out once Agnico Eagle obtains the approval of the Water Licence Amendment Application. The detailed design report and construction drawings will be submitted to the NWB for approval prior to construction as per Water Licence Conditions.

WRSF3 is located north of Tiriganiaq Pit 2 and will fully cover former Lake H20 and partially cover former Lake H19. The proposed footprint extension of WRSF3 is approximately 28.6 ha for a total approximate footprint of 51.3 ha. No additional waterbody will be impacted by this modification as shown in Figure 2-1.

WRSF3 will accommodate all waste rock generated from the mining of Tiriganiaq Pit 2 in Years 1 to 3, as well as a proportion of waste rock from the mining of Tiriganiaq Pit 1 in Years 3 to 6 until capacity is reached. The waste rock volumes in the 2020 Mine Waste Management Plan have been updated to reflect the design volumes of WRSF3 (Appendix D).

The runoff from WRSF3 will be collected within Pond CP6 (former Pond H19) and CP2, to be located to the northwest of Lake J1. Two diversion channels (Channel 9 and Channel 10), along the north and east sides of the WRSF3, will be constructed to divert the contact water from WRSF3 to CP2. Maximum water depths for former Lakes H19 and H20 were 1.4 m and 1.6 m, respectively. These two lakes were partially dewatered in the fall of 2019 to begin permafrost aggradation.

Agnico Eagle completed a pre-feasibility design of the WRSF3 and the water management infrastructure in 2020, which is provided in Appendix E.

It should be noted that there has not been any temporary or permanent placement of sludge from the Sewage Treatment Plant (STP) into the previous footprint of WRSF2. Since 2015, the footprint of WRSF2 has been used as a staging area for temporary placement of ore and waste rock. As soon as approval and permits for the amendment applications are received, Agnico Eagle will cease using the previous WRSF2 footprint as a staging area for waste rock and would only be placing ore in the proposed ore stockpile extension north of the new laydown area (refer to figure 2-1).

2.3.5 Site Access Roads

To support future mining, Agnico Eagle is amending the Water Licence to include the construction of site access roads to future deposits, including Discovery, Pump, Fzone, WES-NORMEG. The assessment of these deposits was included in the FEIS (Agnico Eagle 2014) and included in Project Certificate No. 006. In the FEIS, the access road to Discovery was named “Discovery Spur Road” The site access roads will be constructed using waste rock or aggregates from quarry and esker sites, and top-dressed with esker or quarry material. Materials will be obtained from already permitted and leased quarry and esker sites, as well as four new quarry/esker sites. Additional details on material is provided in Appendix D.

Field investigations may be required to finalize sources of borrow material for use in the construction and development of these access roads. As necessary, the proper approvals to undertake these field investigations and to access the borrow material will be obtained.

The following drawings are provided in Appendix F:

- Overall site access road.
- Haul Road from AWAR to Discovery Site showing the boat launch location and typical cross-section, as well as the location of the future water crossings (culverts).
- Widening of the AWAR from Discovery Junction to the Mine Site.
- Typical cross sections and plan view for culverts installations.

The potential for environmental effects from the development and construction activities associated with site access roads (e.g., new crossings, road widening) were assessed in the FEIS, specifically for hydrology and fish and fish habitat (Agnico Eagle 2014). The potential effects related to navigability, hydraulics, and fish passage and required mitigations were discussed in the Sections 7.3.2 (hydrology) and Section 7.5.5 (fish) (Agnico Eagle 2014). The FEIS concluded that these development and construction activities had no

linkage or minor pathways. The development and construction of site access roads described under this amendment are expected to be similar to the same activities described in the environmental assessment; therefore, no added potential for environmental effects are expected.

2.3.6 Security

An update to the Meliadine ICRP is provided in Appendix G. This ICRP, based on the current life of mine, provides increasing levels of detail on the closure and reclamation of individual project components and details for components which are to be progressively reclaimed earlier in the mine life. This update includes a revision to the cost estimate based on the new information to site infrastructure (e.g., waterline), site access roads, and the water and waste management strategy.

An additional $7.4 million has been applied to the security cost estimate to account for the proposed changes to under the Type A Water Licence Amendment Application. Table 2-3 presents the changes between the 2015, 2019, and 2020 ICRP cost estimate.

Table 2-3: Comparison between Meliadine 2015 (AEM 2015), 2019 (SLI 2019) and 2020 (Appendix G) ICRP cost estimates.

Component Group	Cost Estimate ($)					Main Difference Explanations	
	ICRP 2015[1]	ICRP 2019[2]	ICRP 2020	2015 and 2019 difference	2019 and 2020 difference	2015 and 2019	2019 and 2020
Open pit	$2,836,125	$1,704,963	$1,704,963	-$1,131,162	$0		
Tiriganiaq Pit 1	$2,781,689	$1,388,171	$1,388,171	-$1,393,518	$0	Significant cost reduction for items related to pit flooding. - Pump installation and associated piping system, based on cost from AEM similar projects; - Annual cost for the operation of the pump to flood pits, based on cost from AEM similar projects.	No change.
Tiriganiaq Pit 2	$54,436	$316,792	$316,792	$262,356	$0	All cost and capital related to pit flooding were distributed between Pit 1 and Pit 2 based on water volume proportion: 80 % for Pit 1 and 20 % for Pit 2.	No change.
Underground Mine	$969,540	$1,096,384	$1,096,384	$126,844	$0		
Control Access	$602,340	$612,004	$612,004	$9,664	$0	Backfill of Portal #1 and Portal #2 in ICRP 2019 rather than proposed cap bulkhead of ICRP 2015. Removal of TTOG of Portal #1 and concrete in Portal #2 in ICRP 2019. Unit cost for raises capping reduced in ICRP 2019, based on experience and similar northern closure and reclamation projects.	No change.

[1] Note that Agnico Eagle's 2015 cost estimate was used as a basis for comparison as it was prepared in accordance with RECLAIM, but it is acknowledged that Agnico Eagle agreed with CIRNAC and KIA to a global security amount of $49,555,000. An updated RECLAIM estimate was not prepared to support the agreed amount. The current security is in the form of an irrevocable standby letter of credit in the amount of $24,777,500 held by Indigenous and Northern Affairs Canada and an irrevocable standby letter of credit in the amount of $24,777,500 held by Kivalliq Inuit Association, in accordance with the Security Management Agreement dated February 17, 2016.

[2] Note that per the NWB Decision letter of March 11, 2020 approving the Interim Closure and Reclamation Plan dated December 12, 2019, "*the Board notes that even though the updated Financial Security Cost Estimate was included into the Plan, the Board is of understanding that the Cost Estimate will be further discussed with CIRNA and the KivIA, and therefore, will not amend the Security under the current Water Licence at this stage*." As parties considered the 2019 estimate previously during the ICRP review during 2019-2020, the 2019 cost estimate is included in this summary table for context.

Component Group	Cost Estimate ($)					Main Difference Explanations	
	ICRP 2015[1]	ICRP 2019[2]	ICRP 2020	2015 and 2019 difference	2019 and 2020 difference	2015 and 2019	2019 and 2020
Remove Hazardous Materials	$367,200	$434,380	$434,380	$67,180	$0	ICRP 2019 considers the removal and decontamination of stationary (6) and mobile (156) equipment used in underground mining. It has been assumed that all equipment is removed off-site (Barge).	No change.
Tailings Storage Facility – Cover Tailings	$1,489,584	$4,831,700	$4,831,700	$3,342,116	$0	ICRP 2019 considers the closure and reclamation (overburden and rockfill cover) of the entire top surface of the facility, estimated at 15.4 ha rather than about 5 ha in the ICRP 2015.	No change.
Rock Pile	$0	$307,350	$277,350	$307,350	-$30,000	ICRP 2019 considers that the regrading of WRSF 1 will be required since it will be used as a potential borrow area for the capping of the TSF.	In 2020 estimate: No instrumentation planned in WRSF2.
Buildings and Equipment	$18,916,071	$17,915,956	$19,974,815	-$1,000,115	$2,058,859		
Meliadine	$18,916,071	$16,412,878	$18,467,437	-$2,503,193	$2,054,559	Only decontamination of surface mobile equipment has been considered in this group. Demobilization is now in "Mobilization / Demobilization". Landfill reclamation cost has decreased significantly and was estimated based on As-Built Report of the Landfill, assuming that the facility will be covered with a 3.7 m thick waste rock layer. Footprint, height and concrete foundation area of all buildings and facilities have been reviewed based on information provided by AEM.	In 2020 estimate: Addition of new buildings, infrastructures and facilities within the P-area laydown to be dismantled. Extension of the ore pad to be graded. Dismantling of roads to Discovery and other future deposits included.
Itivia Harbor, AWAR & Bypass Road	$0	$1,503,078	$1,507,378	$1,503,078	$4,300	AWAR was not separated from Meliadine site in ICRP 2015. Bypass	In 2020 estimate: Addition of a small

Component Group	Cost Estimate ($)					Main Difference Explanations	
	ICRP 2015[1]	ICRP 2019[2]	ICRP 2020	2015 and 2019 difference	2019 and 2020 difference	2015 and 2019	2019 and 2020
						Road not included in ICRP 2015. Buildings from Itivia Harbour was not considered in ICRP 2015.	laydown area at Itivia Harbor for the treated saline effluent waterline diffuser to be graded.
Chemicals and Contaminated Soil Management	$1,917,862	$1,864,355	$2,359,406	-$53,507	$495,051	Review based on the Hazardous Materials Management Plan and the Landfarm Management Plan.	In 2020 estimate: Includes volume of contaminated soil to be treated and heavily contaminated soil to transport for the new landfarm extension. Additional time for decontamination of the garage area in the P-area laydown is included.
Surface and Groundwater Management	$127,050	$1,446,713	$4,460,458	$1,319,663	$3,013,745	List of items that was added in ICRP 2019: - Backfill and contour of diversion channels; - Removal of diversion berms 1 and 3 (assuming Berm 2 will remain in place); - Removal of the berms of Saline ponds SP1 and SP3; - Removal of Berm-CP3 and Berm-CP4; - Removal of piping on site; - Removal of pumps at CP1, CP5 and CP6; - Removal of effluent diffusers; - Removal of freshwater intake.	In 2020 estimate: Includes the closure requirement for the water management infrastructures related to the extension of the WRSF3: CP2 pond, 2 channels and CP2 diversion berm. Includes the dismantling of the saline effluent discharge into marine environment: waterline (41km), the outfall pipe and the diffuser.

Component Group	Cost Estimate ($)					Main Difference Explanations	
	ICRP 2015[1]	ICRP 2019[2]	ICRP 2020	2015 and 2019 difference	2019 and 2020 difference	2015 and 2019	2019 and 2020
Interim Care and Maintenance	$1,684,380	$5,294,620	$5,294,620	$3,610,240	$0	For a period of 3 years, cost related to environmental monitoring added to Interim Care and Maintenance cost (based on annual cost for closure period in "Maintenance, surveillance, monitoring and inspection"). Temporary Water Treatment Plant Operation for 3 years has been updated and included in Interim Care and Maintenance.	No change.
Subtotal Direct Costs	**$27,940,612**	**$34,462,041**	**$39,999,695**	**$6,521,429**	**$5,537,654**		
Mobilization / Demobilization	$9,687,952	$6,942,680	$6,942,680	-$2,745,272	$0	Three (3) barges will be required for closure: 1 for on-site seacans demobilization and demolition waste and 2 for demobilization of mobile equipment. Demobilization of all underground and surface mobile equipment is included, based on transportation distance from Meliadine site to Itivia Harbour.	No change.
Closure and Post-Closure Monitoring and Maintenance	$879,778	$6,737,523	$6,737,523	$5,857,745	$0	Unit costs for Monitoring and Inspections was updated based on AEM sampling cost list and monitoring program costs. ICRP 2019 considers costs related to Maintenance and Surveillance: Site care-taker, Site vehicle and equipment, accommodation and site maintenance. Post-closure annual monitoring program cost has been added, corresponding to 50 % of the annual monitoring program cost during active closure.	No change.

Component Group	Cost Estimate ($)					Main Difference Explanations	
	ICRP 2015[1]	ICRP 2019[2]	ICRP 2020	2015 and 2019 difference	2019 and 2020 difference	2015 and 2019	2019 and 2020
Engineering (5%)	$1,397,031	$1,723,102	$1,999,985	$326,071	$276,883	Adjusted with direct costs in 2019.	Adjusted with direct costs in 2020.
Project Management (5%)	$1,397,031	$1,723,102	$1,999,985	$326,071	$276,883	Adjusted with direct costs in 2019.	Adjusted with direct costs in 2020.
Health and Safety Plans / Monitoring and QA/QC and Engagement Costs (2%)	$279,406	$689,241	$799,994	$409,835	$110,753	Adjusted with direct costs in 2019. 1% added for engagement, based on similar AEM projects.	Adjusted with direct costs in 2020.
Bonding / Insurance (1%)	$279,406	$344,620	$399,997	$65,214	$55,377	Adjusted with direct costs in 2019.	Adjusted with direct costs in 2020.
Contingency (20%)	$5,588,122	$6,892,408	$7,999,939	$1,304,286	$1,107,531	Adjusted with direct costs in 2019.	Adjusted with direct costs in 2020.
Market Price Factor Adjustment (0%)	$0	$0	$0	$0	$0	No change.	No change.
Subtotal Indirect Costs	**$19,508,726**	**$25,052,676**	**$26,880,103**	**$5,543,951**	**$1,827,426**		
GRAND TOTAL	**$47,449,338**	**$59,514,717**	**$66,879,798**	**$12,065,380**	**$7,365,081**		

2.4 Alternatives

The alternatives are in relation to the management of site water and the potential future opportunity (if it is approved by NIRB) to use the proposed waterline as an option for CP1 water transfer to Melvin Bay.

Agnico Eagle has considered several alternatives to manage CP1 water taking into consideration forecasted TDS values, effect of cryo-concentration during winter time, D-CP1 operation criteria and environment conditions. Table 2-4 presents a list of options that were identified and evaluated.

Agnico Eagle considers that reviewing the TDS threshold is required to fully dewater CP1 based on the 2019-2020 discharge season experience. Taking into account community comments regarding ongoing discharges in Meliadine Lake expressed during the 2020 Emergency Amendment, if NIRB approves the Waterline Proposal, Agnico Eagle may divert a portion of CP1 effluent to Meliadine Lake to the waterline as a long-term mitigation. This mitigation has been added as a future potential adaptive management measure in the WQMOP, contingent on NIRB approval of the waterline, where thresholds are based on water quality monitoring results and water volume stored on site. The strategy would be to maximize diversion of CP1 water into the waterline. More details on this option is presented in the following sub-section.

Table 2-4: Comparison Between Alternatives to Manage CP1 Water

Options	Pros	Cons	Status
Increase allowable effluent TDS criteria for discharge to Meliadine Lake	Allow the successful management of CP1 within an amended TDS limit which remains protective of Meliadine Lake, taking into account any information gathered during the 2020 discharge season.	a) Timeline for the application and approval process with respect to the onset of 2020 freshet b) Cost and time requirement to apply a science-based framework and monitoring program to identify upper TDS threshold, to ensure no adverse environmental impacts c) Challenges in integrating TK/IQ to the scientific basis for determining upper TDS thresholds.	Agnico Eagle is moving forward and requesting the NWB to consider this option for sustainable water management of CP1
Aggradation of brine water in frozen structure	Lower TDS in CP1 at the beginning of the open water season.	a) Under normal CP1 operation, it is expected that all residual water at freeze-up will freeze to bottom over winter. b) Removing water from underneath ice cap may lead to unsafe conditions. c) When frozen brine melts, this would lead to re-introduction of brine to CP1 throughout summer. Thus, expecting to amplify the TDS problem in CP1 at the end of the discharge season.	Agnico Eagle has discarded this option as under normal operation water would not be available during winter time
Upgrade Reverse Osmosis system to treat brine under CP1 ice cap	Reduction of CP1 salinity prior to freshet	a) Under normal CP1 operation, it is expected that all residual water at freeze-up will freeze to bottom over winter. b) Running the RO at CP1 will create additional brine on site. This brine will need to be stored in the Saline Ponds, which have limited capacity until approval is received for the waterline to Melvin Bay c) Performance of the RO may be impacted by cold temperatures d) Removing water from underneath ice cap may lead to unsafe conditions	Agnico Eagle has discarded this option as under normal operation water would not be available during winter time
Ice removal from CP1 (leaving brine)	Delay CP1 reaching maximum capacity	a) Unsafe to operate heavy machinery required for ice removal with brine existing below the ice b) Increases TDS concentration prior to freshet c) Lack of area to place ice	Agnico Eagle has discarded this option for health and safety reasons.
Snow management optimization	Minimize the runoff reporting to CP1 by enhancing snow sublimation and minimizing snow drifting on site		Agnico Eagle has already implemented this option. While it provides some mitigation, it does not permit the required full dewatering of CP1.

Options	Pros	Cons	Status
Use CP1 water as make-up water in Process Plant	a) Reduce volumes discharged to Meliadine Lake b) Reduce freshwater use required in the Process Plant	a) Potential impact to Process Plant processes b) Increased risk of corrosion in Process Plant	Agnico Eagle has already implemented this option. While it provides some mitigation, it does not permit the required full dewatering of CP1
Optimize waste rock deposition	Minimize TDS loading reporting to CP1	Adjustment of mine plan	Agnico Eagle has already implemented this option. While it provides some mitigation, it does not permit the required full dewatering of CP1
Divert CP1 water into the Waterline	a) Allow the successful management of CP1 under a wider range of TDS values. b) Reduction of surface contact water reporting to Meliadine Lake. c) TDS level in CP1 would no longer be a limiting factor to CP1 water management	a) Timing of implementation (requires NIRB approval of waterline and construction of waterline before it can be implemented) b) Susceptibility to greater than average precipitation c) The NIRB reconsideration process and Agnico Eagle's community consultation on the waterline is ongoing	Agnico Eagle is moving forward with this option for sustainable water management of CP1

2.4.1 CP1 Water Diversion to Waterline

Agnico Eagle is proposing adding "CP1 Water Diversion to Waterline" as a future potential adaptive management measure in the WQMOP, contingent on NIRB approval of the waterline. Based on the adaptive management thresholds and triggers to be implemented during water quality and water volume monitoring of the discharge, operating levels ranging from Level 0 (green; normal operating condition) to Level 3 (red; high risk situation) have been developed, including monitoring thresholds that trigger each level, and a list of management strategies and actions for consideration in response to mitigate and/or rectify the condition, if required.

An additional future potential adaptive management strategy includes the use of the waterline (if approved by NIRB) as a supplemental option to divert surface contact water transfer from CP1 to Melvin Bay. This alternative could reduce future CP1 discharges to Meliadine Lake, which is a topic identified by some community members in recent months.

Refer to the WQ-MOP Section 5 – Adaptive Management provided in Appendix B for further details.

2.4.1.1 *Meliadine Lake Flow and Water Level Regimes of Meliadine Lake*

An assessment was completed to evaluate the potential impacts of diverting CP1 discharge away from Meliadine Lake to Melvin Bay, on the flow and water level regimes of Meliadine Lake. The assessment was completed using conservative assumptions and concluded that the diversion will result in a small reduction in overall flows, and negligible effects on the levels of Meliadine Lake. Further details are provided in Appendix H.

2.4.1.2 *Water Quality to Melvin Bay*

While regulation of discharges to the marine environment is outside NWB water licensing jurisdiction and such discharges are regulated by Environment and Climate Change Canada under the MDMER, what follows presents a summary of the conclusions of Agnico Eagle's evaluation of water quality in Melvin Bay resulting from use of the waterline.

To quantify the fate and behaviour of the discharged treated groundwater effluent into Melvin Bay, a three-dimensional hydrodynamic modelling assessment of Melvin Bay was completed. This study determines the dispersion and fate of the waterline discharges to the bay by accounting for realistic environmental conditions characterizing the bay (i.e., its hydrodynamics with water movement via tidal regimes, surface driven circulation via wind stress, and temperature/salinity characterizing the water column) as well as physical attributes of the discharges (e.g., chemistry/density, flow rates). The modelling was also used to verify the proposed location in its effectiveness in discharge dispersion. The main objective of the modelling is to make sure that the planned discharge complies with the applicable regulatory standards and guidelines at the edge of the mixing zone. The preliminary modelling results indicate that effective dispersion of the waterline discharge can be achieved over the planned four months of discharge during open water conditions; the minimum dilution factor is well above the target ratio of

11:1 as used in the previous Melvin Bay Diffuser Design Report (i.e., 2-D dispersion modelling assessment, Tetra Tech April 2020). Taking into account effluent accumulation over time, the minimum dilution factor (corresponding to the maximum concentration) at the edge of the 100 m mixing zone boundary ranges from about 40:1 to 90:1. Furthermore, the preliminary modelling indicates that the discharge is effectively dispersed in Melvin Bay and flushed out of the bay as there are no discernible areas of effluent stagnation or significant accumulation over the discharge period. As a result, the characteristics of the diffuser system and the operating conditions of the discharge (e.g., discharge volume, discharge rates, discharge timing) combined with the hydrodynamic conditions of the bay (primarily tidal regime) results in the efficient flushing of the entire bay.

SECTION 3. REFERENCES

Agnico Eagle. 2014. Final Environmental Impact Statement (FEIS) - Meliadine Gold Project, Nunavut from: ftp://ftp.nirb.ca/02-REVIEWS/ACTIVE%20REVIEWS/11MN034-Agnico Eagle%20MELIADINE/2-REVIEW/09-FINAL%20EIS/FEIS Accessed on November, 2014.

Agnico Eagle. 2015. Meliadine Gold Project – Type A Water Licence Main Application Document. April 2015. Version 1.

Agnico Eagle. 2018. Agnico Eagle. 2018. Meliadine Gold Mine – Final Environmental Impact Statement Addendum, Environmental Assessment of Treated Groundwater Effluent Discharge into Marine Environment, Rankin Inlet. June 2018.

Agnico Eagle. 2020. Waste Rock Storage Facility 3 (WRSF3) Design Report and Drawings 6515-686-163-REP-002. Submitted to Nunavut Water Board March 2020.

CCME (Canadian Council of Ministers of the Environment). 2003. Canadian Environmental Quality Guidelines – Water Quality Guidelines for the Protection of Aquatic Life.

GC. 2019. Metal and Diamond Mining Effluent Regulations. SOR/2002-222. Current to December 3, 2019.

Golder (Golder Associates Ltd.). 2020. Water Quality Management and Optimization Plan, Implementation Plan for Total Dissolved Solids. Ref No. 19132390-751-RPT-Rev2. Dated June 2, 2020.

NWB (Nunavut Water Board). 2020. NWB Water Licence Type “A” No: 2AM-MEL1631 – Request for the Minister’s Consent to Process Amendment No. 1 on an Emergency Basis and Attached Reasons for Decision and Amendment No. 1 for the Minister’s Consideration. File No. 2AM-MEL1631/Emergency Amendment No. 1.

SLI (SNC-Lavalin). 2019. Report 668523-4000-4EER-0001-00. Meliadine Interim Closure and Reclamation Plan 2019.

Tetra Tech. 2020. Meliadine Melvin Bay Diffuser Conceptual Design – Effluent Near Field Modelling, April 2020.

APPENDIX A – WATER BALANCE AND WATER QUALITY FORECAST

(refer to standalone appendix pdf file for document)

APPENDIX B – WATER QUALITY MANAGEMENT AND OPTIMIZATION PLAN

(refer to standalone appendix pdf file for document)

APPENDIX C – WATER MANAGEMENT PLAN

(refer to standalone appendix pdf file for document)

APPENDIX D – MINE WASTE MANAGEMENT PLAN

(refer to standalone appendix pdf file for document)

APPENDIX E – PREFEASIBILITY LEVEL DESIGN WRSF3 & WATER MANAGEMENT INFRASTRUCTURE

(refer to standalone appendix pdf file for document)

APPENDIX F – ROAD DRAWINGS

(refer to standalone appendix pdf file for document)

APPENDIX G – SECURITY

(refer to standalone appendix pdf file for document)

APPENDIX H – IMPACT ASSESSMENT OF THE DIVERSION OF SITE RUNOFF TO MELVIN BAY ON THE FLOW AND WATER LEVEL REGIMES OF MELIADINE LAKE

(refer to standalone appendix pdf file for document)

APPENDIX I – SUPPLEMENT INFORMATION GUIDELINE (SIG)

(refer to standalone appendix pdf file for document)

APPENDIX J – NPC CONFORMITY DETERMINATIONS

(refer to standalone appendix pdf file for document)