September 15th, 2023

Ali Shaikh
Technical Advisor
Nunavut Water Board
P.O. Box 119, Gjoa Haven
Nunavut, X0B 1J0

RE: Meliadine Mine 2022 Annual Report for Water Licence 2AM-MEL1631

Dear Mr. Shaikh,

Agnico Eagle Mines Limited thanks the Nunavut Water Board (NWB) for the opportunity to address comments received for Agnico Eagle Mines Limited's Meliadine Gold Mine 2022 Annual Report.

The following information and comments are intended to address comments outlined in the following letters:

230629 2AM-MEL1631 2022 Annual Report ECCC Comments-IMLE.pdf
230704 2AM-MEL1631 2022 Annual Report CIRNAC Comments-ILAE.pdf
230704 2AM-MEL1631 2022 Annual Report DFO Comments-IMLE.pdf
230707 2AM-MEL1631 2022 Annual Report KIA Comments-IMLE.pdf

Should you have any questions or require further information, please do not hesitate to contact us.

With my best regards,

Sara Savoie | Environment General Supervisor
sara.savoie@agnicoeagle.com | Direct 819.759.3555 x4603212 | Mobile 819.856.9349
Agnico Eagle Mines Limited - 11600, rue Louis-Bisson - Mirabel, Quebec, Canada J7N 1G9
agnicoeagle.com

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MELIADINE

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Environment and Climate Change Canada (ECCC)

ECCC-1: Ammonia and total phosphorous predicted concentrations in CP1

Comment

For the 2021 Annual Report, ECCC commented on the water quality model over-predicting ammonia and total phosphorous levels in water in Containment Pond 1 (CP1) and recommended identifying the source of discrepancy between observed and predicted concentrations, including consideration of validating under ice predictions. The 2022 water quality model results in the 2022 Annual Report still over-estimate ammonia and total phosphorous concentrations. The Proponent proposes that measured concentrations were lower because algal growth reduced these nutrient concentrations and the model concentrations do not include nutrient attenuation. They acknowledge further investigation is required to support the hypothesis. They were not able to validate cryo-concentrated water in 2022 because water in CP1 froze to the bottom due to low water levels.

Recommendations

ECCC's recommendation from last year remains unchanged. When logistically feasible, ECCC recommends review of the modeling for ammonia and total phosphorus in CP1 to identify the source of the discrepancy in observed versus predicted concentrations and that consideration be given to validating under-ice predictions.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (ECCC-1), Agnico Eagle will conduct a study to further explore the cause of the discrepancy and will provide a discussion on this study in the 2023 Annual Report.

ECCC-2: Tailings pore water salinity

Comment

The salinity of pore water in the tailings with respect to the tailings storage facility (TSF) design assumptions is not clear. Section 3.1.9 of the annual report includes both statements that the pore water salinity "has been above the design assumptions for the TSF since initial deposition" and "is below the design assumptions". These statements appear contradictory.

Section 4.1.10 states "freezing point depression due to TDS within the pore water of the tailings is not expected to negatively affect the long-term physical performance of TSF", without speaking to the effect of pore water salinity above design assumptions on chemical performance of the TSF. One of the assumptions to support the tailings not posing acid rock drainage (ARD) risk in section 4.2.4, is that "tailings are being stored in a facility that will freeze back (i.e. re-develop permafrost) and inhibit water movement within a few years post-operations".

Recommendations

ECCC recommends the Proponent clarify what the tailings pore water salinity is in relation to the TSF design assumptions and how this will affect the chemical performance of the facility.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (ECCC-2), starting in 2021, the average porewater salinity was marginally above the design limit and in 2022, the average porewater salinity was slightly below the design limit. Thus far in 2023, the average porewater salinity is below the design limit.

Assessment of the impact of elevated salinity within the porewater on the TSF is ongoing, but the main impact will be freezing point depression, which may alter the thermal performance of the TSF from that which was predicted in design. The laboratory testing conducted to measure the freezing point temperature is only slightly lower (-0.02°C) than what was assumed during the design.

The tailings with the higher porewater salinity were produced early on and therefore are generally at the base of the TSF where any additional freezing point depression occurring will have less of an impact on the thermal performance due to the colder temperatures observed currently and predicted during the design at these depths. Currently, most of the tailings are near the measured freezing point or cooler. Below about 2 m from the tailings surface, the tailings are below zero degrees, but slightly warmer than the depressed freezing point, however, the tailings are continuing to cool as the permafrost aggrades into the TSF.

Given the above, minimal negative impact to the geochemical performance of the TSF is expected at this time.

ECCC-3: Inconsistent wind directions for high Total Suspended Particulate (TSP) events

Comment

Section 3.1.1, Current Year TSP, PM10 and PM2.5, states that the wind directions on March 18 and 24 were 307° and 310° respectively, placing dust monitoring station DF-5 directly downwind of the Containment Pond 2 (CP2) construction area when high concentrations of TSP were sampled. However, Appendix B Table 1 shows average wind directions of 4° and 64° respectively for these dates. It is unclear whether the differences in directions are due to different time durations used for averaging, or whether a different averaging method (e.g., vector vs. scalar) was employed.

Recommendations

ECCC requests that an explanation be provided to resolve the inconsistency in stated wind directions.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (ECCC-3), Agnico Eagle wishes to clarify that the date of February 29th 2023 was erroneously included in Table 1 of Appendix B of *Appendix 25- Air Monitoring Report* of the 2022 Annual Report which shifted the subsequent data set.

The complete and corrected data set was presented in Appendix of the 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 and is consistent with the information provided in section 3.1.1 of *Appendix 25- Air Monitoring Report* of the 2022 Annual Report.

Agnico Eagle confirms that wind directions of 307° and 310° for March 18 and 24 respectively are the correct values.

ECCC-4: Compliance Monitoring

Agnico Eagle Answer

Agnico Eagle thanks ECCC for its Comment 4 on Compliance Monitoring including summaries of May and September inspections as well as confirmation of MDMER compliance throughout 2022 and status of spills reported in 2022.

Kivalliq Inuit Association (KivIA)

KivIA-8: Water Quality in Meliadine Lake

Comment

The AEMP report highlights general increases through the Kivalliq in metals concentrations based on temporal trends in Pipedream Lake (PDL) and Inuggugayualik (INUG) by comparing increases from 2013 to 2022 (Table 3-4). Trends are often more useful than percent increase from an arbitrary start date for evaluating mine-related impacts vs. normal fluctuations. Uranium is used as an example of metals broadly increasing across the region, but Meliadine Lake does not show the same trend. Uranium in INUG decreased 11% over 2021-2022, PDL decreased 3%, while Meliadine increased 19% in the same time frame (site MEL1). Both arsenic and strontium show sharp concentration increases in 2019-2020, which is absent in PDL and INUG. Further, the magnitude of increase over historical data is much greater for Meliadine lake.

Chlorophyll-a concentrations in Meliadine Lake also continue to rise year over year, and while the average Total Phosphorus concentrations have slightly decreased from 2021, several individual samples exceed the AEMP action level of 0.0075 mg/L, as shown in Fig 3-16. Near Field MEL1 concentrations remain significantly higher than at reference areas MEL4 and MEL 5.

Recommendations

1. Once the saline waterline is operational, the Proponent should adopt changes from the WBWQM update submitted to the Nunavut Water Board (Jan 2023) to prioritize discharge of contact water containing higher concentrations of nutrients and metals, such as waste rock runoff, tailings runoff, and camp waste, to Itivia Harbour. Until this time, if feasible, water from the STP, CP3, CP4, and CP5 should be redirected to TIR02 for storage.
2. The Proponent should ensure that the capacity of the planned waterline is sufficient to allow the possibility of eliminating discharge to Meliadine Lake, alleviating mine-related impacts to this culturally sensitive area.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (KivIA-8), the current strategy to manage saline groundwater from the underground mine is to pump it to TIRI02 and store it until the waterline is available and this water can be discharged to Itivia Harbour. As storage capacity is finite, Agnico Eagle is required to mitigate the risk of exhausting saline storage capacity by limiting the input of non-saline water (i.e., water that is not from the underground mine) to TIRI02.

For this reason, the addition of water from the STP, CP3, CP4, CP5, or other surface runoff collection facilities to TIRI02 it not currently feasible, as the annual volumes of water

produced/received by these facilities would rapidly compromise the available volume capacity in TIRI02 for its primary purpose of storing saline groundwater.

The capacity of the approved waterline will be 20,000 m^3/day. Agnico Eagle will minimize discharge of contact water to Meliadine Lake by means of maximizing the available capacity of the waterline for discharge of surface contact water to Itivia Harbour.

KivIA-9: Operational Capacity of the Dual Waterline

Comment

Operational capacity of the dual waterline is assumed to be 70% due to planned or unplanned shutdowns and required maintenance, decreasing the nominal capacity of the waterline to 14,000 m^3 per day. Does this assumption reflect the uptime of other water management-related infrastructure on site, or at other, similar, projects? A 30% decrease in modelled capacity would impact the ability of the Proponent to manage contact water through the waterline with the proposed extension.

Recommendations

The Proponent should clarify the assumptions leading to a 70% uptime of the planned waterline. As the 70% is stated to be conservative, the Proponent should provide a realistic uptime for the planned waterline based on similar infrastructure on site.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (KivIA-9), assumed availability of the SETP-WTC and waterline is based on data collected at other water treatment-related infrastructures on site. At the Effluent Water Treatment Plant (EWTP), an availability of 84% and 87% was observed over the 2021 and 2022 discharge seasons, respectively. The operation of the EWTP is simple and problems rarely occur, with downtimes primarily due to electrical shutdowns and routine maintenance. Whereas the EWTP requires the operation of a single Actiflo unit, the SETP-WTC requires the operation of two Actiflo units in parallel, as well as a breakpoint chlorination process. The operation of the waterline itself adds complexity to the system.

Agnico Eagle will strive to achieve a maximum possible availability of the SETP-WTC and waterline and has assumed 70% availability as a conservative input for modeling. Moreover, Agnico Eagle is considering options to improve flexibility of the water treatment process as a means to maintain a high degree of availability.

KivIA-10: Tailings Storage Facility

Comment

This section (2022 AR; Section 4.4.2) states "*No field trials to determine effective capping thickness to the TSF were undertaken in 2022*"

Recommendations

Does the proponent plan to complete any field trials to determine effective capping thickness to the TSF in 2023 or 2024?

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (KivIA-10), the thermal performance of the capping is meeting expectations currently based on the instrumentation results. No field trials are currently planned as the capping is meeting expectations.

KivIA-11: Acid Rock Drainage

Comment

This section (App. 10; section 4.3.1) states:

1) "*While tailings may be classified as uncertain, they still contain enough carbonate to neutralize the acidity produced until many decades after operations have ended."*
2) "*Furthermore, it is worth noting that the analytical laboratory completed an investigation showing that past carbonate analyses were biased low (section 3), meaning that there is more carbonate than previously shown, which would only extend the delay to consumption of carbonate*."

Recommendations

1) Can the proponent be more specific on the number of years after operations have ended that the carbonate will neutralize the acidity.
2) Can the proponent be more specific on the number of additional years after operations have ended that the additional carbonate will add for neutralizing the acidity.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (KivIA-11), Agnico Eagle would like to clarify that the referenced statements are presented in the context of other factors discussing the low risk for ARD generation from the Tailings Storage Facility (TSF).

Generation of acidic water requires exposure of potentially acid generating material to air and water, sufficient timescales for neutralization potential to be consumed, as well as sufficiently warm temperatures to facilitate sulfide oxidation at meaningful rates. By compacting the placed tailings, sloping the facility to shed water, and allowing permafrost to freeze-back within the facility, infiltration of water and diffusion of oxygen into the facility is inhibited. Following freeze-back, sulfide oxidation rates are expected to be negligible.

While the delay to ARD onset has not been specifically calculated for PAG tailings owing to the small portion of PAG samples identified over the LOM, the delay to ARD onset for similar materials is typically on the scale of decades. Based on the design analysis, the tailings temperatures are expected to fall below -1.8°C starting about 4 years after placement. So far, the measured temperatures seem to align well with the expectations and most of the tailings are already below -1.8°C. Based on the above, the potential for development of localized acidic weathering conditions within the TSF before freeze back is very low.

In the theoretical event that localized masses of the most reactive PAG tailings did develop acidic porewater prior to freeze-back, there is enough carbonate present within the non-PAG tailings to neutralize acidic porewaters along flow paths such that net acidic drainage would not likely occur.

With this context, the statements referenced in Comment KivA-11 discuss a hypothetical scenario which would be applicable for a facility that will not undergo freeze back. In practice, sulfide oxidation is not expected to occur at meaningful rates within the TSF due to several mitigating factors (e.g., limited air and water ingress, co-disposal with non-PAG materials, freezing conditions), and neutralization potential is expected to be sufficient to buffer acidity in the long term.

KivIA-12: Source(s) of water Used for Dust Suppression at the Meliadine site in 2022

Comment

1) It states on page 37 of Appendix 25 that "*over the year, a total application of 8738 m^3 of water was recorded for dust suppression at the Meliadine site.* " However the total amount in Appendix A, Table 1 is 8,609.30 m^3, a difference of 118.70 m^3. Further, in S 3.1.9 it is stated that 6253 m^3 of reclaim water is used for dust suppression, but no withdrawal from other sources for dust suppression is noted in S 3.2.1.
2) The two entries on the m^3 of water used on 6/15/22 in Appendix 25, Appendix A, Table 1 are incomplete.
3) The entry for 8/8/22 in Appendix 25, Appendix A, Table 1 lists water used for dust suppression on the AWAR.
4) The water sources(s) for the water used for dust suppression in 2022 are not listed in the table.
5) It is not clear if the total m^3 of water used for dust suppression in 2022 is included in the annual volume of water (463,484 m^3) withdrawn from Meliadine Lake

Recommendations

Can the proponent provide the following information:

1) The total m^3 of water used for dust suppression in 2022?
2) The correct volumes for the two entries on 6/15/22?
3) If reclaim water is used for dust suppression on the AWAR, runoff is recaptured to the contact water management facilities?
4) The source(s) of the water used for dust suppression in 2022? And,
5) if the total m^3 of water used for dust suppression in 2022 is included in the annual volume of water (463,484 m^3) withdrawn from Meliadine Lake?

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (KivIA-12):

1) Agnico Eagle would like to clarify that section 3.1.9 of the Annual Report presents the volume of reclaim water from Collection Pond 1 (CP1) that was used for dust suppression purposes within the mining footprint area, where runoff is captured by the Contact Water management facilities reporting back to CP1. The total volume of reclaim water used for dust suppression in 2022 was 6,253 m^3.

   In addition, approximately 2,225 m^3 of water from MEL-11 (i.e., fresh water obtained from Meliadine Lake under the NWB Type A Water Licence) was used for dust suppression purposes in 2022. This volume is included in the numbers presented in section 3.1.1 of the Annual Report.

   No other sources of water were used for dust suppression in 2022.

   Please find below a corrected table listing dust suppression water usage in 2022.

2) The 2 entries on June 15th are typos. The corrected values (of 60 m^3 each) are included in the totals indicated in the response to comment 1).

3) Agnico Eagle would like to clarify that the water which was used on August 8th on the AWAR was sourced from MEL-11, and not CP1.

   No reclaim water is used for dust suppression on the AWAR. As mentioned above and in section 3.1.9 of the Annual Report, reclaim water is used for dust suppression in areas within the mining footprint area, where runoff is captured by the Contact Water management facilities reporting back to CP1.

4) As mentioned above, the sources of water used for dust suppression in 2022 are reclaim water from CP1, and freshwater obtained from Meliadine Lake (MEL-11) under the NWB Type A Water Licence.

5) As mentioned in response to comment 1) above, the volume of water sourced from MEL-11 and used for dust suppression is included in section 3.1.1 of the Annual Report and is therefore part of the total 463,484 m^3 withdrawn from Meliadine Lake.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

CIRNAC-1: Permafrost Monitoring

Comment

CIRNAC previously recommended that AEM provide a discussion on the status of permafrost degradation that may be occurring because of AEM's construction and operation activities. To address this request, AEM included Section 4.1.9 in the 2022 Annual Report, which provided the following discussion:

"In general, permafrost aggrades into the fills placed on the natural ground, and Agnico Eagle has not observed permafrost degradation across the industrial pad. Some localized permafrost degradation has been observed within/adjacent to some of the water management structures (downstream collection channel of D-CP1, CP3, CP4, channel 1, channel 3 and access, channel 5, channel 9, and channel 10) as well as the saline water treatment plant. These areas correspond to areas where ice-rich materials are present within the natural ground, where the natural vegetation has been removed, and/or where water is allowed to accumulate. Agnico Eagle monitors these areas and repairs them when required. Additionally, the lessons learned from the performance of older infrastructure are being implemented into new infrastructure to minimize future permafrost degradation.

Further information on the observed localized permafrost degradation (areas of settlement) can be found in the 2022 Annual Geotechnical Inspection Report (Appendix 6)".

From CIRNAC's review of the 2022 Annual Report and the 2022 Geotechnical Report, CIRNAC concurs with the observations and information provided by AEM.

CIRNAC notes that while Section 4.1.9 of the 2022 Annual Report provides general comments on permafrost degradation across the site, there is no detailed discussion of permafrost condition of areas of interest across the site, including areas between critical infrastructure such as dikes, channels, and tailings and waste rock facilities and adjacent to water conveyance features at which permafrost degradation has been noted. Similarly, there needs to be a discussion of permafrost conditions adjacent to the roads (site roads, All Weather Access Road, bypass roads) and borrow areas. This information is important for understanding potential long-term impacts on presently stable infrastructure due to long-term permafrost degradation around, and in the vicinity, of these features (for example, permafrost degradation within water diversion channels as noted in the 2022 Geotechnical Inspection Report).

Further to the comments above, the results of the 2022 Annual Geotechnical Inspection Report also identified concerns regarding the operation and performance of instrumentation being used to record thermal conditions within the subsurface in locations where permafrost is expected to aggregate with time and development of the mine site. Specifically, the horizontal GTC units in WRSF3 and Berm CP6 were reported to be only partially functioning. AEM stated that the equipment supplier had reviewed the instrumentation status and reported that it could not be repaired. It is CIRNAC's opinion that the instrumentation required for thermal monitoring should

be operational throughout the life of mine. Any damaged equipment should be replaced if it cannot be repaired.

Recommendation

CIRNAC recommends that AEM:

a) Monitor thermal conditions at the portions of the site in the vicinity of areas where permafrost degradation has been observed, including areas adjacent to channels and ditches close to existing berms and material storage facilities, to ensure that any permafrost degradation does not impact the long-term stability of these infrastructure elements. This should include the installation of horizontal and/or vertical thermistors in critical areas where degradation has already begun,

b) Comment on the monitoring of thermal conditions at ancillary facilities (e.g., roads, borrow areas) where standing water continues to be observed,

c) Expand the discussion in Section 4.1.9 of the Annual Report to include additional permafrost thermal monitoring and discussions as per items 1 and 2 above, and

d) Replace the horizontal GTC units in WRSF3 and Berm CP6 that were reported to be only partially functioning and any other damaged thermal monitoring instrumentation if it cannot be repaired.

Agnico Eagle Answer

a) As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (CIRNAC-1), Agnico Eagle has installed thermistors within the infrastructure per the designs to monitor the performance. Additional thermistors are planned to be installed as the infrastructure under construction (WRSF1, WRSF3, and TSF) are completed, per the design. The permafrost degradation observed so far has been localized and hasn't negatively impacted surrounding infrastructure. These areas have either been repaired or are planned to be repaired. Agnico Eagle will continue monitoring and will repair areas of degradation that may negatively impact the performance of the structure itself, or surrounding structures if not repaired. No new thermistors are currently planned outside of those specified within the designs.

b) Agnico Eagle thanks CIRNAC for their recommendation and will request the design engineer to comment on areas where no permafrost degradation has been observed along with where it has been in future Annual Geotechnical Reports. Currently, only the areas mentioned within the Annual Geotechnical Report or Annual Report have had observable permafrost degradation, areas not mentioned, have not.

c) See responses above.

d) Additional thermistors will be installed as WRSF3 is completed per the design. Based on discussions with the Design Engineer and Engineer of Record, the current instrumentation is sufficient, and no replacement instrumentation have been requested to date.

CIRNAC-2: Improvements to Annual Report

Comment

The Annual Report is a comprehensive document responding to both NIRB and NWB terms and conditions. Review of this document and its numerous appendices requires extensive time and effort, and CIRNAC would like to see additional improvements to ease the review and understanding of a) items referenced, b) information on site conditions, and c) information on Milling operations. These aspects are expanded on below.

a) Although AEM included references to supporting documents in discussions within the main body of the Annual Report (e.g., Golder 2014; OKC 2022a; 2022b), the report lacks a reference section where the full citation of each document is included, so the reader can verify the document being referred to.

b) AEM's geotechnical report provided photographs of site conditions during annual inspections. While all photographs are labelled, it is often difficult for interested parties to specifically identify the location of the item/area being photographed (e.g., regarding the site photograph of the north side toe of the tailings storage facility and associated channel, it is unclear where this specific location occurs along the north side (east, west or center?). This makes it particularly challenging to assess AEM comments regarding a location condition and potential impacts/statements as the reviewer may not be sure what area they are actually looking at in a photograph.

c) Several activities planned for 2023, as listed in Section 2.2 of the Annual Report, are listed as "pending regulatory approval". These include widening of the AWAR from km 6 to 19.6, construction of the waterlines for discharge to sea, and construction of the haul road pump. It is not clear why regulatory approval to complete these activities is needed, as CIRNAC is of the understanding that such regulatory approvals have already been received.

d) The Meliadine Gold Mine project includes an on-site milling operation to process ore at a rate of 8,500 tonnes per day. Milling operations at Meliadine were initiated in 2019. In the 2022 Annual Report, as noted in previous reviews, there is no discussion regarding mill operations (e.g., days of milling, tons of ore processed, tailings generated, water used, and related activities on cyanide management and consumption and tailings detoxification). This is important with respect to understanding total ore storage volumes on the surface during the year and assessing ore storage management and the potential impacts of ore storage on water quality. CIRNAC is confident that a discussion of the milling operations during the year would provide reviewers and stakeholders with a more fulsome perspective of the Meliadine operations and would be a useful addition to the Annual Report.

e) Appendix 13 provides actual plans and sections of 2021 and 2022 TSF conditions. CIRNAC notes that a single cross-section (A-A generally east-west) is provided for each year. An additional, perpendicular cross-section (north-south) would be helpful to understand the development of the TSF fully.

Furthermore, providing hyperlinks in the pdf to the table of contents and lists of tables and figures, as well as to table and figure references within the text, would lend functionality to the document

making it easier to navigate and scroll through it and would ultimately facilitate the review of the report. This, in turn, would help track information that responds to specific NWB terms and conditions.

Recommendation

CIRNAC recommends that AEM include:

a. A reference section in future Annual Reports providing full citations to documents referenced in the main body of the report,
b. Hyperlinks in the pdf to the table of contents, list of tables and figures and references to tables and figures in the text, and
c. A site plan that clearly indicates the location and view direction of each photograph in future reporting that provides site specific photographs, especially in the Geotechnical Report, and
d. In addition to the section A-A (east-west), a section B-B (north-south) of the tailings facility should be added to Appendix 13;
e. A section in future Annual Reports describing mill operations at the Meliadine site (e.g., days of milling, tons of ore processed, tailings generated, water used, and related activities on cyanide management and consumption and tailings detoxification).

Agnico Eagle Answer

Agnico Eagle thanks CIRNAC for their comment.

a. Agnico Eagle will include a reference section in future Annual Reports, providing full citations to documents referenced in the main body of the report. To clarify, the full citations of the documents were included in footnote in the 2022 Annual Report.
b. Agnico Eagle will assess additional improvements to improve navigation in the main Annual Report document in future submissions.
c. Agnico Eagle will request the design engineer to include a photograph location plan in the 2024 Annual Geotechnical Report.
d. Agnico Eagle believes the cross sections provided comply with the requirements from the Water Licence and that they are sufficient to understand the development of the TSF.
e. Agnico Eagle wishes to clarify that mill operations do not fall under critical infrastructures. Licenced and regulatory mill-related reporting requirements are addressed in the annual report, operational management plans and other sectoral reports submitted to regulators throughout the year.

    - Tons of ore processed are provided in Monthly Monitoring Reports to the NWB.
    - Tailings generated in the year and placed within the TSF are presented in section 4.4.1 of the Annual Report, and in the Mine Waste Management Plan (section 5.1), which is updated and submitted yearly with the Annual Report.
    - Water usage under the Type A NWB Licence is reported in section 3.1.1 of the Annual Report, and in Monthly Monitoring Reports to the NWB.

- As for Cyanide management, Agnico Eagle would like to refer CIRNAC to the Meliadine Cyanide Management Plan, submitted as Appendix 31-4 of the 2022 Annual Report, and to the Summary Audit Reports for Mine Operations and Transportation available publicly on the International Cyanide Management Code (ICMC) website (https://cyanidecode.org/). As presented in Section 10.5 of the 2022 Annual Report, the Meliadine Mine was audited for the first time for the ICMC Certification for both Transportation and Mine Operations protocols in 2022, and Agnico Eagle received confirmation of certification early 2023.

CIRNAC-3: Marine Discharges to Melvin Bay

Comment

Sections 3.1.6 and 7.3.1.24 of the Annual Report noted that 2022 there was no saline effluent discharge to sea at Melvin Bay through MEL-26 at Itivia Harbour.

In the 2022 Annual Report, Section 3.2.2.2 describing the water balance model setup stated that "*currently, saline water from the underground mine is stored in Tiriganiaq Open Pit 2 (Tiri 02) and as such no actual discharge quantities were applied in the 2022 model. year update. Previous discharges applied to the WBWQM [Water Balance Water Quality Model] include the discharge of saline water from SP4 to Itivia Harbour using trucks. The proposed Waterline (i.e., the installation of an effluent waterline discharging to Itivia Harbour) will deliver treated effluent to Itivia Harbour via a diffuser. This model assumes the waterline will be operational beginning in 2025 with a seasonal discharge from June 20th to September 29th at 20,000 m3/day*."

Section 3.11 of Appendix 31-10 Water Management Plan of the 2022 Annual Report stated, "*Currently due to sufficient forecasted storage capacity until 2026, saline water on site is managed through storage and treatment of marginally saline water. Punctual operations of hauling of saline water treated by the SETP to Melvin Bay are only conducted if necessary. The suspension of continuous hauling operation followed the approval of the waterline to discharge to sea (section 3.3.3) under the Amendment 002 of the NIRB Project Certificate No. 006 issued on March 2nd. The waterline is currently under construction and is expected to be commissioned in 2025, once in operation, the waterline will be used in combination with the SETP-WTC to discharge treated saline water to Melvin Bay*."

When describing the water balance model setup in the 2021 Annual Report, Section 3.2.3 stated that "*Discharge of saline water to Melvin Bay is assumed to continue by trucks for the operation years 2022 and 2023 and to change to waterline discharge in 2024*" and that "*Based on the discharge to sea schedule in the model and considering TIRI02 as a major saline water surface storage with a capacity of 1,616,554 m3, a maximum of 46% of TIRI02 storage capacity will be utilized in future years (2022 - 2027). In 2022, a maximum of 500,000 m3 saline water is expected to be stored in TIRI02, which accounts for 30% of the TIRI02 capacity*."

While there is capacity for temporary storage of saline water in TIRI02 to manage saline water in the short-term, it is not clear from the 2022 Annual Report why the approved discharge of

1,600 m3/day to the marine environment, as planned in the 2021 Annual Report, was stopped completely in 2022.

Recommendation

CIRNAC recommends that AEM provide:

1. Justification for no saline water discharge in 2022 and why no saline water discharge is planned to occur until 2025;
2. Justification for the rescheduling of the waterline construction completion to 2025;
3. Potential consequences of any schedule delays in saline water discharge via the waterline.

Agnico Eagle Answer

Agnico Eagle would like to refer CIRNAC to the 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (CIRNAC-5).

Following the approval of the waterline for discharge to sea, Agnico Eagle made the decision to utilize onsite saline water storage capacity and to suspend the discharge to Melvin Bay via trucking, thereby reducing traffic and potential dust emissions on the All-Weather Access Road (AWAR) until the waterline is commissioned. The available storage capacity in TIRI02 in relation to groundwater inflow rates allowed this optimization to be made. This decision was supported by the magnitude of saline water storage capacity in TIRI02 relative to the discharge volumes that were achieved via trucking in 2020 and 2021.

The remote and northern nature of the Meliadine Gold Mine led to waterline construction constraints, which, in conjunction with permitting delays and caribou migration constraints resulted in the waterline construction schedule to be revised and the commissioning of the waterline being forecasted for 2025.

The main consequence of schedule delays in saline water discharge is the requirement to store water in TIRI02 for an additional year, however, as shown in Figure 14 of Section 3.2.4.4 of the 2022 Annual Report, TIRI02 provides sufficient capacity for saline water storage in order to accommodate for this delay in waterline operation. At the rates of discharge to sea achieved in 2020 and 2021, the impact of operating this discharge through 2023 and 2024 would be negligible on the long-term water balance outlook. Thus, in order to continue to mitigate traffic and dust generation on the AWAR, discharge to sea via trucking remains to be suspended in 2023 and 2024.

AEM will provide updated predicted groundwater inflow rates in the 2023 Annual Report, which will consequently be reflected in the updated WBWQM.

CIRNAC-4: Sludge Disposal in Tiriganiaq Open Pit 2

Comment

Sludge production from the Effluent Water Treatment Plant-Water Treatment Complex (EWTP-WTC) treatment process during 2022 totalled 3,350 m3, which was pumped to Tiriganiaq Open Pit 2.

As noted in Section 3.9.4.3 of Appendix 31-10 Water Management Plan, sludge produced as part of the total suspended solids (TSS) removal process at the WTC is discharged into the saline water storage and is sampled monthly for metal content, hydrocarbons (C10- C50) and organic carbon to determine the potential impact on the receiving saline ponds.

AEM state that they may also explore other alternatives for sludge disposition in future years, such as dewatering using geotextile bags (e.g., Geotubes™) or mechanical dewatering, which could include technology such as filter press, centrifuge, or belt filters. The dewatered sludge could then be disposed of as a solid.

CIRNAC is concerned that the disposal of sludge in the open pit as practiced now has not been properly assessed nor approved.

Recommendation

CIRNAC recommends that AEM provide:

a) Additional details of past studies supporting in-pit sludge disposal,

b) Interpretation of monthly sludge sampling results,

c) Clarify what AEM means by “may also explore other alternatives for sludge disposition in future years”, and provide clear commitments on studies and timelines, and

d) Evidence of approval of its current practice of sludge disposal into the saline water being stored in the Tiriganiaq 2 Open Pit.

Agnico Eagle Answer

Agnico Eagle is operating as per the most recent reviewed and approved Water Management Plan (WMP) and as per Design and As-Built reports for the EWTP-WTC Modifications.

Agnico Eagle refers CIRNAC to the Nunavut Water Board Type A Water Licence No. 2AM-MEL1631 – Amendment No. 2, Reasons for Decision, Including Record of Proceedings (May 2021). During the Water Licence Amendment process, in their final written submissions, ECCC identified concerns and provided recommendations with regards to proposed treatment sludge disposal, and recommended options for sludge disposal should be identified and incorporated into the Water Management Plan for 2022 disposal. In response to ECCC’s final submission, Agnico Eagle confirmed that sludge will not be deposited in CP1 in 2021 and will be placed within

the saline ponds (Agnico Eagle 2AM-MEL1631 Water Licence Amendment Additional Information Technical Comment Responses, March 8, 2021). Agnico Eagle further committed to provide identification of the primary sludge disposal option for 2022 disposal in the Water Management Plan, as well as discussion of alternative options, which may be explored in future years.

As per Part B, Item 13 of the Amended Water Licence, the WMP was updated (V11, August 2021) and submitted to the NWB and section 3.9.4.3 of the WMP was added to discuss current and possible future sludge management options as per the above commitment. The updated WMP, as per the usual review and approval process, was distributed to Parties. Since August 2021, two (2) updates of the WMP were conducted and the updated Plans were submitted to the NIRB and NWB through the 2021 and 2022 Annual Reports as per usual process, for Parties' review. Design and As-built Reports for the Effluent Water Treatment Plant (EWTP-WTC) Modifications submitted to the NWB in March 2021 and October 2021, respectively, also distributed to Parties for review, stated the sludge would be directed to the saline storage ponds.

Agnico Eagle will provide additional details supporting in-pit disposal and interpretation of monthly sludge sampling results in the 2023 annual report.

CIRNAC-5: Saline Water Storage in Tiriganiaq Open Pit 2 (Tiri 02)

Comment

In the 2022 Annual Report, Section 3.2.2.2 describing the water balance model setup stated that:

"The proposed Waterline (i.e., the installation of an effluent waterline discharging to Itivia Harbour) will deliver treated effluent to Itivia Harbour via a diffuser. This model assumes the waterline will be operational beginning in 2025 with a seasonal discharge from June 20th to September 29th at 20,000 m3/day".

Furthermore, it notes that:

"The model assumes the waterline discharge will be sourced as 60% saline water from Tiri 02 and 40% surface contact water from CP1 until the volume of saline water in Tiri 02 is drawn below 25,000 m3. After this, the waterline discharge will be sourced as 100% surface contact water from CP1 to minimize discharge to Meliadine Lake. During this period, saline water from the underground mine will continue to fill Tiriganiaq Open Pit 2 (Tiri 02). If the volume in Tiri 02 reaches 50,000 m3, the source water will revert to 60% saline water and 40% surface contact water until the Tiri 02 drawdown target is met again."

Section 3.11 of Appendix 31-10 Water Management Plan of the 2022 Annual Report states that:

"Currently due to sufficient forecasted storage capacity until 2026, saline water on site is managed through storage and treatment of marginally saline water. Punctual operations of hauling of saline water treated by the SETP to Melvin Bay are only conducted if necessary. The suspension of continuous hauling operation followed the approval of the waterline to discharge to sea (section 3.3.3) under the Amendment 002 of the NIRB Project Certificate No. 006 issued on March 2nd.

The waterline is currently under construction and is expected to be commissioned in 2025. Once in operation, the waterline will be used in combination with the SETP-WTC to discharge treated saline water to Melvin Bay."

When describing the water balance model set up in the 2021 Annual Report, Section 3.2.3 stated that:

"Based on the discharge to sea schedule in the model and considering TIRI02 as a major saline water surface storage with a capacity of 1,616,554 m3, a maximum of 46% of TIRI02 storage capacity will be utilized in future years (2022 - 2027). In 2022, a maximum of 500,000 m3 saline water is expected to be stored in TIRI02, which accounts for 30% of the TIRI02 capacity."

Given the above, it is apparent that AEM has planned for the continuous use of the TIRI02 pit for the storage of saline ground waters.

Recommendation

CIRNAC recommends that AEM:

a) Confirm how long it intends to use the TIRI02 pit for storage of saline groundwater,

b) Provide evidence that the use of the TIRI02 pit, or any other open pits, for more than emergency temporary storage has been reviewed and approved by regulatory authorities.

Agnico Eagle Answer

Agnico Eagle would like to clarify the referenced text from Section 3.2.2.2 of the 2022 Annual Report, "Discharge to Itivia Harbour", outlines the logic used in the model for prioritizing saline versus runoff discharge through the waterline as it pertains to adaptive management of CP1 water. The use of 25,000 m^3 and 50,000 m^3 as lower and upper triggers for ceasing and initiation discharge, respectively, from Tiriganiaq Open Pit 2 (TIRI02), is simply a deadband limit for the model to toggle discharge of saline water as a priority in the waterline. It does not necessarily reflect the operational reality of TIRI02, as once the majority of water from the pit is discharged, mining in the pit is expected to resume.

When forecasting the storage of saline water in TIRI02 in the 2021 Annual Report, one of the key inputs was the utilization of the waterline in 2024 which limited the maximum volume of saline water expected to be stored in the pit to 46% over the life of mine. However, due to the remote and northern nature of the Meliadine Gold Mine led to waterline construction constraints, which, in conjunction with permitting delays and caribou migration constraints resulted in the waterline construction schedule to be revised and the commissioning of the waterline being forecasted for 2025. In addition, Agnico Eagle made the decision to utilize onsite saline water storage capacity and to suspend the discharge to Melvin Bay via trucking, thereby reducing traffic and potential dust emissions on the All-Weather Access Road (AWAR) until the waterline is commissioned. The available storage capacity in TIRI02 in relation to groundwater inflow rates allowed this optimization to be made. This decision was supported by the magnitude of saline water storage capacity in TIRI02 relative to the discharge volumes that were achieved via trucking in 2020 and 2021.

In general, Agnico Eagle anticipates utilizing TIRI02 for storage of saline water until it can be completely emptied via discharge through the waterline.

Agnico Eagle would like to clarify that saline water storage in Tiriganiaq Open Pit 2 was incorporated into Agnico Eagle's following Management Plans since 2021, which were submitted to the NWB and NIRB and distributed to Parties as per the usual review and approval process:

- Groundwater Management Plan V7, August 2021 and subsequent updated versions (V8, 2022 and V9, 2023);
- Water Management Plan V11, August 2021 and subsequent updated versions (V12, 2022 and V13, 2023);
- Adaptive Management Plan V2, May 2022. The latter was updated to comply with T&C 25 of the NIRB Project Certificate 006 Amendment 002, issued on March 2022.

Therefore, Agnico Eagle is operating as per current and approved Management Plans.

CIRNAC-6: Impacts of Effluent Discharge on Phytoplankton in Meliadine Lake

Comment

In the review of the 2021 Annual Report, CIRNAC noted the observation of algal blooms in Meliadine Lake as a clear indication that something was affecting the phytoplankton community in Meliadine Lake. CIRNAC had recommended that AEM conduct additional studies to determine the root cause of the algal blooms and determine whether the impact directly results from effluent discharge to Meliadine Lake.

In their response, AEM maintained that data from the multi-year phytoplankton study conducted annually in August has not shown evidence of "algal blooms" in Meliadine Lake. Cyanobacteria, which are commonly associated with algal blooms related to nutrient enrichment, comprise less than 1% of the phytoplankton biomass in Meliadine Lake. Furthermore, AEM indicated that the results from the 2021 phytoplankton study

demonstrate that effluent is not causing a shift in the phytoplankton community in the nearfield or mid-field areas of Meliadine Lake, consistent with FEIS predictions.

CIRNAC was not satisfied with AEM's response because while AEM confirmed evidence of abundant increases in both the phytoplankton biomass and chlorophyll-a in the east basin of Meliadine Lake, they did not attribute these increases to mining activities.

Pursuant to AEM's response, CIRNAC reiterated its recommendation requesting AEM to conduct additional studies to determine the root cause of the algal blooms in Meliadine Lake and whether the impact is a direct result of effluent and/or sewage discharges to Meliadine Lake.

Some additional analyses were included in the 2022 AEMP report (Appendix 19) examining the effect of high rainfall events on water quality and phytoplankton indicators in Meliadine Lake. The analysis suggests that differences in the phytoplankton community composition among the

different areas of Meliadine Lake and between years may be partly related to changes in water quality associated with high rainfall in the preceding years.

Recommendation

CIRNAC recommends that AEM:

a) Design a study to investigate and identify the root cause of the algal blooms for review with CIRNAC and other interested parties,

b) Based on review and feedback, conduct agreed studies to determine the root cause of the algal blooms, and

c) If the studies indicate effluent and/or sewage discharges are a potential contributor, develop action plans to mitigate impacts to Meliadine Lake.

Agnico Eagle Answer

CIRNAC claims there are algal blooms in Meliadine Lake without referencing the data that they used to draw this conclusion. They also claim that "AEM confirmed evidence of abundant increases in both the phytoplankton biomass and chlorophyll-a in the East Basin of Meliadine Lake". CIRNAC is correct that chlorophyll-a, which is an indirect measure of primary productivity, has increased year-over-year in the East Basin (Figure 5-2), but phytoplankton biomass, which is a direct measure of productivity, has not shown the same yearly increase (Figure 5-3). In 2022, mean phytoplankton biomass was 248 mg/m^3 and the 3rd lowest since 2013. Only 2013 (153 mg/m^3) and 2020 (211 mg/m^3) were lower than 2022. The relatively low biomass in 2020 coincided with the largest volume of water and loadings to Meliadine Lake. If effluent was causing "algal blooms" in the East Basin, we would have expected to see the biggest change in productivity in the August 2020 study given the larger volume of water that was released in June and July 2020.

Nutrient-productivity relationships for dissolved organic carbon, nitrate, and phosphorus were explored in Section 5.5.5. There was no evidence that the concentrations of these key nutrients were strongly positively correlated with phytoplankton biomass or chlorophyll-a (Figure 5-10). The absence of a clear relationship between nutrient concentrations and primary productivity endpoints suggests factors other than nutrients in the effluent are responsible for a) interannual variability in phytoplankton biomass within each area, and b) differences in phytoplankton biomass among the near-field, mid-field, and reference areas.

The mandate of the AEMP is focused on assessing whether mining activities are causing changes to water quality and the health of freshwater communities in Meliadine Lake. Broader concerns about the impact of climate change and increased human activity on water quality, quantity, and the health of freshwater ecosystems near Rankin Inlet are being investigated as part of the One Voice Monitoring Program led by Prairie Scientific in partnership with the KivIA.

CIRNAC-7: Adaptive Management

Comment

The 2022 Annual Report states that “Schedule B, Item 6 of the Amended Water Licence 2AM-MEL1631 will come into effect following the commissioning of the Waterline (approved by the Minister of Northern Affairs on January 31st, 2022).

Operation of the waterline for discharge to Melvin Bay is anticipated to significantly minimize or eliminate discharges to Meliadine Lake throughout the open water season each year. A summary of the Adaptive Management procedures implemented following the commissioning of the Waterline will be available in future annual reports once the Waterline is operational.

More information regarding applicable Adaptive Management strategies can be found in the most up-to-date version of the Adaptive Management Plan (Agnico Eagle, 2022).”

In regard to these statements, CIRNAC notes that:

1. The 2022 Annual Report did not provide the Adaptive Management Plan as referenced above,

2. No details were provided on timelines and actual expected reductions of discharge to Meliadine Lake, and

3. While a summary of procedures implemented following commissioning will be provided, no information was provided as to the “planned” Adaptive Management Procedures expected to be carried out with the commissioning of the waterline.

Recommendation

CIRNAC recommends that AEM provide:

a) The Adaptive Management Plan (Agnico Eagle, 2022),

b) History of discharge to Meliadine Lake to date and details and timelines of expected discharge reductions to Meliadine Lake, and

c) Information on planned Adaptive Management Procedures expected to be carried out with the commissioning of the waterline.

Agnico Eagle Answer

a) Agnico Eagle would like to clarify that the most recent Adaptive Management Plan (V2, May 2022) was submitted to the NIRB in June 2022 as per Term & Condition No. 25 of the NIRB Project Certificate 006 Amendment 002, issued on March 2022. It is also provided in Appendix to this document.
b) Agnico Eagle would like to refer CIRNAC to section 3.1.4 of the 2022 Annual Report and similar section for previous annual reports, where monthly effluent discharge to Meliadine Lake data is presented. Discharge to Meliadine Lake history (2018-2022) is also

summarized in section 2.2.1 of the AEMP Report (Appendix 19 of 2022 Annual Report). As for expected discharge reductions to Meliadine Lake, please refer to Appendix 5 (Water Balance and Water Quality Modeling Tabular Data and Figures) of the 2022 Annual Report, forecasting no discharge to Meliadine Lake would take place from 2025 onward.

c) Agnico Eagle would like to refer CIRNAC to Section 2.1 of the Adaptive Management Plan (Agnico Eagle, 2022) provided in Appendix to the present document, which describes planned adaptive management procedures expected to be carried out with the operation of the waterline.

CIRNAC-8: Aquatic Ecosystem Monitoring Program (AEMP)

Comment

The 2022 AEMP involved water quality monitoring, a phytoplankton community study in Meliadine Lake, and water quality monitoring in three smaller lakes near the mine: Lake B7, Lake D7, and Lake A8. The results are summarized in Section 7.1 and Appendix 19 of the 2022 Annual Report.

The Annual Report notes that monitoring for the AEMP in 2022 was completed according to the approved AEMP Design Plan, and no exceedances of AEMP Action Levels were observed.

However, the emergence of a couple of concerning trends was noted in the AEMP with respect to accumulating levels of arsenic and iron in the snowpack south of the open pits near the shore of Lake A8 and the increasing trend in arsenic concentrations in Lake B7, which are on track to exceed the AEMP Action Level in 2023 should this trend continue.

Recommendation

CIRNAC recommends that AEM identify what, if any actions have been undertaken to assess these trends further and identify actions that could be taken to reduce the levels while they are still below the threshold.

Agnico Eagle Answer

There were increases of arsenic and iron in Lake B7 and Lake A8 between 2021 and 2022. The Tailings Storage Facility is the probable source of metals to Lake B7 and A8.

The concentrations of arsenic and iron in snow samples from SNOCOR4 near Lake A8 are considerably higher than other locations near the mine, including north of the main camp (SNOCOR BOUNDARY), south of the mine near Waste Rock Storage Facility 3 (SNOCOR5), and north of the mine near the emulsion plant (SNOCOR7). Dust from the site is the plausible source of metals in the snow samples at SNOCOR4. Concentrations of arsenic and iron were well below the peak measured in snow samples in April 2020. These results demonstrate that efforts to control off-site migration of dust have been effective at reducing the concentrations of metals in the snowpack.

A Dust Management Working Group was put in place in 2021 involving several departments from the Meliadine Mine to develop and support initiatives for dust management. Agnico Eagle is committed to continuously improve the environmental performance of the TSF and will continue to explore potential additional improvements through the Dust Management Working Group.

Arsenic and iron concentrations measured in surface water samples from Lake A8 and Lake B7 collected in the July sampling events in 2022 and 2023 are provided below along with the AEMP Benchmarks and corresponding Action Levels.

Arsenic and iron concentrations in unfiltered water collected from Lake B7 and Lake A8 in July 2022 and 2023

Month & Year	Total Arsenic (ug/L) AEMP Benchmark = 25 ug/L AEMP Action Level = 18.75 ug/L			Total Iron (ug/L) AEMP Benchmark = 1,060 ug/L AEMP Action Level = 795 ug/L		
Lake B7						
	B7-1	**B7-2**	**B7-3**	**B7-1**	**B7-2**	**B7-3**
July 2022	17.7	12.9	12.2	102	100	96.3
July 2023	15.6	15.6	13.8	78.2	66.6	61.0
Lake A8						
	A8-1	**A8-2**	**A8-3**	**A8-1**	**A8-2**	**A8-3**
July 2022	11.6	11.6	4.83	58.7	54.1	73.1
July 2023	8.83	8.67	4.74	41.9	45.3	59.5

Arsenic concentrations measured in Lake A8 and Lake B7 in July 2023 are in the range of concentrations measured in samples collected last year and below the AEMP Action Level of 18.75 ug/L (75% of the site-specific water quality objective). These results are encouraging and suggest the increase in the concentration of arsenic in Lake A8 and Lake B7 between 2021 and 2022 has stabilized.

Iron concentrations were lower in Lake B7 and Lake A8 in July 2023 compared to the July 2022 sampling event. Compared to the AEMP Action Level, iron concentrations measured in July 2023 are equal to less than 10% of the AEMP Action Level.

Temporal trends will be assessed in more detail in the 2023 AEMP report.

CIRNAC-9: Geotechnical Inspection Program

Comment

As required by the licence, third-party Annual Geotechnical Inspections are undertaken annually. A review of AEM 2021 and 2022 inspection recommendations and implementation plans suggests that some low-priority minor/repetitive recommendations have not been addressed in a timely

manner (or at all) and have no timelines. CIRNAC has the following observation based on the review of the 2022 Geotechnical Inspection Report Recommendations:

1. Repair of the crest subsidence along the seepage collection channel downstream of D-CP1 should be undertaken, not just monitored as suggested by AEM.

2. Sediment within Channel 3 should be removed so as to maintain proper drainage within the structure.

3. Tetra Tech recommended extending the Channel 4 Berm. However, AEM did not address this topic in their responses (Appendix 8 2022 Geotechnical Inspection Report).

4. No clear reason was given by AEM as to why the completion of the CP6 access ramp is being extended out to Q4 of 2023 when it should be done during the snowfree period on site.

5. A legacy issue regarding the management of cover material over debris within the landfill should be appropriately addressed, as this topic has been raised since 2020.

6. A legacy issue with respect to supporting pipes within the Itivia Fuel Storage site should be addressed before the liner is damaged.

7. The fuel storage and generator system at the Exploration Camp should be taken out of service and appropriately decommissioned if the camp is not going to be used in the future.

8. Based on the photograph taken at Culvert 25.8 km (along the AWAR) and previous inspection comments, CIRNAC will like to see the culvert repaired during the 2023 Open Water season.

9. Based on the photograph taken at Culvert 26.8 km (along the AWAR) and previous inspection comments, CIRNAC will like to see the culvert repaired during the 2023 Open Water season.

10. Based on the photograph taken at Bridge M-5 and previous inspection comments, CIRNAC will like to see repairs to gabion baskets undertaken and concerns with major erosion addressed promptly.

Recommendation

CIRNAC recommends that AEM:

a) Provide justification for not completing repetitive recommendations raised during geotechnical inspections, and

b) Provide a timeline for the implementation of the 2022 geotechnical inspection recommendations listed above.

Agnico Eagle Answer

1. Agnico Eagle refers CIRNAC to Appendix 8 (2022 Annual Geotechnical Report Agnico Eagle Responses and Action Table) of the 2022 Annual Report. Agnico Eagle stated,

"AEM started maintenance of the channel in 2022 and will continue the maintenance in 2023. The channel functions in its current state."

2. This was completed during the repair of Channel 3 during the 2023 open water season.
3. CIRNAC is referred to Appendix 8 of the 2022 Annual Report. Agnico Eagle stated, "AEM will continue to monitor the area in question and place the fill if it becomes necessary." The channel generally appears dry for most of the year with minimal water observed during freshet.
4. Agnico Eagle is typically dewatering collection ponds into late September or October due to late season rainfall events. In order to extend the ramp into CP6 the pumping and piping infrastructure needs to be removed from CP6. Removing the pumping and piping infrastructure to facilitate ramp construction may or may not have been viable depending on the amount of water within the pond and or rain site receives. Therefore, AEM committed to completing the ramp extension following the final drawdown in Q4 to minimize the impact on water management activities.
5. The waste within the Landfill has not reached its final elevation yet. Once the waste is at the final elevation, it will be capped with waste rock in accordance with the Landfill Management Plan.
6. Agnico Eagle has re-supported the pipeline supports in 2023.
7. As per Agnico Eagle's follow-up answer to CIRNAC's March 23rd, 2023 inspection (dated August 8th, 2023), and "Exploration Camp Inventory 2023" document reviewed with CIRNAC and provided to CIRNAC on August 3rd, 2023, Agnico Eagle has identified Exploration Camp items that are in use, being assessed for reuse or determined to be disposed of or removed from the site during the annual sealift. The generator building will be dismantled or reused, while the generator fuel tank will be inspected/certified for reuse on site. Timeframe for completion of these actions have been provided to CIRNAC in the aforementioned correspondence.
8. Agnico Eagle clears the culverts every year prior to freshet, per the recommendation in the annual geotechnical inspection.
9. As per the answer to the above point, Agnico Eagle clears the culverts every year prior to freshet, per the recommendation in the annual geotechnical inspection.
10. The gabion has been repaired in 2023. Agnico Eagle would like to clarify that there has been no major erosion observed by Agnico Eagle nor by TetraTech in their Annual Geotechnical Inspection Report (Appendix 6 of the 2022 Annual Report).

Fisheries and Oceans Canada (DFO)

DFO-1: Erosion of CP1 Berm

Comment

Erosion issues were identified in the CP1 Berm and a toe berm was constructed downstream of the CP1 Berm.

Recommendations

AEM to provide details on if the toe berm construction interacted with Fish or Fish Habitat and whether erosion resulted in sediment being mobilized to the aquatic environment downstream of CP1.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (DFO-1), the berm was constructed between the downstream toe of the dike and the downstream water collection ditch. The construction did not interact with fish habitat. Rock fill was used as the construction material and as such minimal sediment was observed coming from the berm. All contact water from the berm is collected within the downstream water collection ditch where it is pumped to CP1.

DFO-2: Culvert

Comment

Some culverts on the AWAR and Rankin Inlet Bypass Road are undersized for flow and more than half of the culverts inspected show signs of erosion. The roads (AWAR and Rankin Inlet Bypass Road) are blocking flow causing ponding of water at identified locations.

The Annual report does not identify fish and fish habitat issues with culverts and flow management and does not provide a plan to address the issues identified. Appendix 7, 2021 Annual Geotechnical Report Agnico Eagle Reponses and Action Table, identifies a few actions that AEM is committed too, but does not address the potential of sediment entering fish habitat nor the impacts to fish passage. AEM also states that additional culverts will be installed during the waterline construction in 2024 (Appendix 8, 2022 Annual Geotechnical Report Agnico Eagle Reponses and Action Table).

Recommendations

Proponent to provide a plan for repair and/or replacement of damaged culverts prioritizing repairs to culverts with potential to affect fish passage and those affecting fish and fish habitat along the roads.

AEM should provide an updated Road Management Plan that includes actions to be taken to avoid contravention of the Fisheries Act by the deposit of sediment into fish habitat and addresses potential fish passage concerns at crossings.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (DFO-2), Agnico Eagle is prioritizing further work (repair/replacement) at the crossing locations containing salmonids (Culvert 11- Rankin Inlet Bypass Road KM 3.5, Culvert 10- AWAR KM 16.5, and Culvert 7-AWAR KM 27.5). Work is planned for summer/fall of 2023 upon reception of the required authorizations. In addition, a new culvert will be installed at KM 8.8 of the AWAR.

The next update of the Road Management Plan will address assessment of potential fish passage for eventual future culvert replacement. Section 7.1 of the Road Management Plan, as well as the Sediment and Erosion Management Plan, addresses sediment control mitigation measures that are implemented.

DFO-3: Location Data of Shipping Vessels

Comment

Project Certificates 004, 006, and 008 require vessels supplying the Meadowbank Complex and Meliadine mines to avoid sensitive marine mammal and seabird habitats such as haul-outs and breeding colonies.

Ongoing outages for location data of ships - AEM stated in 2020, 2021, and 2022 report that “Additional effort will be made in 2022 to ensure Groupe Desgagnés provides accurate track data to Agnico Eagle”. To this day, vessels continue to have AIS issues lasting 12 hours to several days.

Recommendations

Proponent to provide additional details on the “Additional effort” being implemented to ensure accurate vessel tracks, and compliance with setbacks from sensitive habitats. Proponent to retrieve the missing information from other sources of information.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (DFO-3), Agnico Eagle acquires archived AIS data from Vesseltracker, a commercial AIS supplier that aggregates AIS data from satellite and shore-based stations. These data vary in frequency based on distance from shore, location of shore-based stations, and position of satellites. In some cases, AIS position data is available on an hourly or sub-hourly basis, but in other cases, position data can be 12 hours or more between fixes. The frequency of fixes is beyond the control of Agnico

Eagle, as it is often due to a “gap” in satellite availability over the location of the vessel in the Arctic at the time.

Agnico Eagle continues to investigate alternative commercial AIS suppliers regularly; however, Vesseltracker remains the most reliable at this time. Agnico Eagle continues to train vessel captains regularly and remind them of the importance of maintaining sensitive habitat buffers prior to the start of each shipping season.

DFO-4: Marine Mammal Monitoring Program

Comment

Current Marine Mammal Monitoring survey efforts (1 survey per day, lasting 1.5-2 hours) are not sufficient for effective marine mammal monitoring.

Recommendations

Proponent to update their marine mammal monitoring protocol and include increased monitoring efforts. This updated protocol should be developed by a marine mammal expert, be reviewed and approved by DFO and aim at effectively detecting and avoiding marine mammals during shipping.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (DFO-4), the marine mammal monitoring protocol (MMMP) is described in the approved Shipping Management Plan and the Marine Mammal Survey Standard Operating Procedure (SOP). The protocol is for a dedicated MMSO to complete a minimum of one survey per day, however two or three surveys daily is preferred when timing allows, with each marine mammal survey lasting for a minimum of 1.5 hours to not more than two hours to mitigate observer fatigue and eyestrain. The approved MMMP is well implemented; more than one dedicated marine mammal survey per day is frequently conducted during shipping, and survey effort continues to improve each year.

For example, since 2020, survey effort has almost doubled, with approximately 110 survey hours (moving transects) in 2020, 2021, and 2022, compared to 62 survey hours or less in previous years. Agnico Eagle will continue to emphasize the importance of multiple surveys per day.

In addition, crew members are always scanning for marine mammals. If a marine mammal is observed during the voyage outside of the dedicated marine mammal observation period (i.e., off-effort), this is recorded as an incidental sighting, and any mitigation required to avoid marine mammals during shipping is recorded and reported in the annual report.

DFO-5: Aquatic Invasive Species

Comment

Current monitoring plans do not include a monitoring program for aquatic invasive species.

There is a risk of introducing aquatic invasive species through haul contamination from ships coming from Quebec.

Recommendations

Proponent to include a non-Indigenous Species/Aquatic Invasive Species Monitoring Program around zones of higher risk. This monitoring plan should be developed by an expert, be reviewed and approved by DFO and response measure should be added to the shipping management plan.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (DFO-5), Agnico Eagle thanks DFO for their comment and wishes to reiterate its commitment to mitigating risks of introducing aquatic invasive species.

As per its Shipping Management Plan, Agnico Eagle requires the shipping companies contracted to supply the Meliadine Mine though the annual sea-lift operations to comply with the Ballast Water Regulations, which reduces the risk of invasive species being introduced as a result of mine related shipping activities.

Under the Ballast Water Regulations, all vessels are required to have a Ballast Water Management Plan. The Ballast Water Management Plan is written in accordance with the requirements of Regulation B-1 of the International Convention for the Control and Management of Vessels' Ballast Water and Sediments and aims to prevent, minimize and ultimately eliminate the risk of introducing harmful aquatic organisms and pathogens from vessels' ballast water and associated sediments, while protecting vessel's safety. The ballast water treatment systems from the vessels used to supply the Meliadine Mine also comply with the applicable requirements and regulation D-2 for ballast water management.

The Shipping Management Plan was developed in collaboration with third party experts and was reviewed by Parties through the NIRB process. Subsequent updates of the Shipping Management Plan have been submitted to NIRB and have been made available for Parties to review and comment.

Agnico Eagle believes the above-mentioned information addresses the intent of DFO's recommendation and remains available to further discuss potential improvements to its approved Shipping Management Plan with DFO as required.

DFO-6: Underwater Noise

Comment

Underwater noise from shipping vessels has the potential to elicit disturbance effects on marine mammals by reducing their ability to travel, communicate, and find food.

During the 2022 shipping season, 14 vessels served the project. We currently do not know what noise level and characteristic is produced by those shipping vessels and the potential impact on marine mammals.

Recommendations

Proponent to monitor and model their noise footprint using expert support. This model should aim at evaluating the impact of shipping noise on marine mammals present on the shipping route. A Shipping Management Plan should be updated according to the model.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (DFO-6), the FEIS predicted that in some cases, vessel noise may elicit behavioural changes in individual marine mammals that are in close proximity to these vessels. The residual environmental effect of a change in marine mammal behaviour as a result of Project vessel noise was considered to be low in magnitude, and the likelihood of behavioural disturbance from Project-related vessel noise was considered likely, but would be reversible soon after underwater noise effects subsided. Agnico Eagle continues to follow the Shipping Management Plan and the Marine Mammal Management and Monitoring Plan that was developed for the Project to meet commitments made during the Nunavut Impact Review Board (NIRB) hearings related to Marine Shipping.

DFO-7: Appendix on fish and fish habitat

Comment

The Meliadine Mine Project reporting does not include an appendix specific to fish and fish habitat. Such a report is provided by AEM for the Meadowbank complex and allows Fisheries and Oceans Canada to properly monitor compliance with the Fisheries Act.
Recommendations

Proponent to provide an appendix including, but not limited to:

- Report on death of fish;
- Report on Harmful Alteration, Disruption and
- Destruction of fish habitat;
- Report on fish passage issues;
- Fish-out activities;

- Measures implemented to avoid and mitigate impacts
- to fish or fish habitat; and
- Offsetting activities.

Agnico Eagle Answer

As per 2022 Annual Report Answers provided to the NIRB on August 4th, 2023 (DFO-7), Agnico Eagle would like to clarify the referred Appendix 38 of the Meadowbank Complex Annual Report (*Whale Tail 2022 Report o the Implementation if Measures to Avoid and Mitigate Serious Harm to Fish*) is provided in accordance with Condition 3 of the Fisheries Act Authorizations (FAAs) 16-HCAA-00370 and 20-HCAA-00275 for the Whale Tail Mine. There is no FAA issued for the Meliadine Mine; as stated in Section 1 of the Meliadine Annual Report, the Annual Report is intended to address annual reporting requirements under the current authorizations, namely the NWB Water Licences, NIRB Project Certificate, KivIA Permits and Production Lease, and Inuit Impact and Benefit Agreement (IIBA).

Agnico Eagle is committed to fulfilling reporting requirements from its various authorization and proposes to have a meeting with DFO to clarify current reporting requirements related to DFO authorizations.

DFO-8: Road Management Plan

Comment

As noted in Section 6 of the 2022 Annual Monitoring Report, DFO issued a Warning Letter to AEM related to the infilling of Pond J6 that had been previously reported and was observed during the site visit. During the site visit a number of watercourse crossings on the All-Weather Access Road and the Rankin Inlet Bypass road were identified as being likely barriers to fish movement due to perched outlets or constriction/infilling of the channel.

Number 24 of Part D of Water Licence 2AM-MEL1631 states: *24. The Licensee shall, for the purposes of culvert and bridge construction, ensure that all activities remain outside of the natural channel width by the placement of abutments, footings or armouring above the ordinary High-Water Mark so that there is no restriction to the natural channel processes.*

Measures to address the fish passage barriers are being discussed between AEM and DFO, and a plan is required to ensure that the watercourse crossings are in compliance with the *Fisheries Act*.

Recommendations

AEM should provide an updated Road Management Plan that includes actions to be taken to avoid contravention of the Fisheries Act by the deposit of sediment into fish habitat and addresses potential fish passage concerns at crossings.

Agnico Eagle Answer

Agnico Eagle would like to refer DFO to the answer provided to comment DFO-2 above. The next update of the Road Management Plan will address assessment of potential fish passage for eventual future culvert replacement. Section 7.1 of the Road Management Plan, as well as the Sediment and Erosion Management Plan, addresses sediment control mitigation measures that are implemented.

Appendix

AGNICO EAGLE

MELIADINE GOLD MINE

Adaptive Management Plan for Water Management

MAY 2022
VERSION 2

TABLE OF CONTENTS

LIST OF TABLES

DOCUMENT CONTROL

Version	Date	Section	Page	Revision	Author
DRAFT	January 2021	All	All	Developed based on a workshop with KivIA, CIRNAC, and ECCC held on January 21, 2020. Draft version of Adaptive Management Plan	Agnico Eagle Mines Limited
1	February 2021			Updated based on a follow-up workshop with KivIA, CIRNAC, and ECCC held on February 2, 2021. Adaptive Management Plan to complete Commitment 15 with the Nunavut Impact Review Board and Commitment 3 with the Nunavut Water Board Submitted as part of the Saline Effluent Disposal to the Marine Environment Proposal to the NIRB (with copy to the NWB for the public registry)	Agnico Eagle Mines Limited
2	May 2022			Updated as per Term and Condition No 25 of the NIRB Project Certificate 006 Amendment 002, issued on March 2022	Agnico Eagle Mines Limited

ACRONYMS

Agnico Eagle	Agnico Eagle Mines Limited
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
CP	Collection Pond
D-CP1	Dike for Collection Pond 1
ECCC	Environment and Climate Change Canada
EoR	Engineer on Record
FEIS	Final Environmental Impact Statement
GKD	Ghotelnene K'odtineh Dene
GWMP	Groundwater Management Plan
KivIA	Kivalliq Inuit Association
NIRB	Nunavut Impact Review Board
NWB	Nunavut Water Board
MAC	Maximum average concentration
MDMER	Metal and Diamond Mining Effluent Regulations
MGC	Maximum grab concentration
Mine	Meliadine Gold Mine
OMS	Operation, Maintenance, and Surveillance
RP	Responsible Person
SSWQO	Site Specific Water Quality Objectives
TDS	Total Dissolved Solids
WQ-MOP	Meliadine Water Quality Monitoring Program

UNITS

m^3	cubic metre(s)
m^3/day	cubic metre(s) per day

SECTION 1 • INTRODUCTION

Agnico Eagle Mines Ltd. (Agnico Eagle) operates the Meliadine Gold Project (the Mine) located approximately 25 kilometres (km) north of Rankin Inlet (Figure 1), Nunavut, and 80 km southwest of Chesterfield Inlet in the Kivalliq Region of Nunavut. The Mine is subject to the terms and conditions of the Mine Project Certificate (No. 006) Amendment 001 issued on February 26, 2019 and Amendment 002 issue on March 02, 2022 by the Nunavut Impact Review Board (NIRB) in accordance with the Nunavut Land Claims Agreement (NLCA) Article 12.5.12 and the Type A Amended Water Licence No. 2AM-MEL1631 (the Licence) issued by the Nunavut Water Board (NWB) on May 13, 2021.

Agnico Eagle applied for amendments to the Water Licence and to the Project Certificate to incorporate changes required for mine operation. This document has been prepared to complete Commitment 3 for the Type A Water Licence Amendment, Commitment 15, and Terms and Conditions 25 for the Project Certificate amendment:

- Project Certificate Commitment 15
    - A call will be held with interested parties to review the framework of the Adaptive Management Plan. (KivIA, ECCC, CIRNA). The Adaptive Management Plan will include a decision tree specifying the conditions under which surface water will be diverted into the saline effluent waterlines for marine disposal and the volumes that will be diverted under those conditions. The decision tree will be designed such that discharges to Meliadine Lake are minimized.
    - Agnico Eagle will provide an update on the framework of the Adaptive Management Plan
- Project Certificate Terms and Conditions 25
    - Unless specified in the Groundwater Management Plan and/or Adaptive Management Plan, while the dual waterlines are operational, the capacity is 6,000 m^3/day to 12,000 m^3/day of saline water with the remainder (8,000 m^3/day to 14,000 m^3/day) comprised of surface water for a total capacity of 20,000 m^3/day.
    - Agnico Eagle shall minimize or eliminate surface contact water discharges to Meliadine Lake by discharging on-site surface contact water in accordance with the Groundwater Management Plan and/or Adaptive Management Plan.
    - The Adaptive Management Plan must set out the guiding principle, normal operating conditions and adaptive thresholds for management of water for the waterline.
    - Agnico Eagle shall manage the total daily volumes of water it is authorized to discharge via the dual waterlines into Melvin Bay in accordance with the Groundwater Management Plan and/or Adaptive Management Plan.
    - Agnico Eagle will consult KivIA, GKD, ECCC, CIRNA and DFO with respect to the contents of the Plan and any required adaptive management and mitigation measures.
- Water Licence Amendment Commitment 3:

- Agnico Eagle to provide an Adaptive Management Plan which includes: the site-specific water quality objectives for chloride; and a decision tree specifying the conditions under which surface water will be diverted into the saline effluent pipeline for marine disposal.

This document presents a framework for the Adaptive Management Plan (AMP) for the following activities:

- Discharge through the waterline (Section 2.1)
- Development of a site-specific water quality objective (Section 2.2)

This AMP will be effective after the waterline and this plan are approved.

1.1 Guiding Principles

The guiding principles that apply to this AMP include:

1. Water discharges to Meliadine Lake will be minimized:
    a. Supporting documentation will be provided in the annual reports to both NIRB and NWB indicating compliance with this commitment;
2. Water will be discharged to Meliadine Lake only if there is insufficient residual capacity in the waterline system and stored surface contact water volumes are outside of normal operating levels set in place in consideration of Dike for Collection Pond 1 (D-CP1) design;
3. Agnico Eagle will proactively assess the feasibility of all potential adaptive management actions.
4. Design criteria of infrastructure will be respected at all times.
5. Operate treatment plants at stable rates to reduce risk of process upset.
6. Discharge rates throughout the year will be modulated based on the water balance.

The primary objective of the AMP is to document specific management actions and mitigation measures to be taken when specified thresholds are exceeded. Mitigation measures may include special studies, operational changes, revised or new water and waste management systems, new or expanded conveyance systems, structures and/or facilities, or implementing mitigation activities to prevent, stabilize or reverse a change in environmental conditions or to otherwise protect the receiving environment.

The Adaptive Management Plan will be reviewed if deemed required to account for the dynamics of mine construction, operation and policy changes, and to adjust the adaptive management strategy as needed.

SECTION 2 • ADAPTIVE MANAGEMENT PLAN

This section presents a summary of the adaptive management considerations for

- Discharge through the waterline (which considers and evaluates)
    - Discharging of Saline Water to the marine environment
    - Diversion of Surface Contact water to the waterline
    - Discharging of Surface Contact water to the freshwater environment
- Development of a site-specific water quality objective

2.1 Discharge through the Waterline

As described in the application (FEIS Addendum [Agnico Eagle 2020b]), the purpose for the Project Certificate addendum is for a change in conveyance of treated groundwater to Melvin Bay from trucks to a waterline (comprised of two parallel lines). This change in conveyance is required to meet operational requirements and the projected increase in groundwater inflow rates to the underground workings as mining progresses. The priority use of the waterline is for discharge of saline water to the marine environment; the adaptive management aspect is related to diversion of surface contact water from discharge in Meliadine Lake (Figure 2) to discharge in Melvin Bay (Figure 3).

Adaptive management actions will be implemented when site conditions divert from Normal Operating Conditions. For purposes of the waterline aspects of AMP, **Normal Operating Conditions** are defined in Table 1 and summarized as:

- Saline water capacity at site is less than 70% (open-water), 0% pre-freeze up, and <15% pre-freshet.
    - The pre-freeze up period starts no earlier than September 15.
- Under the "Normal" Adaptive Management Level, while the dual waterlines are operational, the capacity is 6,000 to 12,000 m^3/day of saline water with the remainder (8,000 m^3/day to 14,000 m^3/day) comprised of surface contact water, for a total capacity of 20,000 m^3/day.
    - The regular operational window for the waterline is open-water conditions from approximately late June to mid-October (or until consistent sub-zero temperatures are observed).
- Surface contact water capacity at site is less than 81% (open-water), less than 14% pre-freeze up, and less than 22% pre-freshet.
- End-of-pipe concentrations (CP1) for total dissolved solids (TDS) are less than the maximum average concentration as defined in water licence 2AM-MEL1631.
- Before or within 24 hours of any change between "Normal", "Caution" and "At Risk" Adaptive Management Level, Agnico Eagle will notify CIRNAC inspectors and the KivIA in writing of the change.

- Under the "At Risk" Adaptive Management Level, the dual waterline's total capacity of 20,000 m^3/day will be comprised of saline water and/or surface contact water with specific volumes to be determined by Agnico Eagle, consistent with the NIRB decision and revised Project Certificate as approved by the Minister.
- Under the "Caution" Adaptive Management Level, the capacity is 6,000 to 12,000 m^3/day of saline water with the remainder (8,000 m^3/day to 14,000 m^3/day) comprised of surface contact water, for a total capacity of 20,000 m^3/day. This applies from when the dual waterlines become operational each year until July 30. After July 30 until the end of the operating season, under the "Caution" Adaptive Management Level, the capacity is 6,000 to 16,000 m^3/day of saline water with the remainder (4,000 m^3/day to 14,000 m^3/day) comprised of surface contact water, for a total capacity of 20,000 m^3/day.
- When one line is shut down under the "Caution" Adaptive Management Level, the dual waterline's reduced total capacity of 10, 000 m^3/day will be comprised of saline water and/or surface contact water with specific volumes to be determined by Agnico Eagle, consistent with the NIRB decision and revised Project Certificate as approved by the Minister.
- The AMP applies to the project as described in the Water Licence 2AM-MEL1631, amended in 2021. Future Amendments to Water Licence 2AM-MEL1631 or application for new Water Licences a review and a possible revision of the AMP to ensure Agnico Eagle, continues to minimize or eliminate discharges of surface contact water to Meliadine Lake by discharging surface contact water trough the waterlines.

When conditions divert from "Normal", management activities will be implemented as described in Section 2.1.1 and Table 2. The management activities will be applied in the order listed in Table 2.

2.1.1 Decision Tree

This draft AMP includes a decision tree to outline a process to determine when surface contact water would be discharged to Meliadine Lake and under what conditions surface contact water would be diverted to the Waterline (once approved) for discharge to Melvin Bay (Tables 1 and 2).

Water quantity thresholds for saline water management, the waterline, and surface contact water for the Normal Operating Conditions have been defined (Table 1). Definitions have also been provided for when conditions are outside of Normal Conditions and which then trigger management activities (as described in Table 2).

The framework to define conditions and to adaptively manage water will be based upon the following:

1) Saline Water Management
2) Waterline Operation
3) Contact Water Management
4) Site Water Quality

1. Saline Water Management

The primary purpose of the waterline is to allow sustainable management of saline water on site. Therefore, status of the saline water balance must be considered in the Adaptive Management Level classifications. Within Table 1, status of saline water management on site is considered with respect to the occupied capacity of the saline ponds, as well as medium-term (2 year) projection from the Saline Water Balance model. These two considerations as defined in Table 1 are based on adaptive management thresholds as defined in the Groundwater Management Plan (Agnico Eagle 2022).

2. Waterline Operation

In addition to the status of surface contact water in CP1, the ability of the waterline to convey CP1 water to Melvin Bay is considered in the classification of Adaptive Management Levels. The ability of the waterline to convey CP1 water is defined within Table 1 by three levels associated with the degree to which the line is operating (two lines, one line, or zero lines). The operation of the waterline is in consideration of maintenance, repairs or season.

3. Collection Pond 1 (CP1) Operating Levels

CP1 operating level thresholds provided in Table 1 are occupied storage capacities in CP1 converted from water elevation thresholds that are defined within the Operation, Maintenance, and Surveillance (OMS) Manual for D-CP1. These levels were developed by the design engineer (Tetra Tech 2020a) and are controlled by the Responsible Person (RP) and Engineer of Record (EoR) as part of the Agnico Eagle Corporate Governance Structure, and are subject to change at the discretion of the RP and EoR. The thresholds defined in the OMS, and thus included within Table 1, consider three operating periods: a) the open-water season; b) prior to annual freeze-up; and, c) prior to the onset of the annual freshet event. These thresholds are set in in order to minimize risk of impacts and consequences to the D-CP1 dike structure and its future performance.

The Adaptive Management Level classification under the open-water period is determined by the occupied storage capacity at any time during the open-water period. The Adaptive Management Level classification under the pre-freshet period is determined by the occupied storage capacity at the point immediately prior to freshet. The freeze up level Adaptive Management Level classification differs from the open-water and prior to freshet classifications, in that it requires calculation using the water balance.

The ability of the operation to meet the freeze up target, as noted in section 2.1, is dependent on the balance of anticipated precipitation and available discharge rates in relation to the current stored volume at any given time over the open-water season. Therefore, the site water balance will be applied to produce a forecast trendline to determine the minimum freeze up level that can be achieved based on the current stored water, the anticipated precipitation, available discharge capacity, and any other relevant inputs/outputs to CP1. The freeze up Adaptive Management Level at any given time over the open-water season will be determined based on where the water balance forecasts the operation is able to draw CP1 down to by freeze up. Similarly, the water balance forecast trendline will be applied to ensure the guiding principle of stable treatment plant operation can be met throughout the year. For example, if actual volumes begin tracking below the water balance trendline then discharge rates from CP1 will be decreased to allow the trendline to be followed to ensure stable treatment plant operation over the season and into freeze up can be achieved.

4. Site Water Quality

The final discharge location for surface contact water will be determined by capacity of the waterline and quality of the water in CP1. If there is capacity in the waterline, all or a portion of water from CP1 may be directed to the waterline. If there is insufficient capacity in the waterline for all or a portion of water from CP1, all or a portion of CP1 water may be discharged to Meliadine Lake. The determination of discharge to Meliadine Lake will depend on the adaptive management level (i.e., normal, caution, at-risk) and if the water (as measured at MEL-14) meets the discharge criteria stipulated in Water Licence 2AM-MEL1631.

Table 1 Operation Conditions for Saline Water, Waterline, and Contact Water

Category	Condition (Adaptive Management Level) Description	Normal	Caution	At Risk
1. Saline Water[1]	Saline Pond Occupied Capacity open-water	<70%	>70%	>80%
	Saline Pond Occupied Capacity pre-freeze	0%	+5%	+10%
	Saline Pond Occupied Capacity pre-freshet	<15%	+15% (from Normal)	+20% (from Normal)
2. Waterline	Waterline Operation[2]	Both lines operating	One line shutdown	Both lines shutdown[3]
3. Collection Pond 1 (CP1) Operating Level[4]	Occupied storage open-water	<81%	>81%	>94%
	Occupied storage pre-freeze[5]	<14%	>14%	>22%
	Occupied storage pre-freshet	<22%	>22%	>27%
4. CP1 Water Quality	End-of-pipe TDS Concentrations (MEL-14)	Below the MAC	Two consecutive weekly samples equal to or greater than MAC[6]	Three consecutive weekly samples equal to or greater than MAC[5] OR A single exceedance of the MGC (once validated)[6]

MAC = maximum average concentration as defined in Water Licence 2AM-MEL1631 (the average concentration of any four consecutively collected samples taken from the identical sampling location and taken during any given timeframe); MGC = maximum grab concentration

1. Saline Pond Storage Capacity is defined under Table 2 of the Groundwater Management Plan Version 8 dated May 2022 as Saline Pond 1, Saline Pond 4 and Tiriganiaq Pit 2 and revised from time to time.
2. In consideration of maintenance, repairs, and season. The regular operational window for the waterline is open-water conditions from approximately late June to mid October (or until consistent sub-zero temperatures are observed).
3. Seasonal shut-down of both lines is regular operating procedure and would not be categorized as high-risk
4. From the OMS. Levels are controlled by the Responsible Person (RP) and the Engineer of Record (EoR).
5. Applicable throughout the open-water season and determined from water balance as the ability to reach freeze-up operating condition (i.e., percentage storage) by freeze up under available discharge capacity. For instance if the water balance suggests levels can be lowered to only the “Caution” condition by freeze up then the status would be “Caution” and discharge conditions would be shifted accordingly.
6. As per standard practice, a result that exceeds the MAC or MGC will be validated through a repeat analysis or a re-sample.

Table 2 Adaptive Management Response to Maintain Normal Operating Conditions

Adaptive Management Level	Management Activity / Response / Action (Listed in Order of Priority Action)	Water Management Scope			
		1) Saline Water	2) Waterline	3) Surface Contact Water	4) Surface Contact Water Quality
Normal	1. Regular monitoring, inspections, maintenance.	√	√	√	√
	2. Confirm if saline water quantity is within forecast.	√	-	-	-
	3. Confirm if contact water quantity is within forecast.	-	-	√	-
	4. Maintain saline and contact water discharge through waterline as required, unless waterline is not available.	√	√	√	-
	5. If waterline is unavailable, but water capacity in CP1 is within normal, consider recirculating back to CP1.	-	-	√	-
Caution	1. Increased monitoring (e.g., priority analysis to confirm TDS in CP1; increase frequency of sampling in CP1), inspections, maintenance as required.	√	√	√	√
	2. Evaluate saline water quantity forecast.	√	-	-	-
	3. Evaluate contact water quantity forecast.	-	-	√	-
	4. Prioritize saline water for discharge through the waterline.	√	√	√	-
	5. If outside normal waterline operational window, evaluate starting discharge of water to Melvin Bay earlier and below the ice.	√	√	√	-
	6. Evaluate temporary discharge of higher flow rate (of both saline and surface contact water) to Melvin Bay.	-	√	-	-
	7. Utilize remaining capacity of waterline (if available) to maximize discharge of surface contact water to waterline.	-	√	√	-
	8. After maximizing discharge of surface contact water to waterline (if available), evaluate CP1 water quality and operate discharge to Meliadine Lake within Water License criteria at rate required to reduce water levels in CP1 to normal.[1]	-	-	√	√
At Risk	1. Increased monitoring, inspections, maintenance as required	√	√	√	√
	2. Evaluate saline water quantity forecast	√	-	-	-
	3. Evaluate contact water quantity forecast	-	-	√	-
	4. Prioritize saline water for discharge through the waterline	√	√	-	-
	5. If outside normal waterline operational window, evaluate starting discharge of water to Melvin Bay earlier and below the ice.	√	√	√	-

Adaptive Management Level	Management Activity / Response / Action (Listed in Order of Priority Action)	Water Management Scope			
		1) Saline Water	2) Waterline	3) Surface Contact Water	4) Surface Contact Water Quality
	6. Evaluate temporary discharge of higher flow rate (of both saline and surface contact water) to Melvin Bay.	√	√	√	-
	7. Evaluate option to extend discharge window to Melvin Bay	-	√	-	-
	8. Utilize remaining capacity of waterline to maximize discharge of surface contact water to waterline	-	√	√	-
	9. After maximizing discharge of surface contact water to waterline (if available), evaluate CP1 water quality and operate discharge to Meliadine Lake within Water License criteria at rate required to reduce water levels in CP1 to normal.	-	√	√	√
	10. If CP1 water quality greater than TDS MAC (in three consecutive weekly end-of-pipe samples), stop discharge to Meliadine Lake.	-	-	-	√
	11. Evaluate possibility of temporary storage of surface contact water in open pits and/or saline ponds.	√	-	√	-
	12. If CP1 quantities are still at risk, evaluate requirement for emergency discharge to Meliadine Lake	-	-	√	√

√ = management activity applies to this aspect of water management; - = management activity does not apply to this aspect of water management

1. Discharge to Meliadine Lake under the "Caution" Level may be required. One example is if CP1 needs to be drawn down in preparation for freeze-up and winterization of the waterline has already begun or is completed.

2.1.2 Volume

Models have been developed to predict future annual quantities of saline water (Golder 2020a) and surface contact water (Golder 2020b; SNC 2020) and to be managed. Results of these models are used to support projections and planning of annual quantity of water that could be discharged through the waterline. The Waterline application assessed a range of discharge rates from 6,000 m^3/day and up to 20,000 m^3/day. While the primary purpose of the waterline is for discharge of saline groundwater, a commitment has been made by Agnico Eagle to divert surface contact water through the waterline as a means to reduce discharges to Meliadine Lake.

The annual quantity of surface contact water that could be diverted to the waterline and discharged to Melvin Bay will be based on:

- The quantity of saline water to be managed and discharged
- The capacity in the line
- Projections (i.e., saline and contact water balance forecast) and planning within a given year to progressively manage the site in anticipation of freshet and open-water precipitation events, and to prepare the saline and surface contact ponds for the freeze-up condition

Volumes of surface contact water discharged to Melvin Bay via the waterlines will be limited by compliance with the Metal and Diamond Mining Effluent Regulations (MDMER) requirement that effluent should not be acutely toxic to aquatic life as determined through acute toxicity testing.

The lower bound of surface contact water that can be diverted away from discharge to Meliadine Lake and towards Melvin Bay will be based on the annually updated water balance and water management plans. The lower bound limit is defined as:

- One waterline is operational for a total daily discharge up to 12,000 m^3/day total, and up to 50% of that water comprised of surface contact water for a daily total of 6,000 m^3/day of surface contact water.

An upper bound of surface contact water that can be diverted to Melvin Bay is not currently defined. However, the upper bound of surface contact water, and ultimately the end-of-pipe concentration of TDS will fall within the modelled scenarios of 2,200 mg/L to 39,600 mg/L TDS (Tetra Tech 2020c, 2021).

2.2 Site-Specific Water Quality Objective

Agnico Eagle believes that an SSWQO for chloride is not required at this time based on:

- monitoring data collected for treated discharge from CP1 and in Meliadine Lake associated with the 2020 emergency amendment (as reported in Appendix B of the Meliadine Water Quality Monitoring Program [WQ-MOP; Agnico Eagle 2020c])

- water quality forecasts for the treated discharge from CP1 over the life of the mine based on the bounds of the proposed MAC and MGC effluent quality criteria for TDS and updated modelling completed for Meliadine Lake by Tetra Tech (2020b)
- observed performance of the in-lake diffuser during the comprehensive monitoring associated with the emergency amendment (Agnico Eagle 2020a) in 2020 (Golder 2020c)

This is supported by the strong and consistent relationship between TDS and chloride in treated discharge, and because the broad range of toxicity testing completed as part of the site monitoring between 2017 and 2020 indicated no acute toxicity associated with the discharge.

The monitoring associated with the 2020 emergency amendment as per the WQ-MOP showed that the ionic composition of the TDS in the treated discharge remained consistent over the 2020 discharge period (Golder 2020c). Concentrations of calculated TDS in the treated discharge, ranged from 1,030 mg/L to 2,675 mg/L. The proportion of chloride in the TDS remained consistent during the discharge to Meliadine Lake, contributing 49% of the TDS by mass on average, making it the largest ionic constituent of TDS in the discharge and the dominant anion. The secondary components of TDS comprised sodium, calcium, and sulphate (i.e., average of 19%, 12%, and 11%, respectively). The remaining minor contributors of the TDS comprised magnesium, potassium, bicarbonate, silica, and nitrate.

During the discharge associated with the emergency amendment in 2020, calculated TDS at the edge of the mixing zone ranged from 30 to 115 mg/L (Golder 2020c). The relative proportion of chloride in the TDS at the edge of the mixing zone was considerably lower than that in the treated discharge because of dispersion of the discharge in the mixing zone and distance from the diffuser. This variance occurred due to the receiving waters possessing a much lower concentration of chloride (and relative proportion of chloride in the TDS) relative to the treated discharge. As a result, the median chloride proportion at the edge of the mixing zone decreased to appropriately one-third (the proportion further decreased in the mid-field and reference locations, to 27% and 24%, respectively). This chloride composition in the near-field was consistent with the median for data collected between July 2015 and September 2019 from MEL-01, which was estimated at 29% (see Table A-1 in WQ-MOP Rev2a; Appendix A of Golder (2020c).

Based on the verification of the effluent quality criteria and the SSWQO for TDS as per the WQ-MOP Rev4 (Golder 2020c), Agnico Eagle considers that a chloride SSWQO would be redundant with the TDS SSWQO; furthermore, as the monitored TDS concentrations in 2020 at the edge of mixing zone were well below both the TDS SSWQO and the generic CCME long-term guideline for chloride (120 mg/L; CCME 1999), negligible risk is expected due to chloride concentrations in the receiving environment over the life of the mine.

Although there is no imminent need for a chloride SSWQO, Agnico Eagle has agreed to a process to develop an SSWQO for chloride within the Adaptive Management Plan on the basis of monitoring data for the treated discharge and/or at the edge of the mixing zone reaching specific thresholds. This

responds to specific concerns from the KivIA that potential for chloride toxicity exists associated with the MAC and MGC effluent quality criteria for TDS and a commitment by Agnico Eagle in response to KIA-WL-TC-1 in the 2020 Water Licence Amendment Technical Comment responses (Agnico Eagle 2020c). The process under the Adaptive Management Plan in which an SSWQO for chloride would be developed is described in Section 2.2.1.

2.2.1 Decision Tree

The decision tree for the consideration of the development of an SSWQO for chloride in Meliadine Lake includes thresholds associated with TDS and chloride monitoring data for the treated discharge and chloride concentrations at the edge of the mixing zone (Table 3).

The screening of chloride concentrations at edge of mixing zone will be compared initially to the generic long-term CCME guideline of 120 mg/L; this threshold for chloride is currently used as a benchmark within the AEMP for the Meliadine Mine. If this generic guideline of 120 mg/L is approached (i.e., measured concentrations at edge of mixing zone are greater than 75% of the guideline) or if the composition of chloride in the treated effluent reaches 60% (based on annual discharge average), then a chloride SSWQO would be developed. The SSWQO derivation will follow the CCME (2007) derivation procedures, which will entail screening of toxicity data for reliability and relevance, normalization of toxicity data to toxicity modifying factors in the receiving environment (e.g., water hardness), fitting of data using a species sensitivity distribution curve, and adoption of the HC5 as the SSWQO. The above approach is consistent with that applied at other Northern mine sites (e.g., Ekati mine, Gahcho Kué Mine, Giant Mine), is science-based, and is in alignment with regulatory systems for benchmark development.

Table 3 Adaptive Thresholds for Development of a Chloride SSWQO

Adaptive Management Level	Threshold	Management Activity / Response Action
Normal	• TDS of the treated discharge remains below the MAC of 3,500 mg/L as calculated TDS • Composition of chloride in the treated discharge remains equal to, or less than 50%, based on routine monitoring results • Chloride concentration at the edge of the mixing zone is below 75% of the generic long-term CCME guideline for chloride	1. Continue regular monitoring frequency of treated discharge (MEL 14) and at the edge of the mixing zone in Meliadine Lake (MEL 13-01, 13-07, and 13-10)
Caution	• Composition of chloride in the treated discharge is greater than 50%, but less than 60%, based on routine monitoring results • Chloride concentration at the edge of the mixing zone is below 75% of the generic long-term CCME guideline for chloride	1. Confirm ionic composition of TDS in treated discharge (MEL 14) 2. Identify other sources of site surface water that can be directed to CP1 to reduce chloride proportionality of the TDS 3. Increase frequency of monitoring of treated discharge 4. Maintain regular monitoring frequency at the edge of the mixing zone in Meliadine Lake (MEL 13-01, 13-07, and 13-10)
At Risk	• Composition of chloride in the treated effluent is 60%, based on annual average monitoring results for the discharge OR • Chloride concentration at the edge of the mixing zone greater than 75% of the generic long-term CCME guideline for chloride (based on annual discharge average)	1. Establish a chloride SSWQO

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APPENDIX A • FIGURES

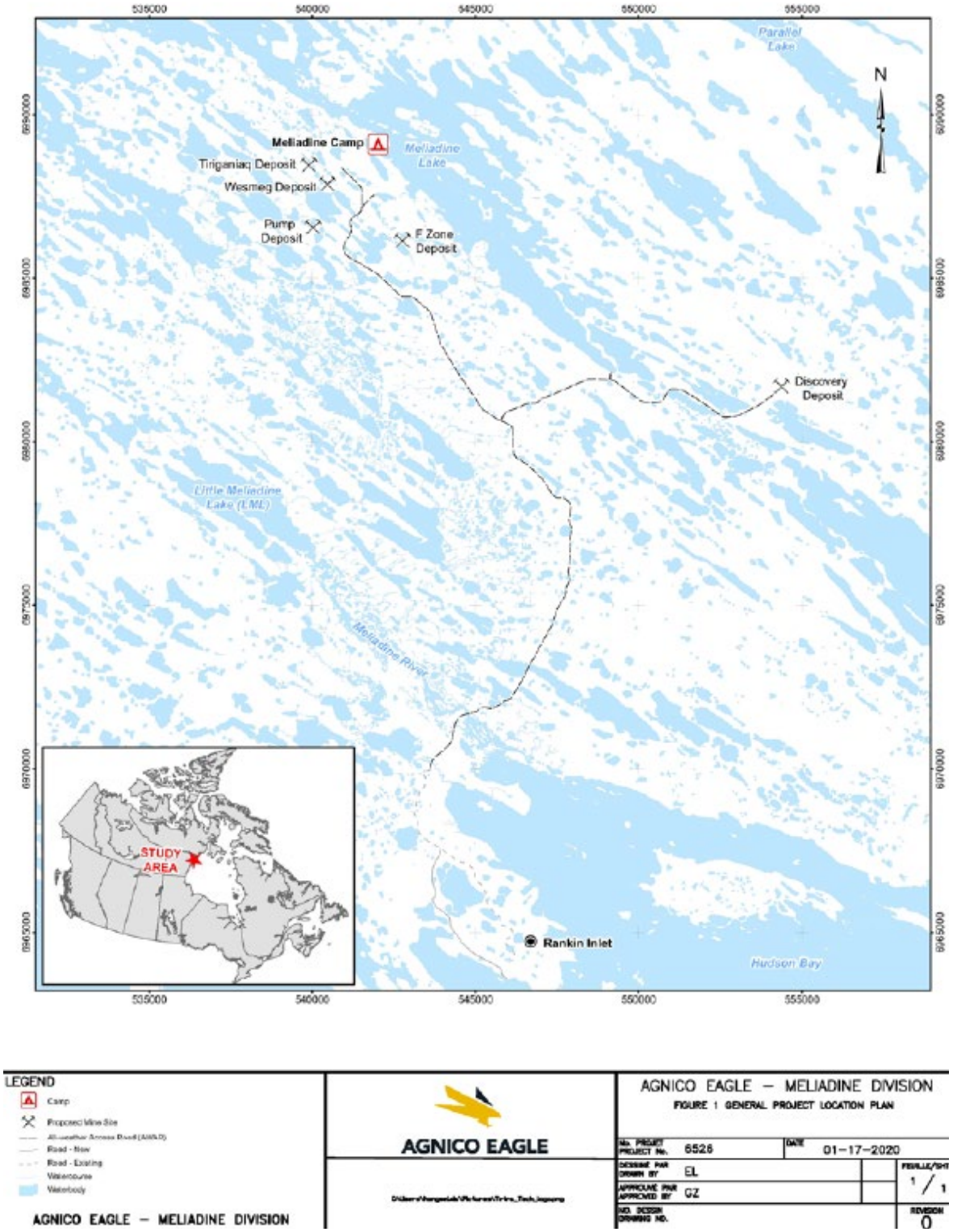

Figure 1 General Project Location

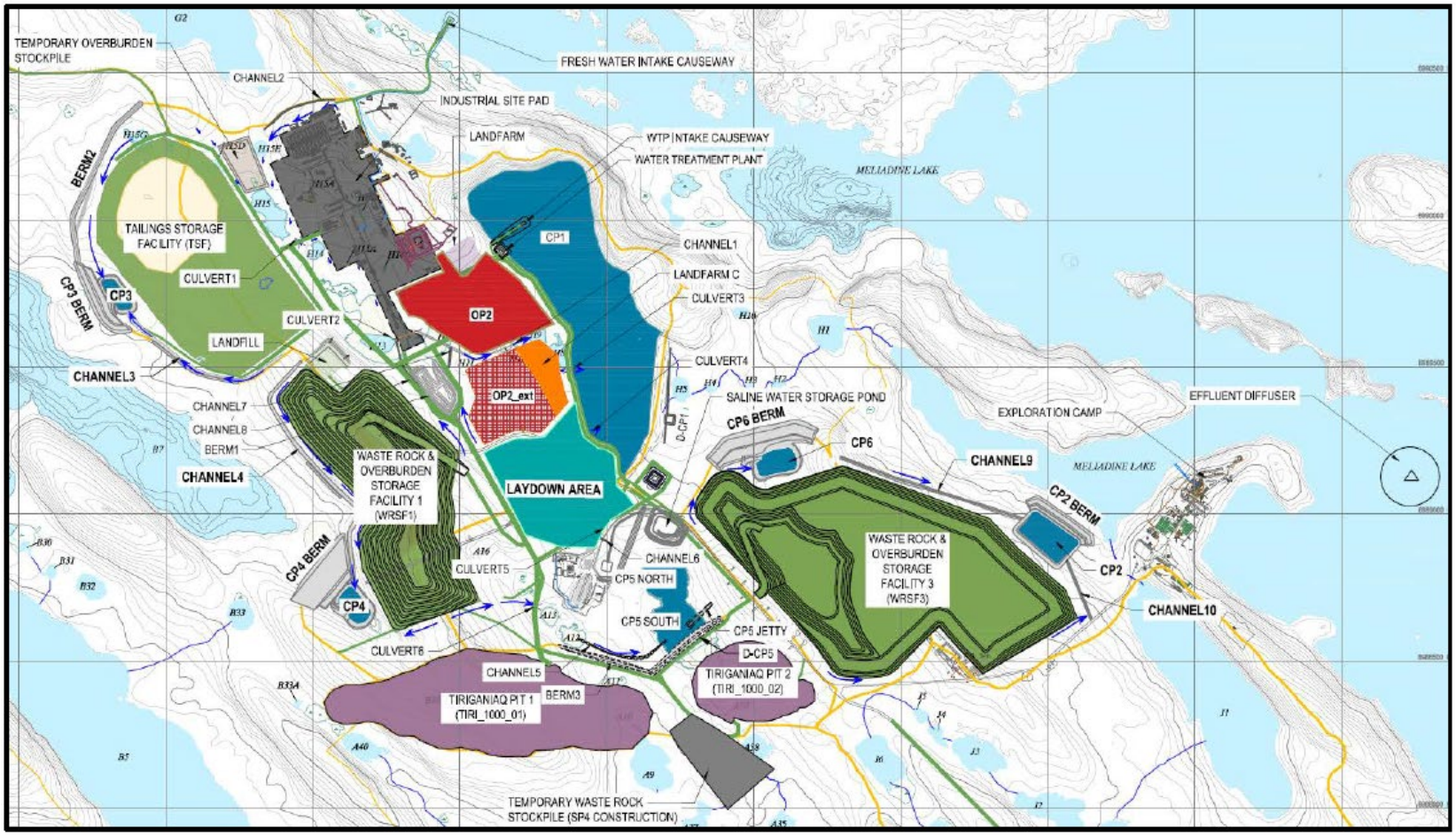

Figure 2 General Mine Site Location

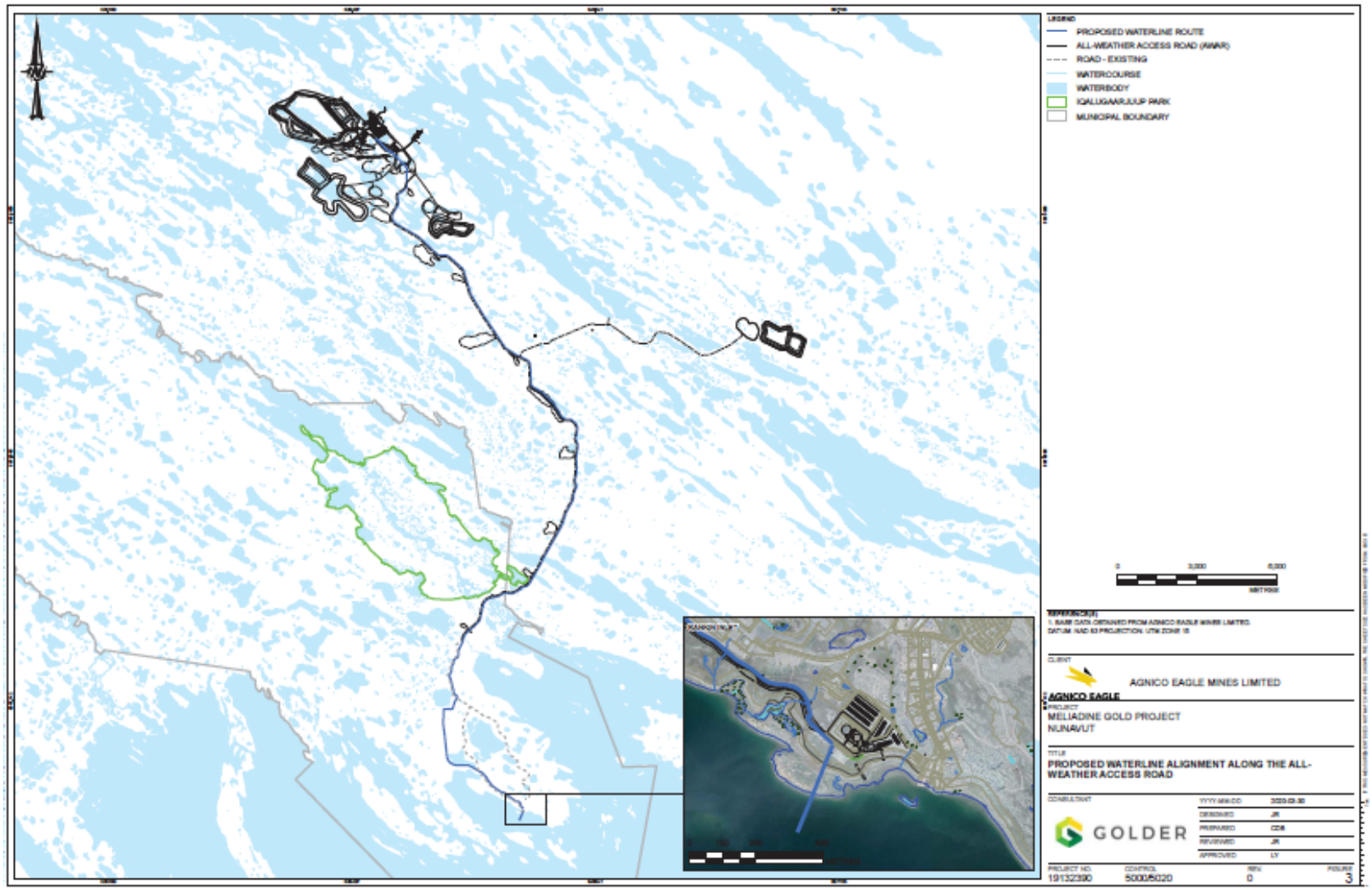

Figure 3 **Waterline Alignment Along the All-Weather Access Road**