



# **AGNICO EAGLE**

## **HOPE BAY PROJECT**

### **Proponent's Response to Comments Received on the NIRB 2022 Annual Report**

**Prepared by**

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**Prepared for**

Nunavut Impact Review Board

**September 2023**



# HOPE BAY PROJECT

## Proponent's Response to Comments Received on the 2022 Annual Report

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## Introduction

On February 18, 2022 Agnico Eagle announced its decision to place the Doris Mill into Care and Maintenance and suspend production of the Hope Bay Project. The NIRB Project Certificate Condition 3 requires that "The Proponent (Agnico Eagle) must obtain all required federal and territorial permits and other approvals and shall comply with such permit and approvals." As a requirement of the water license, on March 30, 2022, Agnico Eagle provided the Nunavut Water Board with formal written notice of Care and Maintenance for the the Doris - Madrid operations under Part J, Item 4 of the Water Licence 2AM - DOH1335 (Water Licence). While in Care and Maintenance, Agnico Eagle will continue to meet the conditions of the NWB water license and at a minimum will provide NIRB an update, on an annual basis, on the status of decision-making regarding the future of the Hope Bay Project to ensure ongoing and future environmental compliance with permits and approvals.

As reported in the 2022 SEMP, Agnico Eagle is dedicated to continuing to train and hire Inuit staff; employment of Inuit increased in 2022, workforce effort remained limited with the placement of the project under care and maintenance. Agnico Eagle will work with the NIRB, SEMWG, SEMC and KIA to identify additional steps and discuss the Care and Maintenance effects on different type of training (i.e. managerial job opportunities are severely restricted due to the contraction of Hope Bay workforce). Once the Project resumes operations, the Implementation Committee (IC) of the IIBA will set new annual Inuit Employment Targets (IET); setting IET and other IIBA obligations is not required during care and maintenance.

At this time, there are no specific timelines to resume production. Presently, the focus at Hope Bay is on advanced exploration and the results of the exploration campaign will be integrated into an updated feasibility and project evaluation. At this time a full closure is not anticipated.

## 1. ECCC

### 1.1 ECCC COMMENTS

As stated in ECCC letter on June 30, 2023, to NIRB, Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Impact Review Board (NIRB) by Agnico Eagle Mines Limited (AEM, the Proponent) regarding the above-mentioned 2022 Annual Monitoring Report.

A summary of the inspection and site visit were provided in the letter and the letter summarized various compliances and non-compliances with respect to MDMER monitoring. ECCC stated that comments under water quality, air quality, and mining-related topics were provided with the Nunavut Water Board 2022 Annual Report review for Hope Bay/Doris North and shared with the NIRB.

### 1.2 RESPONSE TO ECCC-1

Agnico Eagle appreciates ECCC's review and will continue to work with ECCC to review, correct and address the various non-compliances for Hope Bay Project that are listed in the June 30<sup>th</sup>, 2023 letter to NIRB.

## **2. CIRNAC-01**

### **2.1 SUBJECT**

Annual Updates on Hope Bay Project Decision-Making

### **2.2 COMMENT**

In February 2022, AEM announced its decision to place the Doris Mill into care and maintenance and suspend production of the Hope Bay Project. On March 30, 2022, AEM provided the NWB with formal written notice of care and maintenance for the Doris - Madrid operations in accordance with Part J, Item 4 of the Water Licence 2AM - DOH1335 (Water Licence). As required by Part J, Item 5 of the Water Licence, AEM developed and submitted a Doris - Madrid Care and Maintenance Plan (C&M plan). The C&M plan provides details of the site activities to continue and/or to be initiated through the temporary suspension period. The C&M plan also describes the activities to be implemented for the maintenance of mine site facilities, management and monitoring measures, and procedures to be implemented in accordance with temporary closure goals and regulatory requirements.

The 2022 Annual Report describes the operational and monitoring activities AEM is performing at the site during the care and maintenance phase. The 2022 Annual Report does not provide information regarding the status of AEM's decision-making process, such as why and how long the care and maintenance phase will continue..

### **2.3 RECOMMENDATION**

(R-01) CIRNAC recommends that AEM provide updates to all regulators and interested parties on the status of decision-making regarding the future of the Hope Bay Project in the 2023 and future Annual Reports and/or periodic project status meetings. These updates should describe the actions AEM is taking to inform decisions, the anticipated timelines and adaptations that AEM is making to the C&M plan to ensure ongoing and future environmental compliance.

### **2.4 RESPONSE TO CIRNAC-R-01**

Agnico Eagle will provide parties an update on the status of decision-making regarding the future of the Hope Bay Project in the 2023 Annual Report and adaptations made to the C&M plan to ensure ongoing and future environmental compliance in the 2023 and future Annual Reports. There are no specific timelines to resume production; the focus at Hope Bay is on advanced exploration and the results of the exploration campaign will be integrated into updated feasibility and evaluations. At this time a full closure is not anticipated.

## 3. CIRNAC-02

### 3.1 SUBJECT

New Tailings Impoundment Area Water Treatment Plant

### 3.2 COMMENT:

Water discharged from the Tailings Impoundment Area (TIA) must comply with the criteria prescribed in the Water Licence, as well as criteria established under the Metal and Diamond Mining Effluent Regulations (MDMER).

Regarding water quality in the TIA, the following five parameters have consistently been flagged as potential water quality challenges: total suspended Solid (TSS), total arsenic, total copper, total cyanide and unionized ammonia.

The 2022 Annual Report (Section 3.1.1) indicates that work was initiated during 2022 to build a new TIA effluent water treatment plant with commissioning planned to occur before freshet 2023. However, no additional details are provided for the new treatment plant. Given the importance of the plant in maintaining the long-term environmental performance of the site, CIRNAC is of the opinion that AEM should provide further details on the progress made towards construction and commissioning of the water treatment plant and its operation.

### 3.3 RECOMMENDATION/REQUEST

(R-03) CIRNAC recommends that AEM provide further details on the progress of the construction and commissioning of the new TIA effluent water treatment plant, including but not limited to any updates on the design basis, the technologies used, treatment throughput, anticipated effluent quality, discharge locations/periods and sludge management.

### 3.4 RESPONSE TO CIRNAC R-02

Design information (design basis, technologies used, treatment throughput, anticipated effluent quality, discharge locations/periods and sludge management) on the TIA water treatment plant can be found in the design report 6205-693-132-REP-002 approved by the Nunavut Water Board in 2022. The Construction and commissioning continued in 2023. Operation began late in August 2023, with some noncritical construction and commissioning elements still remaining to be completed.



## 4. CIRNAC-03

### 4.1 SUBJECT

Care & Maintenance Actual and Planned Activities

### 4.2 COMMENT

Pursuant to its notification to move the operations into care and maintenance, AEM developed and submitted an initial Doris - Madrid C&M plan as required on 29 April 2022. The C&M plan described activities to be implemented for the maintenance of mine site facilities, management and monitoring measures, and procedures to be implemented in accordance with temporary closure goals and regulatory requirements.

CIRNAC reviewed the C&M plan and supporting documents in association with the review of the 2021 Annual Report, which resulted in the creation of four TRCs that were submitted to the NWB on July 11, 2022. In AEM response to CIRNAC's recommendation R-01 Water Treatment Plant Construction Omission in the Schedule, AEM stated that: "Figure 5-1 will be revised to indicate that the Water Treatment Plant (WTP) will be constructed and installed in the fourth quarter of 2022. The WTP commissioning is now anticipated to occur prior to freshet 2023."

CIRNAC notes that the WTP construction was not completed nor commissioned in 2022 as stated in the C&M plan. The C&M plan provided together with the 2022 Annual Report is the same version that was provided in April 2022 and that Figure 5.1 was not updated as committed. CIRNAC also notes that the 2022 Annual Report (Section 3.1) states that completion of construction of the WTP at the TIA is scheduled for 2023 before the freshet.

Given the potential environmental implications of transitioning to care and maintenance, it is important for CIRNAC to have a clear understanding of the status of works undertaken and completed, underway and planned during the care and maintenance phase. In the absence of an updated C&M plan, it is challenging to assess the status of the described activities..

### 4.3 RECOMMENDATION/REQUEST

(R-04) CIRNAC recommends that AEM provide an updated Figure 5.1 of the C&M plan that includes:

- A. The schedule for construction of the TIA WTP,
- B. Any additional activities AEM has identified as necessary during the care and maintenance phase,
- C. Update to the 2022 to 2024 schedule to include timelines for each activity so as to illustrate actual vs. planned comparison, and
- D. Discussion of any major variance to the plan.

### 4.4 RESPONSE TO CIRNAC- 03 NIRB

Although Hope Bay project timelines and schedules may change due to feasibility, engineering and/or economics of the project, as requested, below is an updated Figure 5.1. Please refer to the previous response regarding the water treatment plant construction and operation schedule.

## PROPONENT'S RESPONSE TO COMMENTS RECEIVED ON THE 2021 ANNUAL REPORT

Site Activities			Comments
Doris	General Civil works	Drilling and blasting at approved quarries for materials preparation	On-going
		Crushing for road and pad development required for the Water Treatment Plan (WTP) to be installed North of the tailings Impoundment Area (TIA)	Completed
		Water Treatment Plan Commissioning	Operation started in Aug 2023, with non-critical construction and commissioning element remaining to be completed.
		Extension of the existing airstrip	Postponed. No specific timeline to completed this work.
	Wind Turbines Construction	Drilling (geotechnical and condemnation) for future construction pf wind turbines	Postponed. No specific timeline to completed this work.
		Earthworks for the road between the jetty and the future wind turbine location	
		Earthworks for the development of the wind turbine/crane pad	
		Installation of cables, piles, foundation, and wind turbine development	
Madrid	General Civil Works	Grading at the Madrid Naartok Ramp pad to prepare for underground ramp development and supporting infrastructure (i.e., garage building)	Postponed. No specific timeline to completed this work.
		Construction of access road and pad for vent raise	
		Removal of mine water from Naartok Open pit	
		Expansion of the Existing Madrid Naartok East Crown Pillar pad, and other pads to support exploration activities	
		Box cut for the ramp development of the ramp	
	Naartok East CPR Portal	Drilling (geotechnical and condemnation) for future construction pf wind turbines	Postponed. No specific timeline to completed this work.
		Earthworks for the road between the jetty and the future wind turbine location	
		Earthworks for the development of the wind turbine/crane pad	
Care and Maintenance Activities			Comments
Waste Rock Stockpiles, Ore Stockpiles, and Overburden piles	Development of new waste rock stockpile at Doris for emergency storage of rock fill associated with underground activities	Postponed. No specific timeline to completed this work.	
	Installation of a downstream collection sump at the Madrid North Waste Rock Pad		
Tailings Impoundment Area	TIA Jetty enhancement elevation	Completed in 2023	
	Road access and pad for WTP north of the TIA	Completed in 2023	
	Construction of TIA berm and spillway	Completed in 2023	
	Freshet water catchment and containment	Completed in 2023	
	Construction of toe berm at the south dam as per the 2021 Annual Geotechnical Inspection report	Completed in 2023	
Buildings and Equipment	Secure and restrict access to unused buildings and structures	On-going	
	Installation of a floating fuel line to improve bulk fuel transfer	2024	
Waste Management	<ul style="list-style-type: none"><li>Storage and disposal of non-hazardous wastes on site</li><li>Periodic shipment of hazardous waste off-site to minimize the amount of waste requiring removal at final closure</li><li>Cleanup of materials (e.g. soil, snow, ice) that may become contaminated during construction and operations due to fuel or other spills</li></ul>	On-going.	
Mine Infrastructure	Doris mill decommissioning and shut downs	On-going.	
Progressive Reclamation	<ul style="list-style-type: none"><li>Removal, and reclamation of buildings and infrastructure that become unnecessary over the life of the mine</li><li>Upon completion of diamond drilling, drill equipment is demobilize from site, and disturbed area is reclaimed</li><li>Dismantle Windy Camp</li></ul>	On-going.	

At this stage, we see no major variance to the plan and there are no specific timelines to resume operation and production. Rather, the focus at Hope Bay is on advanced exploration and the results of the exploration campaign will be integrated into updated feasibility and evaluation of the project.

## 5. CIRNAC -04

### 5.1 SUBJECT

Short-Term and Long-Term Saline Water Management

### 5.2 COMMENT

In February 2020, the Hope Bay Project (the Project) began effluent discharge into Roberts Bay in accordance with the MDMER. Consistent with requirements Environmental Effects Monitoring (EEM) studies including effluent characterization sampling, acute and sublethal toxicity testing, and receiving environment water quality monitoring have been undertaken showing compliance with the authorized limits set out in Schedule 4 of MDMER and there were no acutely toxic effluent samples. The monthly Surveillance Network Program (SNP) reports show the Project discharges have been in compliance with NWB water licence criteria. Notwithstanding this record of compliance, AEM now finds itself challenged to continue discharging to Roberts Bay, a marine environment, since the implementation of new MDMER toxicity testing requirements for the species *Acartia tonsa* for marine discharge.

As noted in the C&M plan, this new requirement has necessitated the development of, as described by AEM, “alternative water management strategy for mine water and for the TIA water to remain in regulatory compliance for discharge to the receiving environment” including a series of short-term mitigation measures such as a constructing a separate pond to segregate saline mine water from other contact water collected and stored in the TIA. This was initially accomplished in 2022 with an AquaDam built across the end of the tailings beach to provide a storage reservoir for saline mine water between the AquaDam and the South Dam of the TIA. AEM is also in the process of constructing a more permanent solution for the storage of saline water, as well as the construction of a new water treatment plant to manage potential contaminants of concern in TIA water prior to discharge. AEM anticipates that these efforts will allow them to continue its activities during the site's care and maintenance phase.

While these short-term mitigation measures have been sufficient during the care and maintenance phase, it is unclear to CIRNAC whether the measures will be adequate to address the MDMER *Acartia tonsa* requirements if/when AEM re-initiates mining activity.

### 5.3 RECOMMENDATION/REQUEST

The (R-05) CIRNAC recommends that AEM provide descriptions of its:

A. Options for carrying out mining operations within the context of compliance with the new toxicity criteria for *Acartia tonsa* as required by the MDMER; and

B. Plans for a permanent long term water segregation strategy when the site resumes production.

### 5.4 RESPONSE TO CIRNAC 04

During C&M, Hope Bay mine is managing the water to meet MDMER requirements by segregating saline mine water from other contact water respectively in the saline water storage (formerly Aquadam area) and the TIA. We will continue to meet the MDMER requirements; segregation as well as water treatment will be part of the management strategy when the toxicants are well understood for *Acartia Tonsa*.

## 6. CIRNAC -05

### 6.1 SUBJECT

Report Improvements/Clarifications – Updated Management Plans

### 6.2 COMMENT

CIRNAC's review of the updated management plans provided, as part of the 2022 Annual Report, found revision document controls were appropriate for the most part to allow for efficient review. However, revision documents control issues/ improvements, as noted below, were identified with respect to two of the management plan revisions: Waste Rock, Ore and Mine Backfill Management Plan (WRSP), March 2023 and Doris and Madrid Water Management Plan, Rev. 17, March 2023..

### 6.3 RECOMMENDATION/REQUEST

(R-06) CIRNAC recommends that prior to any review by intervenors, the Licensee ensure all plans submitted to the NWB, meet the requirements of Part B item 15 which states

*"The Licensee shall review the Plans referred to in this Licence as required by changes in operation and/or technology and modify the Plans or Manuals accordingly. Revisions to the Plans or Manuals are to be summarized and submitted in the form of an Addendum to be included with the Annual Report required by Part B, Item 2, complete with a revisions list detailing where significant content changes are made."*

CIRNAC recommends the following changes to the Waste Rock, Ore and Mine Backfill Management Plan, March 2023, AEM:

A. Update the cover page, document control section and clarify the document version number.

CIRNAC recommends the following changes to the Doris and Madrid Water Management Plan, Rev 17, March 2023, AEM:

B. Revise the document control section to be more specific on updates made.

### 6.4 RESPONSE TO CIRNAC -R05 (NIRB)

Agnico agrees with the recommendation and will complete the updates in the next cycle of management plan reviews and resubmit a revised plan in 2024.

## 7. CIRNAC: General Comments

CIRNAC will continue to work with AEM to ensure continued compliance with all water licence and Crown land lease requirements associated with the Doris North Gold Mine and Phase 2 Hope Bay Belt Projects.

## **7.1 RESPONSE TO CIRNAC**

Agnico Eagle appreciates the thoroughness of the review by CIRNAC. We also appreciate the collaboration and follow-up with Agnico Eagle following the inspection in September 15, 2022 and November 16, 2022. Agnico Eagle will continue to work with CIRNAC and will ensure we are in compliance with all water licenses and Crown land lease requirements associated with Hope Bay Project.

## **8. DFO-1**

### **8.1 SUBJECT**

Underwater Noise

### **8.2 REFERENCES**

Shipping Management Plan – Section 4.

### **8.3 COMMENT**

Gap/Issue: 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.

Condition 33 of the Project Certificate 009 highlights the actions to be undertaken by the proponent. However, the underwater noise issue, monitoring and mitigation measures have not yet been developed with DFO.

The shipping plan also states that:

“Appropriate indicators and thresholds to determine if negative impacts on marine wildlife are occurring will be established after at least two years of data collection”..

### **8.4 CONCLUSION/REQUEST**

Proponent to clarify what data has been collected so far.

Proponent to monitor and model their noise footprint using expert support. This model should evaluate the impact(s) of shipping noise on marine mammals present in the shipping route.

A plan with scheduled work to support this request should be developed with DFO and presented in the 2023 annual report.

The Shipping Management Plan including model, sensitive areas, mitigation measures and appropriate indicators and thresholds, should be updated..

### **8.5 RESPONSE TO DFO-1**

During Care and Maintenance, there will be a reduction in marine traffic in Robert's Bay. Nevertheless, a monitoring program was designed in January 2023 to address T&C 33 for Project Certificate No 009, described in Section 4 of the Shipping Management Plan. This monitoring program was designed following

T&C 33, which states that *“The Proponent shall develop a monitoring protocol for assessing disturbance to marine wildlife resulting from project-related underwater noise in Roberts Bay, and to facilitate assessment of the potential short term, long term, and cumulative effects of project-related noise (including vessel noise in Roberts Bay) on marine wildlife.”* The monitoring program is designed to assess disturbance to marine wildlife resulting from vessel noise in Roberts Bay.

The monitoring program was designed to assess potential disturbance to marine wildlife during shipping activity, however there is no monitoring requirement for underwater noise modelling. Data are being collected in 2023 for the first time and will be reported as part of the 2023 WMMP. Thresholds of negative impacts can be established once at least two years of data are collected, with sufficient data on the overall detections of marine wildlife with and without shipping activity. Agnico Eagle continues to follow the Shipping Management Plan that was developed for the Project to meet commitments made during the Nunavut Impact Review Board (NIRB) hearings related to Marine Shipping. Agnico Eagle will engage through the annual report process with DFO to review the marine mammal monitoring plan and for input on thresholds and mitigations.

## 9. DFO-2

### 9.1 SUBJECT

Summary of Vessel Activity

### 9.2 REFERENCES

Shipping Management Plan – Section 5.

### 9.3 COMMENT

Gap/Issue : The reporting requirements *“The annual WMMP Report will include a summary of vessel activity, including tracks of shipping vessels, to verify that shipping routes observed setback distances in sensitive habitat areas (Section 2.2).”*

The 2023 Wildlife Mitigation and Monitoring Plan (WMMP) and Shipping Management Plan do not include a summary of vessel activity – including tracks of shipping vessels.

### 9.4 CONCLUSIONS/REQUEST

Proponent to provide additional details on project shipping vessel activity, including a summary of vessel activity, with tracks of shipping vessels, to verify that shipping routes observed setback distances in sensitive habitat areas.

### 9.5 RESPONSE TO KIA-NWB-6

Project shipping vessel activity and vessel tracks are provided Figure 3.12.1 of the 2022 WMMP Report. Methods are described in Section 3.12.1 and results are described in Section 3.12.2.2.

## **10. DFO-03**

### **10.1 SUBJECT**

Marine Mammal Monitoring Program

### **10.2 REFERENCES**

Shipping Management Plan.

### **10.3 COMMENT**

Gap/Issue: Lack of Marine Mammal Monitoring protocol aboard shipping vessels.

### **10.4 CONCLUSION/REQUEST**

The Proponent to implement a marine mammal monitoring protocol for shipping vessels. The 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..

### **10.5 RESPONSE TO DFO-3**

As previously mentioned, during care and maintenance there will be a reduction in shipping vessels required at Hope Bay. Nevertheless, all vessels supplying the Hope Bay Project are required to avoid sensitive habitat, as identified in Section 2 of the Shipping Management Plan and T&C 31 for Project Certificate No 009, and to report any vessel strikes (see Section 5.1 of the Shipping Management Plan and T&C 32). Vessel crew are also required to scan for sightings of marine mammals during shipping and to record incidental sightings, as per Section 3 of the Shipping Management Plan. Results are reported in the annual WMMP Report (see Section 3.12). In addition, Agnico Eagle asks vessels to confirm at least daily whether there were any sightings of marine mammals; therefore, there are confirmed reports daily whether there were any sightings.

## **11. DFO-4**

### **11.1 SUBJECT**

Aquatic Invasive Species

### **11.2 REFERENCES**

Shipping Management Plan.

### **11.3 COMMENT**

Gap/Issue: Current shipping management plan does not include a monitoring program for aquatic invasive species.

There is a risk of introducing aquatic invasive species through hull contamination from ships..

#### **11.4 RECOMMENDATION/REQUEST**

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.

#### **11.5 RESPONSE TO DFO-4**

Agnico Eagle thanks DFO for their comment and wishes to reiterate its commitment to mitigating risks of introducing aquatic invasive species. Agnico Eagle requires the shipping companies contracted to supply the Hope Bay mine through 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 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.

## **12. DFO-5**

### **12.1 SUBJECT**

Appendix on fish and fish habitat

### **12.2 REFERENCES**

NA.

### **12.3 COMMENT**

Gap/Issue: The Hope Bay 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.



## **12.4 RECOMMENDATION/REQUEST**

Proponent to provide and 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.

## **12.5 RESPONSE TO DFO-5**

Agnico Eagle disagrees with DFOs recommendation. DFO authorization NU 02 0117.3 conditions related to death of fish, HADDs, fishout activities have been fulfilled, in our view offsets have been completed and Agnico Eagle will continue to follow DFO Measures to Protect Fish and Fish Habitat under care and maintenance.

More specifically, during Care and Maintenance approved works and undertakings of bridges, culverts and roads will remain in a steady state and are not expected to change. Therefore, there is nothing specific to report to DFO, rather we will continue to summarize DFO related NIRB Project Certificate conditions that are annual reviewed in Section 8- and specifically Table 8-1. Summary of Post Environmental Assessment of Monitoring Program under Project Certificate No. 003 for Doris North- Hope Bay Project.

Presently, there has been no alteration nor loss of fish or fish habitat, nor a Fisheries Act Authorization granted for predicted effects on fish and fish habitat by the Madrid-Boston Project. A monitoring program will be approved during the Fisheries Act Authorization process.

# **13. Transport Canada**

## **13.1 TRANSPORT CANADA COMMENTS**

Transport Canada provided a review of Agnico Eagle's Doris North Project 2022 Annual Monitoring Report by email to NIRB dated Friday June 23, 2023 and commented on three topic areas: 1) Marine safety and security 2) Navigation protection and 3) Transportation of Dangerous Goods (TDG).

As stated in the email, all areas are in compliance and no enforcement activity was undertaken or required in 2022.

## **13.2 RESPONSE TO TC**

Agnico Eagle appreciates the thoroughness of the review of the NIRB annual report, and the comments received from TC.

## 14. Health Canada – HC -01

### 14.1 SUBJECT

Noise Abatement Monitoring Plan

### 14.2 REFERENCES

Agnico Eagle Mines Limited Hope Bay Project 2022 Nunavut Impact Review Board Annual Report

Wildlife Mitigation and Monitoring Plan (Agnico, 2021), NIRB ID No: 341588

Hope Bay Health and Safety Management Plan (TMAC, 2017), NIRB ID No: 314716

Nunavut Impact Review Board 2021-2022 Monitoring Report Doris North Gold Mine and Phase 2 Hope Bay Belt Projects.

### 14.3 SUMMARY

**HC encourages the development of a stand-alone Noise Abatement Monitoring Plan.**

Project Certificate Term and Condition No. 04 requires that, “The Proponent shall, in consultation with the Government of Nunavut-Department of Environment, Environment and Climate Change Canada, and Health Canada, maintain a Noise Abatement Monitoring Plan” (Agnico 2022 Annual Monitoring Report PDF pg. 6-52). Health Canada does not appear to have been consulted on maintaining a Noise Abatement Monitoring Plan (NAMP).

In response to Term and Condition No. 04, the Proponent states in their 2022 Annual Report that noise monitoring information is currently found in the Wildlife Mitigation and Monitoring Plan (Agnico, 2021), and the Hope Bay Health and Safety Management Plan (TMAC, 2017).

Development of a stand-alone document would improve access to relevant information on project-related noise, the noise abatement plan, and associated monitoring. Health Canada has published guidance that could support Agnico Eagle in developing and maintaining a NAMP (refer to Health Canada. 2017. Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario).

### 14.4 CONCLUSIONS /REQUEST

HC recommends that future annual reports provide the NAMP as a stand-alone document, as suggested by the NIRB in the Nunavut Impact Review Board 2021-2022 Monitoring Report..

### 14.5 RESPONSE TO HC -01

During Care and Maintenance, operational noise will be reduced as site activities will be focus on advanced exploration. Nevertheless, mitigations to reduce Project-related noise are in place as per the Noise Abatement Monitoring Plan, monitoring is completed as prescribed in the plan and based on the isolation of the site, annual reporting would be limited to documenting announcements, which occur onsite so that personnel are aware of surface blasts.

Health Canada (2017) states that:

*If no human receptors are (or will be) present in the local or regional study area during the construction, operation or decommissioning phases of the project, no further assessment with respect to noise is necessary.*

While there are occasionally land users in the surrounding area, there are no nearby communities close enough to be impacted by Project-related noise. The nearest community of Cambridge Bay is 125 km away and the Hope Bay area has a relatively low density of land users, making information distribution for events like blasting unnecessary. Through the hearings and consultation with Inuit Advisors, Hope Bay committed to developing and adhering to the Noise Abatement Monitoring Plan, which does not require annual reporting. As a result, we believe a stand-alone annual report related to noise abatement related to potential human health Impacts is not necessary. Noise monitoring that is related to wildlife are reported in the WMMP.

## **15. Health Canada- HC-02**

### **15.1 SUBJECT**

Noise Complaint Resolution Process

### **15.2 REFERENCES**

Nunavut Impact Review Board 2021-2022 Monitoring Report Doris North Gold Mine and Phase 2 Hope Bay Belt Projects Agnico Eagle Mines Limited

Agnico Eagle Hope Bay Project 2022 Nunavut Impact Review Board Annual Report Appendix D-3: Wildlife Mitigation and Monitoring Program Compliance Report

Hope Bay Health and Safety Management Plan (TMAC, 2017), NIRB ID No: 314716

TMAC Resources Madrid-Boston Project Final Environmental Impact Statement Annex V8-5. Hope Bay Project Community Involvement Plan.

### **15.3 COMMENT**

HC recommends the implementation of a communications plan and noise complaint resolution process as part of the Noise Abatement and Monitoring Plan to minimize impacts on traditional land users and on-site, off-duty workers.

The Proponent has provided information regarding noise monitoring results and noise impacts from blasting activities in the Wildlife Mitigation and Monitoring Plan (Agnico, 2022), and Hope Bay Health and Safety Management Plan (TMAC, 2017). HC acknowledges the Proponent's Community Involvement Plan, but notes that development of a noise-specific complaint resolution process including a formalised means of receiving and responding to complaints in a timely fashion as part of the Noise Abatement Monitoring Plan would be effective mitigation measures that are easily implemented.

In addition, it is recommended that the Proponent inform all people (Indigenous and non-Indigenous) who may be affected by Project-related noise in advance of any notable changes in sound levels (e.g., blasting).

This type of communication may help identify and mitigate many concerns related to noise. Multiple methods of communication (e.g., telephone, mail, signage, websites) can support effective and efficient communication between the Proponent and land users.

Existing and future human receptors impacted by Project-related noise may include members of the public carrying out traditional land use activities, and off-duty workers who are on-site. Despite the absence of traditional land use activities currently in the area, a precautionary approach could consist of a noise communications plan, and complaint resolution process to reduce the impact of noise on the potential land users, and on-site off-duty workers..

#### **15.4 CONCLUSION/REQUEST**

HC recommends the implementation of a communications plan to notify the public prior to any excessively noisy activities or an accident or malfunction that results in unforeseen changes to the acoustic environment, and a complaint resolution process to address noise-related complaints in a timely manner.

#### **15.5 RESPONSE TO HC-02**

Hope Bay has not had any noise-related complaints to date. Mitigations to reduce Project-related noise are in place as per the Noise Abatement Monitoring Plan. Additionally, announcements occur onsite so that personnel are aware of blasts. While there are occasionally land users in the surrounding area, there are no nearby communities close enough to be impacted by Project-related noise. The nearest community of Cambridge Bay is 125 km away and the Hope Bay area has a relatively low density of land users, making information distribution for events like blasting unnecessary.

### **16. Health Canada- HC-03**

#### **16.1 SUBJECT**

Human Health and Ecological Risk Assessment – Assessment of Risks from Consumption of Fish from Marine/Freshwater Aquatic Environment

#### **16.2 REFERENCES**

Agnico Eagle Mines Limited Hope Bay Project 2022 Nunavut Impact Review Board Annual Report.

#### **16.3 COMMENT**

**HC supports continued monitoring of freshwater and marine aquatic fish species for assessment of potential risks to human consumers.**

In the 2022 Annual Report (PDF pg. 6-99), the Proponent reported that metals had been measured in marine and freshwater environments in fulfillment of Project Certificate Condition No. 51. To date, there have been no Project-related exceedances of relevant CCME guidelines. HC notes that the Environmental Effects Monitoring program in Roberts Bay, which is currently under development, will continue to monitor metals in the marine environment and inform assessments of potential risks from consumption of fish (PDF pg. 6-99)..

## **16.4 CONCLUSION/REQUEST**

HC encourages ongoing monitoring of contaminants in freshwater and marine fish, and communication with local consumers to confirm local consumption patterns.

## **16.5 RESPONSE TO HC-03**

While there are occasionally land users in the Hope Bay Project surrounding area, there are no nearby communities close enough to be impacted as the nearest community of Cambridge Bay is 125 km away and the Hope Bay area has a relatively low density of land users. Agnico Eagle will monitor contaminants in freshwater and marine environments as a requirement of EEM and will adhere to AEMP action levels and triggers agreed upon by regulatory agencies and will continue to communicate the results with the Inuit Environmental Advisory Committee, KIA, NIRB and NWB.

# **17. Health Canada – HC 04**

## **17.1 SUBJECT**

Exceedances of Criteria Air Contaminants

## **17.2 REFERENCES**

Phase 2 Hope Bay Belt Project NIRB Project Certificate No.:09

NIRB, 2022. Nunavut Impact Review Board 2021-2022 Monitoring Report Doris North Gold Mine and Phase 2 Hope Bay Belt Projects Agnico Eagle Mines Limited NIRB File No. 05MN047 and 12MN001

Agnico Eagle Mines Limited Hope Bay Project 2022 Nunavut Impact Review Board Annual Report, Appendix D1

Health Canada Final Written Submission 2018 Technical Review Comments to the NIRB, TMAC Resources Inc. Phase 2 Hope Bay Belt Project.

## **17.3 COMMENT**

HC acknowledges the Proponent's plan to monitor nitrogen dioxide (NO<sub>2</sub>) and confirms to the Board that Commitments 63 and 65 reflect HC's advice on potential mitigations provided during the environmental assessment review for the Hope Bay Phase 2 Project.

The NIRB requested information from the Proponent and HC on Commitments 63 & 65 in the Board's 2021 - 2022 Monitoring Report (NIRB, 2022) (Appendix B, Phase 2 Commitments Table, PDF pg. 115),

These commitments appear to be based on recommendations from HC's Final Written Submission (HC-4.1.4 a & c), but a lack of specific information on the Project's consideration of NO<sub>2</sub> and the efforts to reduce emissions in the annual report made it unclear if these commitments were met. HC acknowledges that the Proponent installed a new air quality monitoring station at the Hope Bay mine site in 2021 to measure NO<sub>2</sub> levels (as described in the Agnico Eagle 2022 Annual Monitoring Report, Appendix D1).

## 17.4 CONCLUSION/REQUEST

In response to the NIRB's request for information from HC:

1. Commitments 63 and 65 appear to be based on HC's recommendation 4.1.4 a & c, made during the Hope Bay Phase 2 environmental assessment review to reduce project related NO<sub>2</sub> emissions and improve air quality.
2. Results following the installation of a new NO<sub>2</sub> monitoring station at the Hope Bay mine site could help the Proponent meet Commitments 63 and 65. Specifically, NO<sub>2</sub> monitoring results could be used to evaluate the effectiveness of the current mitigation operations in relation to the CAAQS, and inform decisions related to project emissions and efforts to continuously improve air quality.
3. The inclusion of NO<sub>2</sub> monitoring in the Project's annual reporting will help demonstrate how these commitments have been met. In particular, sharing information on measures taken to manage and reduce emissions will address HC's recommendations..

## 17.5 RESPONSE TO HC-04

Agnico Eagle appreciates the recommendations from Health Canada. Attached you will find the results of the NO<sub>2</sub> monitoring in 2022.

# 18. GN AR#01

## 18.1 SUBJECT/ TOPIC

Helicopter Traffic

## 18.2 TERMS AND CONDITIONS

Project Certificate 003 – Condition #29

Project Certificate 009 – Condition #04, 22

## 18.3 REFERENCES

- Hope Bay Project Annual Report 2022 (Table 8-2. Summary of Madrid-Boston Residual Effects, and Monitoring Program under Project Certificate No. 009)
- Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program (WMMP) Compliance Report
- Back River Project Annual Report 2022
- GN Technical Review Comments on 12MN001 TMAC Resources' DEIS for Phase 2 of the Hope Bay Belt Project, 2017 (170523-12MN001-GN Technical Review Comments- IMTE.pdf).
- GN Technical Review Comments on 08MN053 BIMC Phase 2 Development of the Mary River Project, 2019 (08MN053 -BIMC Phase 2 TRCs – FINAL.pdf).
- GN Technical Review Comments on 16MN036 AEM EIS for the Whale Tail Pit Project, 2017 (170328-16MN056-GN Technical Comment Submission.pdf).

- Maier, J. A. K., 1996. Ecological and Physiological Aspects of Caribou Activity and Responses to Aircraft Overflights. University of Alaska, Fairbanks.
- Wolfe, S. A., Griffith B., and Wolfe, C. A. G., 2000. Response of reindeer and caribou to human activities, Polar Research (19(1), 63-73..

## **18.4 IDENTIFICATION OF ISSUE**

Helicopter flights far exceeded Final Environmental Impact Statement (FEIS) predictions in 2022 and monitoring efforts do not appear to address additional activity, nor do they clearly indicate that wildlife avoidance measures were followed..

## **18.5 IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE**

The Hope Bay Project logged 3,055 one-way helicopter flights in 2022, from May to October, with 3 helicopters on site. Average daily trips were nearly double that (190%) of the FEIS maximum predicted for one-way trips. Trips in 2022 averaged 40km and 39 minutes in duration. The Proponent stated that the high level of helicopter activity was the result of an increase in surface drilling related to an expanded exploration program, which was described as “not part of regular operations” for the Project in the WMMP Compliance Report Section 2.3.4.

The GN is concerned that this additional activity, not being part of regular operations, is not part of regular monitoring either. Destinations and areas with high concentrations of activity are described in general terms, and not defined on a map, making it difficult to see which Project areas are subject to the increased impacts. Furthermore, flight paths and altitudes are not reported.

Caribou have been shown to exhibit increased movement and flight responses to aircraft overflights, which increase with the relative intensity of noise associated with that aircraft (Maier, 1996). Wolfe, et al. found that Caribou had the greatest reaction to helicopter overflights during the calving season, and more than 80% of caribou had a strong reaction (running away) from small aircraft overflights in the winter. This emphasizes the broad reach that helicopter operations have on caribou.

Caribou exhibit a more intense response to helicopters than fixed-wing aircraft at low altitudes (<400m), and flight response to both types of aircraft dissipates as overflight altitude increases. Similarly, cows with calves are more likely to respond to helicopter overflights than other demographic groups (Wolfe, et al. 2000).

Given the evidence for the impacts of low altitude helicopter overflights on caribou, most operating mines in Nunavut have adopted a flight height standard as a key mitigation measure. For example, the primary mitigation measure for minimizing disturbance to wildlife by helicopters at the Whale Tail Pit Project in the Kivalliq, is to “maintain ferrying flight altitudes of 610 m when feasible”, except during take-offs and landings (Table 4, TEMP App 8-E.7) (GN, 2017). Likewise, BIMC requires all project-related aircraft to fly at or above 650m, subject to safety requirements, in an effort to reduce impacts to caribou.

The GN also raises the issue of the absence of pilot observations of caribou, given that, in 2022, caribou (233 individuals) and muskox (267 individuals) were commonly observed by ground-based site staff (WMMP Compliance Report, Appendix 3.2-6). Pilots reported observations of both muskox (19 individuals) and moose (1 individual) as well as a number of bird observations (WMMP Compliance Report, Appendix 3.2-7). In this case, it seems clear that pilots are both aware of and complying with the requirement to report wildlife observations, but that they have not observed caribou in the Project area. This suggests that caribou may be going undetected, and that they may be impacted by low helicopter flights.

## 18.6 RECOMMENDATION(S)

The Government of Nunavut (GN) has identified concerns with the altitudes of the helicopter transits. For the Hope Bay Project, a minimum altitude of 300m above ground level (AGL) is required for helicopters and 610m AGL for fixed-wing aircraft.

The GN recommends the following:

1. Setting a minimum altitude of 610m for all aircraft, except in circumstances where it is not feasible (e.g., external loads) or safe to fly at this minimum flight altitude.
2. That the Proponent provide more detail when reporting helicopter traffic and its intensity around the Project area; specifically, flight paths and altitudes, as is done for other projects (e.g., Back River Project).

## 18.7 RESPONSE TO GN-1

Agnico Eagle recognizes the importance of sufficient aircraft mitigations to reduce disturbance to wildlife, including caribou. However, it should be noted that historical data during baseline and early operations indicate very few caribou observations near the Hope Bay Project. Consistent with other NU projects, the Hope Bay Wildlife Mitigation and Monitoring Plan (WMMP, Agnico Eagle 2023) includes the following mitigations for aircraft:

- "Fixed-wing aircraft will maintain at least 610 m elevation except for take-offs and landing and at the discretion of the pilot for safety concerns.
- Helicopters will maintain 300 m vertical and 600 m horizontal separation (including starts and takeoffs) from caribou and muskox, where safe to do so."

These measures were proposed and approved by stakeholders and regulators during the Phase 2 FEIS and address T&C 22 and Commitment 61 for Project Certificate No 009. Agnico Eagle will continue to adhere to the WMMP.

# 19. GN AR #02

## 19.1 SUBJECT/ TOPIC

Caribou and Muskox Mitigation – Camera Monitoring

## 19.2 TERMS AND CONDITIONS

Project Certificate 009 Condition #22

## 19.3 REFERENCES

- Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report 220704-05MN047 12MN001-GN Comments Re 2021 Annual Report-IA2E.



## 19.4 IDENTIFICATION OF ISSUE

The Government of Nunavut (GN) has previously noted that the wildlife camera monitoring program suffers from reduced camera effort for approximately 6 months of the year due to cameras being knocked down by grizzlies and snow obscuring the camera lenses.

## 19.5 IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

In January of 2022, there was a total of 41 operational days with 3 cameras active out of a possible 1829 days with 59 total cameras – or 2.2% operational capacity. February and March saw improvements, with 5.8% and 29.8% of capacity, respectively. Capacity peaked at 75.7% in June (Table 3.4-1: Caribou Events Recorded by Month). Also in June, camera #22 was knocked down and was inoperable until it was serviced in the fall, up to 4 months later (WMMP Report Section 3.6.3.1).

Recognizing that the wildlife camera monitoring program is the primary means of monitoring wildlife interactions around the Project area and program data are used to assess the Project's zone of influence (ZOI) and wildlife avoidance patterns, it is crucial that operational capacity improves.

## 19.6 RECOMMENDATION(S)

The GN acknowledges that additional effort was undertaken to provide analysis of camera data from the previous study periods. The GN also acknowledges that the Proponent has committed to implementing improvements to the camera tripod infrastructure to reduce the instances of grizzly bear damage, and notes that these efforts were successful as camera knockdowns were reduced by roughly half in 2022 from 2021.

The GN recommends the following:

1. That the Proponent address all outstanding issues related to wildlife camera monitoring for wildlife, including an update to its wildlife camera monitoring program to include more frequent equipment checks for improved operational capacity.
2. That the Proponent investigate and implement the use of alternate cameras or methods of setting up the cameras that may be more reliable for data collection during winter.
3. Clarification from the Proponent on how instances of snow obscuring camera lenses are proposed to be reduced going forward.

## 19.7 RESPONSE TO GN-02

As stated in previous years, loss of camera functioning due to snow occlusion is difficult to address, as cameras (particularly in the Control Zone) are very remote and may occlude following storms in winter (October to April). Typically, when this happens all or part of the camera lens is covered with snow for a short period of time (up to several days), followed by clearing for 1-2 days and then occluded again in the next storm. If the cameras were checked monthly or every 2 weeks, it is unlikely that the cameras would be less occluded by snow, since snow occlusion occurs on a day to day basis. Cameras accessible in the Treatment Zone and ZOI are serviced regularly through the year because they are accessible without extensive helicopter travel. Additional servicing of remotely located cameras in the winter is not feasible given the extreme weather conditions and likelihood of occlusion recurring at the next storm in a few days.

Five camera tripods were repaired in 2022, based on visual assessment of the tripod condition (as described in the 2022 annual WMMP Report Section 3.3.1). All of these tripods already had side-shields

installed from the original construction in 2016. Some but not all cameras have side-shields installed with the original intention of reducing sun glare and damage by grizzly bears.

Anecdotally, cameras with side-shields have been noted to have more snow/ice build up due to the shields providing a structure for the snow to accumulate on and reducing wind clearing the snow off. The 2023 WMMP Report will include an assessment of whether there is any difference in camera effort days overwinter for cameras with and without side-shields. If the overwinter effort days are higher for these cameras with side-shields, the remaining cameras will have the shields added in 2024.

Snow occlusion reduces camera effort in winter, particularly December through February, with an average of 90% occluded days. However, these winter months naturally have minimal detections due to the lack of daylight and lower wildlife activity. Following comments from the KIA on previous WMMP Reports, Agnico Eagle has updated the management of camera data, including correcting for effort due to snow occlusion and daylight hours. Snow and darkness in the Arctic are an inherent reality for this program which have been accounted for in the evaluation of results.

The camera program has been in place with its current distribution since 2016, with the overall volume of data available for analysis increasing each year. The reliability of camera analyses testing Zone(s) of Influence around the project improve with each year of additional data. Analyses presented in the annual WMMP report are similar or even more robust than monitoring conducted at similar projects in Nunavut.

## **20. GN AR #03**

### **20.1 SUBJECT/ TOPIC**

Noise Monitoring

### **20.2 TERMS AND CONDITIONS**

Project Certificate 003 Condition #24, 29

Project Certificate 009 Condition # 04, 22

### **20.3 REFERENCES**

- Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report
- Hope Bay Quarry Blast Noise Monitoring SOP
- 220704-05MN047 12MN001-GN Comments Re 2021 Annual Report-IA2E.

### **20.4 IDENTIFICATION OF ISSUE**

The Government of Nunavut (GN) has previously requested that the Proponent provide the noise management report for any blasting occurring in the reporting year; or state that no noise monitoring or blast monitoring was required due to no blasting activity. This report was not included in the Annual Report..

## **20.5 IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE**

While there is a description of noise monitoring activities in the Annual Report, this description of monitoring (WMMP Report Section 2.5) is not consistent with the reporting requirement within the Noise Monitoring Standard Operating Procedures Section 3, "A noise monitoring report will be completed following all data collection. The reports will include a summary of the methods and equipment, summary tables for the weather, noise data, along with graphs of the raw noise data, a map showing the location of monitoring sites, and photos of each site."

Per the Hope Bay Project's Commitment #41, there is also a need to determine the actual distance from the blast where 96 Lpeak dBZ is recorded..

## **20.6 RECOMMENDATION(S)**

The GN requests that the above discussed noise monitoring report be submitted to the Nunavut Impact Review Board and interveners for review and be included in all subsequent annual reports..

## **20.7 RESPONSE TO GN-1**

During Care and Maintenance, there will be a reduction in surface blasting and an overall noise reduction at Hope Bay. The WMMP Plan (Agnico Eagle 2023) states that the primary mitigation for blasting is that no blasting will occur if muskox or caribou are within sight. If caribou or muskox are present, blasting is delayed until they have left the area. The noise monitoring SOP is intended to further refine the distances at which caribou may be present and have blasting occur, based on modelled levels of noise vibration known to cause disturbance to caribou (described and cited in the SOP). Until noise monitoring is conducted, the default mitigation is that no wildlife are visible prior to blasts, as a conservative measure. The environmental team conducted pre-blasting wildlife surveys for each blast as per the Quarry Management Plan to confirm that no wildlife were visible prior to blasting.

Noise monitoring testing was conducted on three occurrences in August 2022. This work is scheduled to continue according to the monitoring plan.

# **21. GN AR#04**

## **21.1 SUBJECT/ TOPIC**

Unauthorized Discharges

## **21.2 TERMS AND CONDITIONS**

Pollution Prevention

## **21.3 REFERENCES**

- Hope Bay Project 2022 Annual Report Section 7
- Nunavut Spill Contingency Planning and Reporting Regulations (Schedule B), Nu-068-93 (2006).

## 21.4 IDENTIFICATION OF ISSUE

The Annual Report contains well documented reporting and information on spills for the Project. While the Report contains information on spills beyond the legal reporting threshold, it does not contain reports and information on all spills associated with the project. The Government of Nunavut (GN) understands that the Proponent maintains internal records for all spills, regardless of size. The GN believes that the Annual Report should include records of all spills regardless of size in order to better analyze potential project effects..

## 21.5 IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE

The Proponent has stated "Agnico tracks all unauthorized discharges and spills on site, regardless of if they are externally reportable or not, and identifies any observable trends." (Section 7.2 of the Annual Report). The information presented in Annual Report Table 7.2-1 is detailed, clearly identifies causes, and supports review and lessons learned to prevent future spills. This information, when reported in the Annual Reports, becomes available to stakeholders and other project proponents, and can aid in materials handling and spill response for other Projects and activities. This information is valuable independent of whether the spill met the reporting requirement..

## 21.6 RECOMMENDATION(S)

The GN recommends the following:

1. That all spills, regardless of volume or legal reporting requirements, be reported in all subsequent annual reports.
2. That the Proponent note which type of glycol (propylene or ethylene) is used on site, as the Report does not specify..

## 21.7 RESPONSE TO GN- AR#4

Agnico Eagle disagrees with GN recommendation AR #4 and will continue to adhere to the approved Hope Bay Spill Contingency as per the NWB License and report spills according to quantities outlined in the *Nunavut Environmental Protection Act. Consolidation of Spill Contingency Planning and Reporting Regulations R-068-93*.

In the future, Agnico Eagle will report if the glycol is propylene or ethylene glycol.

# 22. GN AR #05

## 22.1 SUBJECT/ TOPIC

Dustfall and Dust Suppression Thresholds

## 22.2 TERMS AND CONDITIONS

Project Certificate 009 Condition #01

## **22.3 REFERENCES**

Hope Bay Project 2022 Annual Report Section 8 - Q1-Q3 2022 Atmospheric Compliance Monitoring Program Report – Doris and Madrid Projects (Table ES-1, s.4.2.2).

## **22.4 IDENTIFICATION OF ISSUE**

The air quality monitoring program indicates that dust levels at the Madrid Site exceeded FEIS predictions and remained high over the summer, even with portions of the project in care and maintenance and limited site activity.

## **22.5 IMPORTANCE TO REVIEW AND SUPPORTING RATIONALE**

Per the Atmospheric Compliance Monitoring Program Report, there were 3 instances where dust levels exceeded Final environmental Impact Statement (FEIS) predictions, and “elevated dustfall levels were measured for two months” (Table ES-1, Section 4.2.2). The Proponent indicated that dust mitigation measures were implemented, but does not specify which measures were utilized, whether these are part of the air quality monitoring program under Project Certificate No. 003 (AR Table 8-1), nor what triggers would be used to initiate suppression efforts. While these exceedances are relatively minor, given that they occurred during reduced levels of Project activity, it is clear that dust generation and its effects have the potential to become a serious issue as the Project re-enters production. Detailed information on dust monitoring and mitigation is required to assess the extent and effectiveness of dust suppression methods at the Project..

## **22.6 RECOMMENDATION(S)**

The Government of Nunavut (GN) recommends that the Proponent provide additional detail on dust suppression methods, frequency, and any thresholds used to initiate dust suppression efforts, as well as a description of which measures were taken during the reporting year in all subsequent annual reports..

## **22.7 RESPONSE TO GN-AR#05**

A summary of the estimated monthly dustfall levels at each monitoring location in the Madrid road are presented in Table 4-6 in Q1-Q3 Atmospheric Compliance Monitoring Program. Dustfall levels estimated from the canister sampling ranged from 2.0 mg/100-cm<sup>2</sup>/30-days (at multiple sites due to the dust fall level being below the method detection limit) to 88.2 mg/100-cm<sup>2</sup>/30-days (M-DF07). M-DF07 is 50 m perpendicular of the road along a transect of samplers identified as: M-DF08, which is 120m from the road and M-DF09, which is 220m perpendicular of the road.

As GN has noted that there were two months (June and August 2022) at one location M-DF07 where elevated dustfall levels were measured. These measurements were however, less than the AAAQO of 158 mg/100-cm<sup>2</sup>/30-days for commercial and industrial areas, were immediately adjacent to the road (50 m from the road), this station is not near a waterbody, are within the project development area, and did not extend to stations M-DF08 and M-DF09, thus did not warrant mitigative actions.

In the future, Agnico Eagle will provide additional details in the annual report to describe measures and rationale taken to mitigate dustfall when levels exceed FEIS predictions.

## 23. KIA-NIRB-01

### 23.1 SUBJECT

Diversion of organic waste to a composter

### 23.2 REFERENCES

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023)

Section 3.1.1 Agnico Eagle, Hope Bay Project, Incinerator and Composter Waste Management Plan (March 2023) Sections 2.1.1.1, 2.1.3, 2.2, 2.2.3, 2.2.6, 2.2.8

Modules A-E Agnico Eagle, Hope Bay Project, Wildlife Mitigation and Monitoring Plan (January 2023)

Section 1.3, Table 1.3-1; Section 2.8 TMAC Resources, Hope Bay Project Incinerator Management Plan (December 2017)

TMAC Resources, Hope Bay Project Non-Hazardous Waste Management Plan (December 2017) Table 4.1

NIRB, Letter Re: Composter, Acknowledgement Regarding Agnico Eagle Mines Limited's Composter Modification at the Hope Bay Project (May 10, 2023).

### 23.3 SUMMARY

The KIA is concerned that the proposed composter will increase attraction of scavenging wildlife species, such as grizzly bear and furbearers. The increased presence and potential habituation of these animals may lead to increased human-wildlife interactions and incidents, as well as the need for the habituated animals to be terminated. A change from incinerating all food wastes to composting could be substantial for wildlife attraction and may also be non-compliant with the terms of the Project's Type A Water Licence. Agnico needs to plan for and implement additional management measures for the composter to mitigate wildlife attraction, monitor the effectiveness of these measures, and apply adaptive management, including identifying when it is necessary to continue/revert to incineration.

### 23.4 DETAILED REVIEW COMMENT

In the Summary of Project Activities in 2022, Agnico states that construction and operations at Doris included beginning to relocate and erect a dome to house a composter in the area of quarry 2 (Section 3.1.1). Agnico also updated their Incineration Management Plan in March 2023 to include composter waste management. The KIA understands that the NIRB determined that the Composter Modification would not change impacts to wildlife (among other potential impacts) and does not require an amendment to the existing water licence, does not meet criteria for significance as set out in the Nunavut Planning and Project Assessment Act (NuPPAA), and does not require further assessment by the NIRB (letter dated May 10, 2023). However, we have some concerns about the proposed composter and potential effects on wildlife.

It is unclear if and how thoroughly Agnico considered potential wildlife attraction to the composter. Since the latest Wildlife Mitigation and Monitoring Plan (WMMP) was updated in January 2023, it does not contain mitigation and monitoring for the composter. The WMMP, Table 1.3-1, still references the Incinerator

Management Plan (2019) and Non-hazardous Waste Management Plan (2017), both of which are intended to ensure that potential attractants are appropriately managed and food waste is safely stored and incinerated. These measures are reiterated in Section 2.8 (Infrastructure and Waste Management) of the WMMP.

The 2023 Incinerator and Composter Waste Management Plan (ICWMP) itself contains conflicting details about how food waste will be managed. In the Plain Language Overview, Agnico states that “This Plan ensures that... 2) animal attractants are promptly incinerated...” The addition of a composter to manage “organic matter including food (e.g., coffee grounds and tea bags, eggs and eggshells, fruit and vegetable peelings, meat, chicken and fish including bones, nut shells, pasta, ice, sauces and gravy, solid dairy products, table scraps and plate scraping, etc.)” and small dead animals (Section 2.1.1.1) suggests that Agnico is non-compliant with their own policy.

Section 2.1.3 (Prevention of Wildlife Attraction) states that “Agnico Eagle is required by the Water Licence and Project Certificate to manage food wastes to prevent attraction of wildlife, and if necessary, incinerate food wastes... Collection and transfer of food wastes is performed so that these attractants are stored safely, moved between facilities securely, segregated and sent for composting and as a last resort, to reduce wildlife attraction, are burned in the incinerator promptly.” The reviewer could not find the 2019 version of the Incinerator Management Plan on the NIRB registry; however, it is apparent in the 2017 version that the “if necessary” and “as a last resort” language regarding incineration was not previously included. The Conformity Tables in Module A: Doris, Module B: Windy, Module C: Madrid, and Module D: Boston still reference Type A water licence (2AM-DOH1335) language such as, “The Licensee shall dispose of all food Waste in an incinerator designed for this purpose...” Has the Nunavut Water Board (NWB) agreed to amend the wording of these terms?

In Section 2.2 of the ICWMP, Agnico states that “The composter will be housed where waste management activities (i.e., the incinerator) are already conducted, and within the approved mine footprint.” It is unclear if Agnico considers this siting to be a measure to manage wildlife attractants (i.e., one source location rather than multiple). However, the KIA notes that food waste and general kitchen refuse are/were incinerated daily (Table 4.1 in the 2017 Non-Hazardous Waste Management Plan), while the composting process takes a minimum of nine days (Section 2.2.6 in the ICWMP). Daily incineration was highly recommended to minimize the amount of time that potential attractants would be present on site.

Agnico discusses Odour and Dust Control in Section 2.2.8, stating that “Odours during the operation of the equipment is mitigated by sweeping the floor, cleaning up any organic matter debris on or around the composter, and removing any material that has fallen on the floor. Careful monitoring of the composting process... will aid in avoiding the generation of odours. The monitoring of humidity is an important factor in controlling odours from the composting process.” There is no mention of wildlife effects/attraction in this section about odours. The KIA notes that the Brome Composter Operating Manual (Version 2019) in Module E of the ICWMP, from which Agnico pulled odour management measures, focuses on how “to maintain a good impression of your composting installation and to avoid disagreements with your neighbours.” These ‘urban’ measures may be insufficient to mitigate attraction of wildlife such as grizzly bear, which may be able to smell odours up to 30 km away. Note that the Brome Composter Operating Manual, Section 4.5, also suggests installation of an odour dispersion or treatment system (e.g., fume hood) for odour management, which Agnico does not appear to have considered. If they do plan to install such a system, that should be included in their plan explicitly.

Finally, Agnico states in Section 2.2.3 (Composter Description and Installation) that “Collected compostable waste are stored in dedicated waste containers, located throughout the Hope Bay Mine where organic material may be produced.” It is unclear if these dedicated waste containers are new for composting, or if they already existed for incineration purposes. Clarification is needed regarding the locations of these

containers; it would be prudent to restrict them to the kitchen facilities such that potential wildlife attractants are not distributed “throughout the mine”. Ultimately, the KIA is concerned that the proposed composter and storage of materials for incineration throughout the Hope Bay mine will increase attraction of scavenging wildlife species, such as grizzly bear, wolverine, foxes, and wolf, to the Project site. The increased presence and potential habituation of these animals may also lead to human safety concerns and increased human-wildlife interactions, incidents, and wildlife terminations. Agnico’s policy and protocol changes from incinerating all food wastes to composting could be substantial for wildlife attraction. It is crucial that Agnico plan for and implement additional management measures for the composter to mitigate wildlife attraction, monitor the effectiveness of these measures, and apply adaptive management, including identifying when it is necessary to continue/revert to incineration. The WMMP should be updated to include the composter as soon as possible and prior to composter installation and operation. The details of the composting plan should also be provided to the KIA for review.

### **23.5 RECOMMENDATION/REQUEST**

Please clarify if potential attraction of wildlife to the composter was considered in this modification proposal. For example, has Agnico studied the potential effects of keeping organic material on site for 9 days (composting process) vs. 1 day (incineration schedule) within the containers planned to store compostables?

Please describe the composter design (e.g., inclusion of an odour dispersion or treatment system), management measures, and monitoring program that will be applied to mitigate wildlife attraction to the composter. These details must be included in the next iteration of the Hope Bay WMMP.

Please clarify if dedicated waste containers for organic material will be restricted to the kitchen facilities (or as per the current management and safe storage of food waste prior to incineration, which appears to be effective in mitigating wildlife attraction).

### **23.6 RESPONSE TO KIA-NIRB-01**

Agnico Eagle thanks the KIA for sharing their concerns, will update the WMMP in the next cycle to reflect details of operations outlined in the recommendation. The composter design and specifications are attached in the Appendix and to reduce any wildlife life attraction due to composting, odours and wind-blown debris will be controlled during composting as the composter will be housed inside a refurbished coverall located in Quarry 2.

As the KIA and NIRB are aware, Agnico’s Hope Bay Project currently sends its organic material at the Hope Bay facility to an on-site incinerator, which requires fuel for its operation, and shipment and disposal of ash in an approved southern disposal facility. As a measure to reduce fuel consumption, reduce greenhouse gas emissions and atmospheric pollutants, Agnico is including in-vessel composting of organic waste generated at Hope Bay as an alternative to incineration. Composting is included in the Government of Nunavut strategy to improve the management of solid waste. Diverting organic material to the composting operation is expected to result in a potential reduction in fuel consumption for the incinerator of approximately 1,100 litres of fuel per day and has the potential of reducing greenhouse gas emissions and a reduction in total stack emissions of other combustion-related gases (e.g. SVOCs, particulate matter, gaseous mercury) would also be anticipated at Doris North, Hope Bay Project. It is estimated that composter operation will result in a net reduction in GHG emissions of approximately 21 – 62 t CO<sub>2</sub>e/year.

Agnico has consulted with various agencies and met twice with the Inuit Environmental Advisory Committee (IEAC) since July 2022. To reduce any additional terrestrial habitat loss Quarry 2 was selected for siting. Potential impacts to wildlife and the terrestrial environment will be mitigated; odours and wind-blown debris



will be controlled during composting as the composter will be housed inside a refurbished coverall located in Quarry 2. Agnico proposes to stockpile processed compost (which is odourless once composted according to the supplier and validated by the experience of successful composting at Meadowbank) for progressive closure and store the material in the overburden stockpile west of the Doris Camp or in Quarry 2. Future use of the processed compost from domestic waste will be used in progressive closure and reclamation.

Although there is a potential for wildlife attraction, Agnico Eagle is confident this will be mitigated, we will manage our activities to ensure reduced attraction of scavengers such as grizzlies and we will continue to work with the KIA to discuss the effectiveness of composting. Overall, Agnico Eagle feels there is a net improvement to include composting at the Hope Bay Project which will reduce GHGs, reduce combustion-related gases, and convert waste into materials that will be used for progressive reclamation and closure.

## **24. KIA-NIRB-02**

### **24.1 SUBJECT**

Details of spill events and follow-up activities.

### **24.2 REFERENCES**

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023) Section 7.2, Table 7.2-1

Agnico Eagle, Hope Bay Project, Quarry Management Plan (September 2022) Section 2.2.4.

### **24.3 SUMMARY**

In 2022, there were two reportable spills of underground contact water within two weeks of each other. It is unclear whether any of the corrective actions identified after the first incident were implemented, which may have prevented (or reduced the severity of) the second incident. Another reportable spill involved discharging water that did not meet conductivity criteria. Water testing/monitoring procedures should be modified to wait for accredited lab results before proceeding..

### **24.4 DETAILED REVIEW COMMENT**

There were six reportable spills in 2022, summarized in Table 7.2-1. Two incidents involve underground contact water that occurred within two weeks of each other on May 30 (33 m3) and June 16, 2022 (500 L). The corrective actions and follow-up activities noted for both events are similar and include:

- A one-page summary of the WTP operations, environmental obligations, UG production needs and operator contact information is to be produced, aiming at improving communication between underground and surface departments.
- Installation of visual high alarm on the outside of the water treatment plant.

## PROPONENT'S RESPONSE TO COMMENTS RECEIVED ON THE 2021 ANNUAL REPORT

- The event and the results of the investigation have been communicated to the various underground and surface teams involved in their daily toolbox meetings, and the cross-shift will be informed by e-mail by the underground supervisor.

It is therefore unclear if the corrective actions were immediately implemented after the May 30 spill event or if there was a delay that prevented some/all corrective actions to be implemented until after the June 16 spill event (e.g., procurement of a visual high-level alarm?). Given that the incident investigation on July 11, 2022 determined the root cause to be "A lack of communication between the UG rotation shifts, coupled with an equipment failure, lead to the tank overflowing and causing the spill", it appears that the corrective actions to improve communication may not have been applied (or not completely understood) after the May 30 spill event. The dates indicated for when a follow-up report was provided to an Inspector are also confusing because Agnico lists June 13, 2022 for the May 30 spill event and June 12, 2022 for the June 16 event. The latter is not possible as reporting would need to have occurred before the incident; and neither date would include the results of the July 11, 2022 investigation, which presumably.

involved both spill events (though this is unclear). It is important that corrective actions be undertaken as soon as possible to prevent recurrence.

The final reportable spill in 2022 occurred on August 28 and involved water from the quarry that did not meet conductivity criteria for discharge. Agnico explains that initial water quality testing passed all required parameters; however, a grab sample collected prior to beginning discharge exceeded the 500 µS/cm limit but by the time the lab result was received, discharge had been completed. Field measurements taken prior to discharge also exceeded the allowable limit but these results were not flagged. Agnico identified corrective measures to reduce the likelihood of reoccurrence, including:

- Field measurements will be taken prior to discharge and no discharge will be authorized if any exceedance found.
- Any exceedance in field measurements will stand as guidance until such time that results are available from accredited lab.
- Field monitoring and Sampling procedures were updated to include a quick reference table of field parameters allowable limits. Procedures are to be reviewed with the environmental personnel.
- Our new database will include the exceedance alert system for the quarry's sample station. This will reduce reporting time should an exceedance be noted.

The KIA agrees that these measures should improve identification of discharge water exceedances but notes that Project staff may also need training/re-training on procedures outlined in the Quarry Management Plan. Specifically, Section 2.2.4 states that "Following receipt of the laboratory results, water meeting the discharge requirements (Table 2-2) will be discharged." It is surprising that any staff member would think that a release prior to receiving lab results was a reasonable step to take, and this indicates a potential issue with training. It is possible that field measurements and lab analyses may not be 100% in agreement, especially for values that are close to the allowable limit. As such, discharge should be delayed until the results are available from the accredited laboratory even if the field measurements pass criteria. It does not make sense to collect grab samples for lab analyses but not wait to see these results before making decisions, especially when these decisions could result in environmental impacts..

## 24.5 RECOMMENDATION/REQUEST

- Please clarify if any corrective actions identified after the May 30 underground contact water spill event were implemented before the next spill event on June 16. If not, commit undertaking corrective actions immediately to prevent recurrence.
- Please clarify whether the July 11, 2022 spill investigation considered both May 30 and June 16 events. Please also clarify the reporting timeline to the Inspector.
- Please comply with the procedures already outlined in the Quarry Management Plan regarding water quality testing by an accredited laboratory and when discharge can occur. Corrective actions listed by Agnico contain actions already present in their existing plans. So, it is critical that all employees know those plans and adhere to them.

## 24.6 RESPONSE TO KIA-NIRB-02

With respect to the actions identified after the May 30 spill, certain elements were already in place, namely the inclusion of the daily inspection of the Sedimentation Control Pond (SCP) culvert and the results had been communicated with the underground teams. These steps greatly decreased the severity of the spill on June 16, 2022 as the culvert allowed the majority of the water to drain to the SCP, releasing approximately 500L outside the building when the door was opened, compared to the initial spill which was estimated at over 33 600L. The remaining steps had not yet been put in place when the second spill occurred, however were completed shortly afterwards, and no other events of this nature have occurred since.

Regarding the spill investigation on July 11, 2022, the investigation addressed only the spill which occurred on June 16, 2022. As the above comment notes, there was an error in the follow-up report sending date. The follow-up report was submitted to ECCC, KIA and CIRNAC on July 12, 2022, and not on June 12, 2022. The timeline for the spills is as follows:

- May 30, 2022: First spill of underground water
- May 31, 2022: Investigation of first spill of underground water
- June 13, 2022: First follow-up report sent
- June 16, 2022: Second spill of underground water
- July 11, 2022: Investigation of second spill of underground water
- July 12, 2022: Second follow-up report sent

Finally, all corrective actions proposed as part of the follow-up report to the Quarry D spill on August 28, 2022 have been put in place and all employees taking samples at the Hope Bay quarries have reviewed the Quarry Management Plan since the incident.

## 25. KIA-NIRB-03

### 25.1 SUBJECT

Wildlife species of conservation concern.

## 25.2 REFERENCES

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023) • Appendix D-3 – Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report (March 2023), Executive Summary, Table 1, Sections 3.9.3.1, 3.9.3.3, 3.9.3.4, 3.11.3.2, 3.11.3.3, Appendices 3.2-7, 3.9-2

Agnico Eagle, Hope Bay Project, Wildlife Mitigation and Monitoring Plan (January 2023) Table 2.3-1; Sections 2.2, 3.1.7, 3.1.9, 3.1.10, 3.1.12

Agnico Eagle, Hope Bay Project, Shipping Management Plan (February 2023) Appendix A: Materials Provided to Vessel Operators, Seabird and Marine Mammal Identification.

## 25.3 SUMMARY

There is inconsistent and incomplete information about wildlife species of conservation concern in the WMMP (Jan 2023) and 2022 WMMP Compliance Report. Some species of conservation concern, including migratory birds with nesting observations, are missing from the 2022 WMMP reporting.

## 25.4 DETAILED REVIEW COMMENT

Descriptions of wildlife species of conservation concern (e.g., statuses, inclusion in lists and reporting) are inconsistent within and between Hope Bay Project documents. Agnico should endeavour to complete thorough checks and updates of relevant management plans and reports, especially to correct for omissions of federal species at risk. The following documents and sections were identified as requiring updates:

### **WMMP (Jan 2023) Table 2.3-1 (Species at Risk Observed at Hope Bay and Relevant Plan Sections)**

In the latest Wild Species 2020 (CESCC, 2022), caribou in general is noted with a territorial ranking of S3S4 (Vulnerable-Apparently Secure). Further refinement for caribou populations can be discerned through NatureServe. Grizzly bear is now territorially ranked as S3 (Vulnerable). Short-eared owl has been designated as Threatened by COSEWIC since May 2021 and is also ranked S3B (Vulnerable) in Nunavut. Peregrine falcon was still considered a species at risk in 2022 but was removed from Schedule 1 of SARA in February 2023, and is ranked S4B (Apparently Secure) in Nunavut. Least sandpiper and brant goose are now considered territorial S5B (Secure).

Other species of conservation concern should be added to Table 2.3-1, including Harris' sparrow (Special Concern by COSEWIC and on Schedule 1 of SARA) and marine mammals, such as ringed seal (Special Concern by COSEWIC) and other common whales and pinnipeds included in the identification guides provided by Agnico to shipping operators (Appendix A of Shipping Management Plan): narwhal (Special Concern by COSEWIC), beluga (Eastern High Arctic-Baffin Bay pop., Special Concern by COSEWIC), bowhead whale (Bering-Chukchi-Beaufort pop., Special Concern by COSEWIC and on Schedule 1 of SARA; Eastern Canada-West Greenland pop., Special Concern by COSEWIC), killer whale (Northwest Atlantic/Eastern Arctic pop., Special Concern by COSEWIC), walrus (High Arctic pop., Special Concern by COSEWIC and Vulnerable in Nunavut). The KIA notes that ringed seal was not included in Agnico's marine wildlife ID guides despite this being the representative species for marine mammal VECs.

**Section 2.2 (Caribou and Muskox Management), Section 3.1.7 (Grizzly Bear Monitoring), Section 3.1.9 (Wolverine Monitoring), Section 3.1.10 (Upland Birds), Section 3.1.12 (Raptors)**

Update conservation statuses of caribou, grizzly bear, wolverine, upland birds, and raptors as per Table 2.3-1 and comments above. Additional raptors noted in Section 3.1.12 are no longer considered Sensitive/Vulnerable in Nunavut; rough-legged hawk is now ranked S5B (Secure), and gyrfalcon is now ranked S4 (Apparently Secure).

**2022 WMMP Compliance Report. Executive Summary, Table 1, page x – update Federal Species at Risk as per Table 2.3-1 in the WMMP and comments above.**

- Section 3.9.3.1, Table 3.9-1 (Species Observations during PRISM Plot Surveys 2022) – Harris's sparrow, American golden-plover, and semipalmated sandpiper are also species of conservation concern and should be indicated in bold in the table and noted in text in Section 3.9.3.4.
- Section 3.9.3.3 (Upland Birds, Wildlife Sightings Log and Incidental Observations) – snow bunting is also a species of conservation concern and should be noted in Section 3.9.3.4.
- Section 3.11.3.2 (Raptors, Wildlife Sightings Log and Incidental Observations) – golden eagle is a species of conservation concern and should be noted in Section 3.11.3.3. The status of short-eared owl should also be updated in Section 3.11.3.3.
- Appendix 3.2-7 (Summary of the Hope Bay Project Wildlife Sightings Log and Incidental Sightings) – update species conservation statuses as per Table 2.3-1 in the WMMP and comments above.
- Appendix 3.9-2 (Bird Observation Data for PRISM Plot Surveys, 2022) – semipalmated sandpiper is a species of conservation concern; thus, their nest observations should also be described in Section 3.9.3.4 of the report.

## **25.5 RECOMMENDATION/REQUEST**

Please correct the discrepancies noted in the Detailed Review Comment.

## **25.6 RESPONSE TO KIA-NIRB-03**

Agnico Eagle appreciates the thoroughness of the review for listed species of conservation concern. We will correct the discrepancies noted by the KIA in the 2024 submission of the updated WMMP (plan) as well as the annual 2023 WMMP Report.

# **26. KIA-NIRB-04**

## **26.1 SUBJECT**

WMMP components that should be reported or improved.

## **26.2 REFERENCES**

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023)

- Appendix D-3 – Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report (March 2023)

o Sections 2.3.4, 2.4, 3.8.3.1, 3.8

o Appendices 2.1-1, 3.2-2, 3.2-3, 3.3-1

Agnico Eagle, Hope Bay Project, Wildlife Mitigation and Monitoring Plan (January 2023)

o Sections 3.1.5.4, 3.1.6.2, 3.1.2

## **26.3 SUMMARY**

Clarification is needed regarding some components of the WMMP (Jan 2023) that were not reported in the 2022 WMMP Compliance Report. The KIA also has recommendations for minor revisions to the WMMP to improve annual reporting of species of interest (e.g., VECs and species of conservation concern).

## **26.4 DETAILED REVIEW COMMENT**

Section 3.1.5.4 of the WMMP (Jan 2023) states that “Helicopter flight patches will be recorded by on-board Global Positioning System (GPS) devices including date, time, location, and elevation. Results will be summarized in the annual compliance report.” Helicopter trips were presented in the 2022 WMMP Compliance Report; however, elevation was deliberately excluded from monitoring results. Agnico explains that the compliance report does not examine average or daily flight elevations above ground because “Under all circumstances, helicopters avoid caribou by 300 m vertically and 600 m horizontally, following the WMMP Plan (Agnico Eagle 2021). Should caribou not be present, helicopters are allowed to fly lower than 300 m above ground.” Agnico appears to be referring to policy rather than implementation, but monitoring data are supposed to be collected to provide proof of compliance. Annual reporting should include confirmation that pilots did indeed avoid caribou by 300 m vertically and 600 m horizontally when caribou were observed. There were no caribou (or any wildlife) observations logged by pilots in the 2022 WMMP Compliance Report; can Agnico confirm if pilots observed caribou and avoided them accordingly? It is unclear in the WMMP if pilots are encouraged or required to report incidental wildlife (especially caribou) observations.

Section 3.1.6.2 of the WMMP describes local caribou monitoring and states that “Snow track surveys will be conducted along Project roads during winter months in conjunction with snowbank height monitoring (Section 3.1.5.2). Surveys will be conducted twice per month (SOP: Snow Track and Snowbank Height Monitoring).” Section 2.4 of the 2022 WMMP Compliance Report focuses on snowbank monitoring but there is no mention of snow track surveys.

Section 3.1.2 of the WMMP described what the camera monitoring program is focused on: wildlife VECs (caribou, grizzly bears, muskox, wolverines, raptors) and nest predators (Arctic fox and red fox). For consistency, wolf should be included in the list of mammalian nest predators, and avian nest predators (common raven, gulls, jaegers) should also be included, as these species are reported on as nest predators in the 2022 WMMP Compliance Report (Section 3.8; inclusion of wolf as a nest predator is also explained in Section 5.1 of Appendix 2.1-1). The KIA recommends that wildlife species of conservation concern also be flagged during image processing if any are captured on camera. Currently, Agnico reports “Other Wildlife” recorded in Appendix 3.2-2, and it is unknown if any species of conservation concern among upland birds and waterbirds may have been detected. (Note: there is a discrepancy between Section 3.8.2 (Nest Predators, Methods) in the main body of the 2022 WMMP Compliance Report and Section 3 of Appendix 2.1-1 (Detailed Methodology for the Hope Bay Project Programs, 2022). The latter document states that avian nest predators and small mammals (weasels) were not included in the camera data analyses; however, the former document only references the exclusion of small mammals. Based on the

2022 WMMP Compliance Report results (Section 3.8.3.1, Appendix 3.2-3, Appendix 3.3-1), avian nest predators were included in the analyses.).

## **26.5 RECOMMENDATION/REQUEST**

- Please clarify if pilots observed caribou in 2022 and confirm that pilots avoided caribou by 300 m vertically and 600 m horizontally. Please also consider requesting pilots to record incidental caribou observations during their flights.
- Please clarify if snow track surveys were completed alongside snowbank monitoring in 2022, as required in Section 3.1.6.2 of the WMMP, or explain why they were not completed or reported on. Please also consider distributing the Snow Track and Snowbank Height Monitoring SOP to the KIA and other interested parties for review.
- Please consider flagging upland bird and waterbird species of conservation concern for reporting if any are detected through the camera monitoring program..

## **26.6 RESPONSE TO KIA-NIRB-04**

Pilots are trained annually (at the start of each season when helicopters are brought on site) regarding helicopter mitigations and avoidance requirements for wildlife, including maintaining 300 m vertically and 600 m horizontally as described in the WMMP (Agnico Eagle 2023). Pilots also report incidental sightings of wildlife, summarized in the 2022 annual WMMP Report in Appendix 3.2-5 as observations where habitat type was recorded as “Air”. No caribou were reported during helicopter flights in 2022. Agnico Eagle will remind pilots of the importance of reporting caribou and confirming that they are following mitigations when they see wildlife.

Helicopter activity reporting has been consistent since 2019, the first year of reporting for Phase 2 and Certificate No 009. As stated, elevation is not included because helicopters fly at varied elevations and are only required to maintain specific elevation when wildlife are in the vicinity. The WMMP (plan) will be updated to accurately reflect the reporting design for helicopter activity at site, and confirmation of mitigations and caribou sightings will be provided through pilot reporting as described above.

Snow track surveys have not yet been implemented at Hope Bay. Two methods of additional caribou monitoring were proposed for Phase 2 of the Project, height of land monitoring and snow track surveys. Both methods were under active discussion with the IEAC to determine methods and implementation, but were delayed during the COVID-19 pandemic due to a lack of site visits. Height of land survey methods and protocol were worked through with the IEAC through a series of reconnaissance trips and consultation meetings in 2021 and 2022. The protocol for these surveys was finalized in early 2023. Agnico Eagle will return to discussions with the IEAC regarding snow track survey methods and will report on progress and implementation of these surveys in the annual WMMP Report. The WMMP (Agnico Eagle 2023) will be updated to correct the status of the snow track surveys in the next cycle of annual reporting (i.e. in 2024).

Camera data are processed with a focus on identifying wildlife VECs and nest predators, including foxes, wolves, gulls, ravens, and raptors (four species). Other wildlife, including upland birds, waterbirds, and small mammals, are not identified to species as these animals are not targeted by camera monitoring. When species of conservation concern have been identified in camera photos (e.g., short-eared owls) they are reported in the annual WMMP Report under the corresponding VEC section. However, non-target wildlife photos are not reviewed by wildlife biologists because these species are monitored through other methods and not reliably detected by cameras.

## 27. KIA-NIRB-05

### 27.1 SUBJECT

Pre-blasting deterrent options and criteria.

### 27.2 REFERENCES

Agnico Eagle, Hope Bay Project, Wildlife Mitigation and Monitoring Plan (January 2023)

- Section 2.9, Table 2.9-1.

### 27.3 SUMMARY

More information about pre-blasting deterrent options and criteria, especially drones, is needed in the WMMP..

### 27.4 DETAILED REVIEW COMMENT

Agnico updated the Blast Management section of the WMMP (Jan 2023). Section 2.9 now includes pre-blasting deterrent options for caribou and muskox, including drone, human line, light vehicle (e.g., pick-up truck), and noise deterrents. Agnico also briefly outlines the criteria when each deterrent option should be used; however, additional information about the appropriateness of each deterrent for each species would be useful. For example, Sabina's WMMP Plan for the Back River Project indicates that "the presence of a light pickup truck or person near the muskox is all that is required to encourage muskox to leave the area." Is there a preferred hierarchy of methods to use?

Furthermore, drones are a relatively new technology. Drones have been used for studying caribou, including the Dolphin and Union herd (Torney et al., 2018) and for hunting caribou in the NWT (The Canadian Press, 2019); however, research or reports on using drones for caribou deterrence appear to be lacking. Does Agnico have insight into how caribou will react to drones when used as a deterrent? Please provide or reference supporting materials or previous experience at other projects for the statement that "Drones are more effective for smaller groups of 1-10 animals."

### 27.5 RECOMMENDATION/REQUEST

- Please provide rationale and supporting information or previous experience at other projects for the use of drones as a deterrent option for caribou and/or muskox.
- Please include additional details in Table 2.9-1 for species-specific criteria and preferred hierarchy of methods, if applicable..

### 27.6 RESPONSE TO KIA-NIRB-05

Wildlife deterrence options prior to blasting were added in the WMMP (Agnico Eagle 2023) to comply with T&C 21 for Project Certificate No 009. Deterrent options were added based on known deterrent methods from other projects as well as experience using deterrents on site. Drones are commonly used for remote research but are also known to annoy wildlife. Hope Bay has successfully used drones to deter grizzly bears from site for several years. Although drones do not always work as deterrents, they are easy and



accessible as a first option where possible. Use of deterrents and their outcomes are reported in the annual WMMP Report. Any use of drones to deter caribou and/or muskox will be reported, though drones have not been used to date. As a default, blasts and other activities are delayed until wildlife have naturally left the area, and deterrents are only used as a last resort.

Table 2.9-1 currently includes considerations for use of each method (highlighted below); there is not a specific hierarchy to follow in all circumstances as it's dependent on the number of animals and the area.

**Table 2.9-1. Pre-Blasting Deterrent Options and Criteria (WMMP 2023)**

Deterrent Option	Criteria for Use
Drone	Drones can be used in any terrain as long as the operator has a clear line of sight. Drones are more effective for smaller groups of 1-10 animals.
Human Line	A group of personnel (5+ people) form a line and make noise while slowly walking towards the animal. Personnel will never independently approach wildlife. The line will stop approaching when animals are actively moving away (but may resume if animals stop moving and remain within blasting sight). This method should not be used during fall rut (August – October) or if any animals display aggressive behaviour.
Light Vehicle (e.g., pick up truck)	If wildlife are on or near roads/ cleared areas, they may be encouraged away by a light vehicle driving slowly (i.e., 10-15 km / h).
Noise Deterrents	Examples include bear bangers, screamers, car horns, air horns. These should be used sparingly and only if other measures do not show results.

## 28. KIA-NIRB-06

### 28.1 SUBJECT

Drilling program at Madrid outside the FEIS.

### 28.2 REFERENCES

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023)

- Appendix D-3 – Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report (March 2023)

- o Executive Summary, Table 1

- o Sections 2.3.3.1, 2.3.4

Agnico Eagle, Hope Bay Project, Wildlife Mitigation and Monitoring Plan (January 2023)

- Sections 3.1.5.3, 3.1.5.4.

## 28.3 SUMMARY

Agnico does not discuss potential adaptive management needed for exceedances of FEIS predictions for air traffic, regardless of whether the Project activities were included in the FEIS or not (e.g., drilling program at Madrid that resulted in twice the amount of air traffic anticipated).

## 28.4 DETAILED REVIEW COMMENT

In the Executive Summary, Table 1, page iii (Helicopter and Fixed-wing Flight Monitoring), and Section 2.3.4 of the 2022 WMMP Compliance Report, Agnico explains that the increased helicopter traffic in the Doris area – almost double number of helicopter trips per day compared to the FEIS predictions (19.2 vs. 10 trips per day; Section 2.3.3.1) – is due to a drilling program that was not part of regular operations included in the Madrid-Boston FEIS. Agnico does not provide further discussion about how the FEIS may not have included all anticipated or necessary Project activities or that the predictions may need to be adjusted due to unanticipated Project changes. As noted in a previous technical comment (see KIA-NIRB-04: WMMP components that should be reported or improved), Agnico also failed to provide helicopter monitoring data to prove elevational compliance. It is unclear if Agnico plans to continue using this rationale of activities not included in the FEIS to justify exceedances in impact predictions. The WMMP (Jan 2023), Sections 3.1.5.3 and 3.1.5.4, has no thresholds for adaptive management if air traffic monitoring results exceed FEIS predictions. As such, it is also unclear what Agnico would do to mitigate sensory disturbance if there are more fixed-wing and helicopter flights than anticipated..

## 28.5 RECOMMENDATION/REQUEST

- Please consider adjusted impact predictions if unanticipated Project activities not included in the 2017 FEIS are occurring. Alternatively, provide additional data and mitigation measures alongside clear compliance monitoring data that includes elevation, as required in Section 3.1.5.4 of the WMMP, to prove that additional aircraft will not impact caribou beyond levels predicted in the FEIS.
- Please clarify how Agnico will apply adaptive management if air traffic monitoring results exceed FEIS predictions and include these details in the next iteration of the WMMP.

## 28.6 RESPONSE TO KIA-NIRB-06

Agnico Eagle recognizes the importance of sufficient aircraft mitigations to reduce disturbance to wildlife, including caribou. The Hope Bay Wildlife Mitigation and Monitoring Plan (Agnico Eagle 2023) includes the mitigations for aircraft to avoid caribou and muskox by at least 300 m vertical and 600 m horizontal separation (including starts and takeoffs) from caribou and muskox, where safe to do so. These mitigations are considered robust, especially considering very few caribou have been observed during baseline and early operations within the region of the Hope Bay Project, and are consistent with management plans for other sites in the Arctic, including both exploration programs and operating sites.

Helicopter activity reporting has been consistent since 2019, the first year of reporting for Phase 2 and Certificate No 009. Elevation is not included because helicopters fly at varied elevations and are only required to maintain specific elevation when wildlife are in the vicinity. The WMMP (plan) will be updated to accurately reflect the reporting design for helicopter activity at site, and confirmation of mitigations and caribou sightings will be provided through pilot reporting as described above.

## **29. KIA-NIRB-07**

### **29.1 SUBJECT**

Noise monitoring equipment and SOP.

### **29.2 REFERENCES**

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023) Section 3

Appendix D-3 – Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report (March 2023) Section 2.5 Appendix 2.5-1: Hope Bay Quarry Blast Noise Monitoring SOP

Agnico Eagle, Hope Bay Project, Proponent's Response to Comments Received on the 2021 Annual Report (August 2022) KIA-NIRB-5.

### **29.3 SUMMARY**

The Quarry Blast Noise Monitoring SOP requires revisions due to a change in equipment. Agnico should confirm that no blasting activities occurred in 2022. It is unclear if noise monitoring will be ready for implementation in 2023..

### **29.4 DETAILED REVIEW COMMENT**

In Section 2.5 of the 2022 WMMP Compliance Report, Agnico states that "Noise monitoring testing was conducted on three occurrences in August 2022. Tests were conducted using a SoundAdvisor™ Model 831C, which is different than the measurement equipment indicated in the SOP. Testing indicated that equipment was functional but additional work is required to update the SOP and obtain results sufficient for testing the sound level at varied distances from blasts."

As far as the reviewer is aware, noise monitoring has not been conducted for any blasting activity at the Project. The KIA inquired about noise monitoring during our review of the 2021 NIRB Annual Report (KIA-NIRB-5). Agnico responded that "Noise monitoring was not conducted during blasts in 2021. An attempt to monitor the blast in December 2021 was undertaken, however wind speeds and health and safety concerns for personnel travelling off-road in winter conditions prevented the monitoring from taking place. Monitoring and Equipment were not ready to conduct monitoring during prior blasts. In 2022, noise monitoring will be conducted during blasts following the SOP and results of this monitoring will be provided as part of the annual WMMP report."

It is unfortunate that the Quarry Blast Noise Monitoring SOP is still not ready to implement. Why did Agnico decide to switch to different equipment? There were no blasting activities explicitly mentioned in Section 3 (Summary of Project Activities in 2022) of the 2022 Annual Report; however, Agnico should confirm that no blasting (and thus no noise monitoring) was needed in 2022. Will noise monitoring be conducted during blasts in 2023?

With respect to the current Quarry Blast Noise Monitoring SOP, it is assumed that the same field data sheet (Attachment B) can be used with the new equipment. Additional spaces/fields should be added to the data sheet for consistency with Section 1.3 (Data Collection Procedures) of the SOP, including for date and time of the blast, relative humidity (%), precipitation (mm), and calibration results..

## 29.5 RECOMMENDATION/REQUEST

- Please confirm that no blasting activities occurred in 2022.
- Please explain why Agnico decided to change noise monitoring equipment and clarify if the Quarry Blast Noise Monitoring SOP will be ready for deployment in 2023.
- Please update the noise monitoring field data sheet as described in the detailed review comment. .

## 29.6 RESPONSE TO KIA-NIRB-07

The WMMP Plan (Agnico Eagle 2023) states that the primary mitigation for blasting is that no blasting will occur if muskox or caribou are within sight. If caribou or muskox are present, blasting is delayed until they have left the area. It is important to emphasize that very few caribou have been observed during baseline studies and early operation within the Hope Bay Project region. The noise monitoring SOP is intended to further refine the distances at which caribou may be present and have blasting occur, based on modelled levels of noise vibration known to cause disturbance to caribou (described and cited in the SOP). Until noise monitoring is conducted, the default mitigation is that no wildlife are visible prior to blasts, as a conservative measure. The environmental team conducted pre-blasting wildlife surveys for each blast as per the Quarry Management Plan to confirm that no wildlife were visible prior to blasting.

Blasting did occur in 2022; this was an error in the text in that section. Noise monitoring testing was conducted on three occurrences in August 2022 and Agnico Eagle are collecting data as needed in 2023.

## 30. KIA-NIRB-08

### 30.1 SUBJECT

Camera tripod repairs and upgrades.

### 30.2 REFERENCES

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023)

- Appendix D-3 – Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report (March 2023)

o Section 3.3.1.

Agnico Eagle, Hope Bay Project, Proponent's Response to Comments Received on the 2021 Annual Report (August 2022)

- KIA-NIRB-11

### 30.3 SUMMARY

Agnico repaired/rebuilt five camera tripods in 2022. The repaired/rebuilt setup shown in Photo 3.3-1 appears to have a new camera enclosure, which may be intended to mitigate snow occlusion. If this design is found to be effective, please install enclosures on all remaining cameras deployed..

### 30.4 DETAILED REVIEW COMMENT

The KIA commented on ongoing issues with snow occlusion and grizzly bear damage during our review of the 2021 NIRB Annual Report (KIA-NIRB-11). In response, Agnico stated that they were “planning to update the camera tripods during 2022... Tripods are currently being reinforced with metal brackets and new wood where required, for greater durability and stability. Shields to reduce snow/ice occlusion will be researched and considered.”

Section 3.3.1 of the 2022 WMMP Compliance Report indicates that five cameras (4 out of 59 cameras at Doris and Madrid; 1 out of 29 cameras at Boston) were repaired or rebuilt in 2022. Is Agnico planning to continue repairing/rebuilding the remaining 55 cameras at Doris-Madrid and 28 cameras at Boston in 2023 and beyond? Were the two additional cameras deployed near a Windy Road culvert in August 2022 using this new setup? From Photo 3.3-1, it appears that Agnico selected a wooden enclosure design around the camera, in addition to the reinforcements described above. Is this enclosure intended to mitigate snow occlusion? If so, it would be useful to install on all cameras if they are found to be effective.

Depending on the amount of time it takes to install enclosures on the remaining 83 cameras (or 85 if the Windy Road culvert cameras do not have the new setup), special consideration may be needed to account for the higher camera effort (operational days) expected on the ‘upgraded’ tripods. For example, the number of camera tripods adjusted per year should be relatively equal within the three zones (Treatment, ZOI, Control).

### 30.5 RECOMMENDATION/REQUEST

- Please clarify if the camera enclosure shown in Photo 3.3-1 is meant to mitigate snow occlusion. If this design is effective, please endeavour to ‘upgrade’ the remaining 83 cameras deployed in the Project study areas (55 at Doris-Madrid, 28 at Boston).
- Please provide a timeline for how long it would take to install the camera enclosures on all cameras. If it is estimated to take several years, please consider selecting the same number of cameras in the Treatment, ZOI, and Control zones each year..

### 30.6 RESPONSE TO KIA-NIRB-08

Five camera tripods were repaired in 2022, based on visual assessment of the tripod condition (as described in the 2022 annual WMMP Report Section 3.3.1). All of these tripods already had side-shields installed from the original construction in 2016. Some but not all cameras have side-shields installed with the original intention of reducing sun glare and damage by grizzly bears.

Anecdotally, cameras with side-shields have been noted to have more snow/ice build up due to the shields providing a structure for the snow to accumulate on and reducing wind clearing the snow off. The 2023 WMMP Report will include an assessment of whether there is any difference in camera effort days overwinter for cameras with and without side-shields. If the overwinter effort days are higher for these cameras with side-shields, the remaining cameras will have the shields added in 2024.

## 31. KIA-NIRB-09

### 31.1 SUBJECT

Ground-based waterbird surveys and incidental observations.

### 31.2 REFERENCES

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023)

- Appendix D-3 – Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report (March 2023)

- o Sections 3.10.2.1, 3.10.3.4

- o Appendices 3.2-5, 2.1-1

Agnico Eagle, Hope Bay Project, Wildlife Mitigation and Monitoring Plan (January 2023)

- Section 3.1.11.1.

### 31.3 SUMMARY

Ground-based surveys for waterbird monitoring occurred for the first time in 2022 and focused on the Doris and Madrid areas. It is unclear why areas around Boston and the All-Weather Road (AWR) were not also surveyed. The incidental observation of hooded mergansers could be real; any future sightings should continue to be reported. Additional information is requested about the two nesting waterbirds observed incidentally.

### 31.4 DETAILED REVIEW COMMENT

Agnico conducted ground-based surveys for waterbirds for the first time in 2022. Fifteen survey sites were located along shorelines at varying distances (26 m to 7.8 km) from site infrastructure (Table 3.10-1) and focused on the Doris and Madrid areas (Figure 3.10-1). It is unclear why ground-based waterbird surveys were not also conducted in the Boston area or around the AWR, since the purpose of these surveys is “to gather information on ongoing waterbird habitat use and the potential presence of species at risk in the area” (Section 3.10.2.1 of the 2022 WMMP Compliance Report) at ponds near and farther (>2 km) from Project infrastructure (Section 3.1.11.1, WMMP). No additional information is available in Appendix 2.1-1, Section 6.7.1 (Detailed Methodology for the Hope Bay Project Programs, 2022). Will the program be expanded to the Boston site and AWR in future years?

In Section 3.10.3.4, Agnico states that two hooded mergansers were recorded (a pair observed in Robert's Bay on September 6, 2022; Appendix 3.2-5) but added that they “are out of range in the Hope Bay area, but this sighting may be another merganser species.” Hooded mergansers are quite distinct, though perhaps they were misidentified from afar. Nonetheless, it is interesting to note that while the species' range maps typically do not indicate their presence in northern Canada, there are recent eBird sightings of hooded mergansers around Yellowknife and one sighting in 2022 at Point Lake in NWT near the Nunavut border. This species may be expanding northward, and it would be interesting to confirm their presence near the Project.

Other incidental waterbird observations of note in Appendix 3.2-5 include nesting of white-fronted goose at the Patch Lake outflow (observation no. 94) and nesting of a loon species at KM4/5 Windy Road (observation no. 143). Did either of these waterbird nests require mitigation and monitoring, such as setting up avoidance buffers to minimize disturbance from Project activities and monitoring for nesting outcome? Observations of nesting birds should be included in the main 2022 WMMP Compliance Report.

### **31.5 RECOMMENDATION/REQUEST**

- Please explain why the ground-based waterbird surveys in 2022 focused only on Doris-Madrid and clarify if this monitoring program will be expanded to Boston and the AWR in future years.
- Please encourage Project staff to continue recording incidental wildlife observations as rare or unusual species may occur.
- Please confirm if the two nesting waterbirds observed on site required mitigation and monitoring due to nearby Project activities.

### **31.6 RESPONSE TO KIA-NIRB-09**

Agnico Eagle conducts ground-based waterbird monitoring as part of amended requirements from Doris Project Certificate No 003. After 10 years of compliance monitoring for the Doris Project, comprehensive analyses conducted in 2015 and updated in 2018 indicated that the Project was not having detectable effects on waterbirds. The analysis results and the monitoring program itself underwent active discussion with CWS, during which time the monitoring program was paused (in 2016). The program was finally amended in 2021 from aerial transects to a lower-intensity ground-based monitoring. The amended monitoring program was conducted for the first time in 2022. The Phase 2 Project Certificate No 009 does not require a general compliance monitoring program for waterbirds, but includes requirements for monitoring bird activity at Project ponds and the TIA (T&C 24 and 26), which is conducted every two years as per the WMMP (Agnico Eagle 2023). The current waterbird program monitoring area includes the All Weather Road as part of Madrid, see *Figure 3.10-1: Locations of Ground-based Waterbird Surveys, 2022* in the 2022 WMMP Report. Boston is not included in this monitoring program because the monitoring requirement is related to the Doris project specifically.

Agnico Eagle supports the site-wide culture at Hope Bay of reporting wildlife sightings, as evidenced by the 288 incidental wildlife sightings reports from 2022 (Appendix 3.2-5 in the 2022 WMMP Report). Agnico Eagle will continue to report incidental wildlife sightings and is aware of the shifting ranges of some species. Of note, moose, yellow warblers, and American robins are species which were previously out of range but occur in the Hope Bay area with increasing regularity.

The two waterbird nests observed incidentally did not require mitigation or monitoring as they were not located near any Project activities. Agnico Eagle will include all reports of nesting birds in the main body of the annual WMMP Report in future.

## **32. KIA-NIRB-10**

### **32.1 SUBJECT**

Wildlife interactions, incidents, and mortalities.

## 32.2 REFERENCES

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023)

- Appendix D-3 – Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report (March 2023)

- o Sections 3.11.3.1, 3.3.3, 3.9.3.2, 3.8.3.2, 3.10.3.3, 3.2.2

- o Appendices 3.2-4, 3.2-5, 2.1-1

Agnico Eagle, Hope Bay Project, Wildlife Mitigation and Monitoring Plan (January 2023)

- Section 3.1.3.

## 32.3 SUMMARY

An un-occupied common raven nest was moved from a satellite dish at Boston to the ground at the end of the Boston runway. The relocated nest is unlikely to be reused (as-is and in the location placed) by stick-nesting species. Raven nests are usually re-used by cliff nesting raptors or ravens, and not by the short-eared owl (the only ground-nesting raptor in the area). This appears to be a nest removal rather than a functional nest relocation. If so, it should be characterized as such and permissions to remove or destroy the nest should be included in reporting. Please clarify the terms of the Government of Nunavut Department of Environment (GN DOE) permit for this action. In addition, two incidental observations of deceased wildlife (Lapland longspur and sik sik), and one observation of a wolf circling Project staff, were not discussed in the 2022 WMMP Compliance Report..

## 32.4 DETAILED REVIEW COMMENT

In Section 3.11.3.1 and Appendix 3.2-4, Agnico explains that a non-occupied common raven nest was found on a satellite dish at the Boston Exploration camp. Agnico received a permit from the GN DOE to remove the nest as it presented a potential fire hazard. Agnico moved the nest to the end of the Boston runway, 800 m from the camp. It is unclear what this move was intended to accomplish as the nest, as-is, is extremely unlikely to be reused by common ravens or other stick-nesting raptors when located on the ground (Photo 3.11-2). However, it is possible that the materials will be gathered and reused by ravens or other animals. If the GN DOE permit stipulated that a 'functional' nest should be maintained, a different location above ground (>3 m if possible) should have been chosen. If the permit allowed for the removal of the nest, and they requested it be left on site such that other birds can gather materials for nest building from it, this should be indicated. Currently, the document seems to imply that the nest was moved to retain the functionality of a stick nest, which does not make sense given species nesting behaviours in the area.

In Appendix 3.2-5, there were two incidental observations of deceased wildlife not reported in the main body of the 2022 WMMP Compliance Report. A deceased Lapland longspur was found at Little Robert's Lake in the hydrology station area on July 29, 2022 (observation no. 200), and a deceased sik sik was found on the road by the Geo Shop on August 11, 2022 (observation no. 223). Did the Lapland longspur collide with Project infrastructure? As per Section 3.1.3 (Incident and Mortality Monitoring) of the WMMP (Jan 2023) and Section 4 (On-site Monitoring and Mitigation) of Appendix 2.1-1 (Detailed Methodology for the Hope Bay Project Programs, 2022), migratory bird incidents and mortalities should be reported to ECCC/CWS. Although sik sik mortality does not require reporting to external organizations (as it is deemed an interaction), both of these events should have been discussed in Section 3.9.3.2 (upland birds) and Section 3.3.3 (non-VEC observations).



Also in Appendix 3.2-5, observation no. 114 indicates that a wolf was circling/stalking field geologists while they were prospecting northeast of Doris Mountain, and a helicopter had to be called to pick them up. Furthermore, observation no. 252 involved a close call with a pair of flying loons east of Robert's Bay; "Quick action on the part of the Heli pilot avoided potential interaction with the Avians". (Note: an aircraft collision with the loons would have been a wildlife incident rather than an interaction, as defined in Section 3.2.2 of the 2022 WMMP Compliance Report.) Although neither of these events resulted in direct injury or mortality to wildlife, both observations should have been reported as wildlife interactions in Section 3.8.3.2 (nest predators) and Section 3.10.3.3 (waterbirds).

## **32.5 RECOMMENDATION/REQUEST**

- Please provide more information about the GN DOE permit for stick nest removal and clarify if the common raven nest should have been relocated to an area where it can be reused (as-is) by stick-nesting species.
- Please provide more information about the deceased Lapland longspur, such as suspected cause of mortality and if the mortality was reported to ECCC/CWS.
- Please include the wolf circling/stalking and aircraft close call with flying loons interactions in the 2022 WMMP Compliance Report..

## **32.6 RESPONSE TO KIA-NIRB-10**

The raven's nest removal from the satellite at Boston camp was conducted under an Exemption Permit issued by the Government of Nunavut Department of Environment with authorization to destroy the nest. The 2022 annual WMMP Report included the details that the nest was left at the end of the Boston runway to indicate what actions were taken, and did not mean to imply that the nest would be adequately located for reuse in future.

Agnico Eagle recognizes that some of the incidental sightings listed in Appendix 3.2-5 should be categorized as wildlife interactions (when wildlife interacts with people or Project infrastructure, but direct harm, injury, damage, or wildlife mortality does not take place). The deceased Lapland longspur was not suspected to be related to Project activities; all wildlife mortalities with potential Project-related causes are reported as incidents, and mortalities of migratory birds are reported to ECCC and the GN. Agnico Eagle will be more specific in the reporting of wildlife interactions and wildlife mortalities, even those that are not Project-related, in the 2023 WMMP Report.

# **33. KIA-NIRB-11**

## **33.1 SUBJECT**

Camera effort, twice-yearly checks, and summary data.

## **33.2 REFERENCES**

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023)

- Appendix D-3 – Hope Bay Project: 2022 Wildlife Mitigation and Monitoring Program Compliance Report (March 2023)

o Section 3.2, Table 3.2-1

o Appendices 3.2-1, 3.2-3

Agnico Eagle, Hope Bay Project, Wildlife Mitigation and Monitoring Plan (January 2023)

• Section 3.1.2.

### 33.3 SUMMARY

Five wildlife cameras had low camera effort even during the month after presumed camera checks. It is possible that the cameras were immediately knocked down after checks; any insight Agnico may have for the low camera effort would be informative. There may also have been some camera data collection, entry, and/or management issues..

### 33.4 DETAILED REVIEW COMMENT

Appendix 3.2-1 of the 2022 WMMP Compliance Report presents Wildlife Camera Locations and Camera Effort by Month, Doris and Madrid Areas, June 2016 to September 2022. Camera effort is defined in Section 3.3.2 of Appendix 2.1-1: "Camera effort was calculated as the total number of active deployment days from September 2021 to September 2022. Cameras occluded by snow (25% or more of the screen occluded) for 24 hours or more were considered to have no effort until the screen cleared (75% visibility or better). Cameras were also considered to have no effort during periods in which they were knocked over."

Section 3.1.2 of the WMMP (Jan 2023) indicates that cameras are downloaded a checked twice annually at a minimum; and the notes under Table 3.2-1 in the 2022 WMMP Compliance Report state that "Camera checks are performed in June and September, though checks were not completed on the same day at a given camera in each year." Based on this camera check schedule, one may expect that camera effort would be highest in June/July and September/October, depending on the actual check date, when the batteries are full, tripods are righted after being knocked down, lens are cleaned, etc. However, the following five units had very low camera effort in 2022 and did not follow the expected pattern of active deployment except in June 2021:

Camera no.	Total effort	Average effort	Jun 2021	Sep 2021	Jun 2022	Sep 2022
15	66	3.6	12	0	0	22
36	61	3.4	14	0	0	24
45	51	2.8	30	1	2	0
49	55	3.1	7	2	0	0
60	107	5.9	18	27	0	0

There were also subsequent months of zero camera effort after the presumed camera checks (not summarized in the table above). It is possible that these cameras became non-operational soon after the checks (e.g., knocked over the same night or the next day <24 hr. later). For example, Cameras 45 and 49 each had a single grizzly bear event captured on June 2, 2022 and May 26, 2022, respectively, where the bear was investigating the camera (Appendix 3.2-3). Agnico should confirm that all cameras were checked

twice a year, as outlined in the WMMP, and confirm the camera check dates for 2021 and 2022. Any insight into the low camera effort for these and other units would be useful.

On a related note, it appears that some comments in Appendix 3.2-3 are misplaced. Examples:

- Camera 4 on July 3, 2022: Caribou grazing event has a comment for “Bear knocked the camera down”. Perhaps this note should be in the line above for a grizzly bear investigating camera event (Camera 4 on October 4, 2021).
- Camera 36 ON July 25, 2022: Caribou walking event has a comment for “Two grizzly bears noted in images captured while camera was knocked down.” The next line has a grizzly bear investigating camera; however, it is a different camera (37) and there is only one animal noted.

There are also two entries for Camera 30 on August 4, 2022 of grizzly bears walking with the same comment, “Presumed to have been observed 2022-07-16.” Was this related to a camera malfunction?.

### **33.5 RECOMMENDATION/REQUEST**

- Please provide some insight into the very low camera effort for certain units in 2021-2022, especially for months where the cameras may be expected to be the most functional (i.e., after checks).
- Please confirm that all cameras were checked twice yearly at minimum, as per the WMMP.
- Please verify that the Comments in Appendix 3.2-3 have not been accidentally reshuffled amongst wildlife event entries.

Please clarify if there were other camera malfunctions in 2021/2022, including date errors..

### **33.6 RESPONSE TO KIA-NIRB-11**

Agnico Eagle Hope Bay camera program will be reviewed in the future and at present, continue to be executed according to the 2023 WMMP. Rarely, some cameras experience deployment issues including camera malfunctions requiring repairs or replacement, corrupted data cards, or human error (e.g., faulty formatting). Cameras 15, 36, and 60 experienced operational errors during the 2021/2022 camera period, accounting for the lack of effort days during portions of this period. All cameras are checked twice per year in the spring (usually May/June) and fall (September/October).

Additionally, some cameras are knocked down by grizzly bears shortly after being serviced. It's unknown whether bears investigate the area after they smell or notice activity, or if knockdowns occur shortly after servicing due to bad luck. During the 2021/2022 camera period, cameras 45 and 49 were knocked down shortly after servicing. Camera 45 was knocked down after one operational day in September 2021 and after two operational days in June 2022. Camera 49 was knocked down after 7 operational days in June 2021. The camera was serviced in late September 2021 and was functional until November. The camera was functional again for five days in May 2022 before being knocked down.

The 2022 camera events summarized in Appendix 3.2-3 have some errors where comments do not refer to the associated animal/set of photos. Agnico Eagle will carefully review the camera events and data entry for the 2023 monitoring year in order to reduce errors.

## 34. KIA-NIRB-12

### 34.1 SUBJECT

Monitoring vessel noise and marine wildlife in Robert's Bay.

### 34.2 REFERENCES

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023)

- Section 6.2, New Term and Condition No. 33

Agnico Eagle, Hope Bay Project, Shipping Management Plan (February 2023)

- Section 4.

### 34.3 SUMMARY

Agnico's new "Monitoring Vessel Noise and Marine Wildlife – Robert's Bay" program in the Shipping Management Plan consists of visual surveys to record the presence/absence of marine wildlife before, during, and after shipping. Underwater acoustic monitoring using hydrophones should be conducted in conjunction with visual surveys. Noise modelling should also be completed to assess underwater noise disturbance due to shipping activities occurring at present and marine construction activities to occur in the future.

### 34.4 DETAILED REVIEW COMMENT

Agnico added a new Section 4: Monitoring Vessel Noise and Marine Wildlife – Robert's Bay among their updates to the Shipping Management Plan (Feb 2023). This monitoring program is intended to satisfy the Madrid-Boston Project Certificate No. 009, New Term and Condition (T&C) No. 33, which states: "The Proponent shall develop a monitoring protocol for assessing disturbance to marine wildlife resulting from project-related underwater noise in Roberts Bay, and to facilitate assessment of the potential short term, long term, and cumulative effects of project-related noise (including vessel noise in Roberts Bay) on marine wildlife." The objective of this T&C is to ensure that project activities and project-related marine shipping do not cause unacceptable noise exposure to marine wildlife.

Agnico's new noise monitoring program involves visual surveys to determine the presence/absence of marine wildlife (primarily seals) with and without the presence of ships in Roberts Bay using a Before-During-After study design (Section 4.1). Data to be recorded will include, but is not limited to, the number and species of marine wildlife observed, number of vessels in the Bay and locations, environmental variables, etc. Agnico states that if analyses indicate the marine wildlife may be avoiding Roberts Bay while vessels are present, adaptive management measures to mitigate adverse impacts of project-related noise will be developed.

It is unclear how the proposed noise monitoring program can address New T&C No. 33 without also monitoring underwater noise directly. Agnico does not list vessel type, size, and speed – which also contribute to differing underwater noise levels and frequencies (Heise, 2018; National Research Council (U.S.). Committee on Potential Impacts of Ambient Noise in the Ocean on Marine Mammals, 2003) – as information to be recorded. Visual surveys will be limited by distance and may not capture the extent of vessel noise disturbance, as sound can travel great distances underwater. Noise modelling should be

performed to assess the sound pressure level (loudness), frequency, and distance attenuation of noise produced by shipping vessels that enter and leave Robert's Bay. Furthermore, adaptive management is not possible if one does not know the underwater noise levels associated with negative responses.

Acoustic monitoring using hydrophones should be used in conjunction with the visual surveys. Hydrophones detect sounds made by marine wildlife and shipping vessels; thus, in addition to determining the presence/absence of animals, analysis of acoustic monitoring data from hydrophones can help evaluate if underwater noise disturbance is affecting wildlife behaviour and interfering with communication ("acoustic masking"). Underwater acoustic monitoring is often focused on whales; however, pinnipeds (seals) also produce noises to communicate underwater (Heise, 2018; National Research Council (U.S.). Committee on Potential Impacts of Ambient Noise in the Ocean on Marine Mammals, 2003). Loud underwater noise can also cause injury and death to fish due to pressure changes, which can impact marine mammals. Monitoring noise can enable correlations to be made between large fish die-offs after events like underwater construction or blasting, and subsequent loss of marine mammals.

Agnico states in their comments under New T&C No. 33 that additional monitoring will be included for marine construction activities related to Madrid-Boston, but that no marine construction was completed in 2022 or expected to commence in 2023. Are underwater noise modelling and hydrophone acoustic monitoring part of the plan for when marine construction activities begin? The KIA recommends utilizing these methods earlier to allow for proper monitoring of vessel noise and marine wildlife in Robert's Bay and to collect some existing conditions data (before part of the BACI design) prior to marine construction.

### **34.5 RECOMMENDATION/REQUEST**

- Please provide rationale for how visual surveys alone will accomplish the noise monitoring requirements outlined in the Project Certificate No. 009, New Term and Condition No. 33.
- Please explain what additional noise monitoring is planned when marine construction activities begin.
- Please include hydrophone acoustic monitoring and noise modelling to assess and monitor underwater noise disturbance by shipping vessels (and marine construction activities in the future) at Robert's Bay.

.

### **34.6 RESPONSE TO KIA-NIRB-12**

The marine mammal monitoring program in Robert's Bay was designed to most easily assess potential disturbance to marine wildlife during shipping activity, however there is no monitoring requirement for underwater noise modelling. Data are being collected in 2023 for the first time and will be reported as part of the 2023 WMMP. Vessel activity in Robert's Bay is usually limited to fuel transfer from a large ship and 2 small ships carrying goods back and forth from the larger transport ships. Therefore, underwater noise generation due to shipping activity is limited in scope and scale.

Monitoring for dock construction will include methods of measuring the noise output because construction activity is likely to vary in the amount and types of noise generated. Agnico Eagle understands that monitoring should include a period before construction and will implement a monitoring program with sufficient lead time to collect underwater noise and marine mammal presence data prior to construction.

## 35. KIA-NIRB-13

### 35.1 SUBJECT

Review of commitments for NIRB Monitoring Report.

### 35.2 REFERENCES

NIRB 2021-2022 Monitoring Report, Doris North Gold Mine and Phase 2 Hope Bay Belt Projects (March 2023) Appendices A and B

Agnico Eagle, Hope Bay Project, 2022 Nunavut Impact Review Board Annual Report (April 2023).

### 35.3 SUMMARY

The NIRB requested comments on the Doris North and Phase 2 Hope Bay Belt commitments in March 2023 prior to distribution of Agnico's 2022 Annual Report. A copy of the KIA's review comments for these commitments is attached and should be considered as part of our 2022 Annual Report review, if these comments are not already being addressed by Agnico.

### 35.4 DETAILED REVIEW COMMENT

In March 2023, the NIRB requested that Agnico and Regulatory Authorities comment on the 2006 and 2016 Doris North Commitments and the Phase 2 Hope Bay Belt commitments. This request was made prior to the public distribution (upload to NIRB registry) of the 2022 Annual Report. As such, the KIA used the 2021 Annual Report and other existing Project documents in our review and submitted comments to the NIRB in May, 2023.

Due to the timeline, Agnico did not have an opportunity to address Commitments review comments from the KIA and other parties in the 2022 Annual Report. To date, neither a compilation of intervenor comments nor Agnico responses to these comments has been uploaded to the NIRB registry. As many of the KIA's comments were still applicable when reviewing the 2022 Annual Report, and it is unclear whether Agnico is in the process of addressing these comments, we have included a copy of our comments in Appendix A – Review of Wildlife and Vegetation Commitments.

### 35.5 RECOMMENDATION/REQUEST

- Please clarify whether the KIA's review comments for the Doris North and Phase 2 Hope Bay Belt commitments have been/are being reviewed by Agnico and are in the process of being addressed.
- If not, please refer to the KIA's comments in Appendix A – Review of Wildlife and Vegetation Commitments and consider these as part of our 2022 NIRB Annual Report review.

### 35.6 RESPONSE TO KIA-NIRB-13

Agnico Eagle thanks the KIA for providing a review of the commitments, will address the comments noted above and look forward to reviewing them in upcoming meetings with KIA.

## 36. KIA-NIRB-14

### 36.1 SUBJECT

Trend in Doris Lake chlorophyll-a concentration.

### 36.2 REFERENCES

Appendix D-4: Hope Bay Project: 2022 Aquatic Effects Monitoring Program Report

Section 2.2.3.2, Section 3.5.1

Figure 3.5-1; Tables 3.5-3, 3.5-4.

### 36.3 SUMMARY

The criteria for triggering a low action level response for Doris Lake chlorophyll- $\alpha$  were met yet no response was deemed necessary. The increasing chlorophyll- $\alpha$  concentration of Doris Lake is of potential concern. More generally, based on this issue, the monitoring program structure appears to be internally inconsistent (i.e., the text of Section 2.2.3.2 contradicts that of Section 3.5.1).

### 36.4 DETAILED REVIEW COMMENT

It is noted that there is a significant increasing trend in Doris Lake chlorophyll- $\alpha$ , that this trend is not occurring in the reference lake, and that concentrations are above baseline:

“The Doris Lake chlorophyll  $\alpha$  trend through time was significantly different from a slope of zero ( $p < 0.05$ ) as well as the trend observed in Reference Lake B through time ( $p < 0.05$ ).”

“the mean 2022 phytoplankton biomass in Doris Lake was elevated compared to the single baseline year (2009),”

Therefore, the conditions of Section 2.2.3.2 have been met:

“The following conditions must be met for an exceedance of the low action level for chlorophyll a concentration (TMAC 2018):

1. The identification of a statistically significant change from baseline concentrations;
2. The concentration of chlorophyll a is outside of the normal range based on baseline concentrations; and
3. If a change is detected at the exposure site, there is no similar change at the reference site.”

However, despite fulfillment of the criteria, it was reasoned that no low action level response was needed, based on the following:

“Although the conditions were met in Doris Lake there was no plausible Project-related source for the observed changes; therefore, no low action level responses were triggered for phytoplankton in 2022.”

"In addition, there was no evidence of increased nutrient inputs to Doris Lake (Sections 3.3.6 to 3.3.9) that would provide a causal mechanism for any observed increase." The set of conditions in Section 2.2.3.2 does not include evidence of a causal mechanism. Even in the absence of increased nutrient inputs, it is likely that climate change is altering nutrient cycling in Arctic lakes due to effects on stratification and mixing (e.g., longer ice-free period and higher temperatures lead to enhanced cycling of nutrients between the sediments and water column)..

### **36.5 RECOMMENDATION/REQUEST**

It should be clearly stated in Section 2.2.3.2 whether the 3 criteria are sufficient to trigger a low action level response (which appears to be the intended meaning), or whether they are merely necessary conditions, and the determination as to whether a low action level exceedance has occurred is subject to additional considerations and professional judgement (as in Section 3.5.1).

### **36.6 RESPONSE TO KIA-NIRB-14**

Section 2.2.3.2 of the 2022 AEMP report re-iterates the low action level criteria as indicated in the approved Hope Bay AEMP Plan (TMAC 2018) which does not clearly indicate any additional considerations such as professional judgement or Project-related causation. Therefore, a low action level was mistakenly not triggered in 2022. A Response Plan for Phytoplankton Biomass will be written in response to this low action level trigger as required under the AEMP Plan. The 2023 open-water season field monitoring has already been completed, as this data will be insightful for further understanding chlorophyll a trends in Doris Lake and the Response Plan AEM commits to provided the report as part of the 2023 Hope Bay AEMP annual reporting.

Reference:

TMAC. 2018. Hope Bay Project: Aquatic Effects Monitoring Plan. Prepared by TMAC Resources Inc.: Toronto, ON.

## **37. KIA-NIRB-02**

### **37.1 SUBJECT**

AEMP Modelling Approach.

### **37.2 REFERENCES**

Appendix D-4: Hope Bay Project: 2022 Aquatic Effects Monitoring Program Report

Sections 3.3, C.2, C.3.

### **37.3 SUMMARY**

The modelling methodology and results could be presented with greater clarity. Modifications to the modelling approach (as suggested below) may improve and/or simplify the approach in some ways and



should be considered. The evaluation of temporal trends in the AEMP parameters is of central importance to the AEMP..

### **37.4 DETAILED REVIEW COMMENT**

Trends were assessed using linear mixed modelling in most cases; Tobit regression was used to analyse highly censored datasets. A logarithmic transformation was applied in most cases to yield an error distribution that was approximately Gaussian. In some cases, models were fit separately for each season, in others seasonality was a component of the model. “Depth was accounted for in the model but not evaluated since its effect is not of primary interest”. LOESS curves were displayed on the timeseries plots.

Rather than apply data transformations, a generalized model could be used; this would allow non-normal error distributions to be modelled. It is not clear why seasonality was included as a factor in some of the models and in others the models were applied separately for each season. The decision to include both the surface and deep samples in the same model should be explained more fully – off-bottom samples tell us something particular about the lake (influence of sediment geochemistry); if the goal is to understand the general lake chemistry, it would be better to include only the upper mixed layer data. The relationship between the linear models and the non-linear (LOESS) curves should be clearly explained in the text. If non-linear trends are of interest, would the best model type be of the generalized additive mixed model (GAMM) variety rather than a linear mixed model? In some cases, the smooths are misleading (i.e., the apparent trends are driven by very little data; e.g., under-ice chloride of Patch Lake). Finally, the explanation of Tobit analysis (a relatively uncommon technique) could be improved – it is not clear to this reviewer how exactly the censored data are estimated or why a normal distribution is appropriate – additional plain language explanation (rather than mathematical notation) would be helpful.

Overall, it may be that no changes are needed to the model structure, but the suggested alternatives should be explored, and at a minimum, the relationship between the LOESS smooths and linear models must be clarified in the text.

### **37.5 RECOMMENDATION/REQUEST**

Please evaluate the effectiveness of alternative modelling approaches (e.g., generalized additive mixed models) and clarify the rationale for the chosen modelling approach and how the visualizations (including LOESS curves) relate to the model predictions.

### **37.6 RESPONSE TO KIA-NIRB-15**

Overall, Agnico Eagle does not recommend changes to the statistical analyses but in the 2023 AEMP will provide clarity in method description where warranted, including presenting the data visually using the modelled relationships rather than the LOESS (local regression) curves. A number of points of clarity were requested in the comment, and we have addressed those areas below.

We agree that generalized models can be a good way to handle log-normally distributed data, however in practice the differences in estimation are rarely substantially different and given we are estimating trends rather than attempting prediction we feel that applying data transformation is appropriate for the intention of the data and analyses.

We agree that the text regarding the inclusion of seasonality could be clarified in the text to make inclusion and relevancy more apparent, that will be addressed in the 2023 AEMP report. For water quality, seasonality is included as a factor (i.e., under-ice and open-water) in the model and, although modelled together, results were reported for each season separately. Concentrations of water quality variables may fluctuate across seasons due to natural phenomena, typically greater during the ice-covered season. For

example concentrations could be higher due to exclusion during ice-formation, restricted atmospheric exchange, and reduced water-column mixing whereas the open-water season is more exposed to external inputs such as rainfall, atmospheric exchange, and potential Project-related effects. For sediment, phytoplankton and benthic invertebrates, data were collected from only one season, hence the season was not a part of the model.

Fish and other aquatic organisms are not restricted to particular depths/strata of a lake and water will naturally and frequently be mixed throughout the water column. As water quality is not always uniform throughout the water quality and two depths are monitored to capture the overall concentration of water quality variables throughout the water column for a lake. Two points of assessment in the water quality is valuable in particular if changes in water-column stability/stratification are observed. For water quality, depth was considered in two ways in the analysis: a fitted value across depths for a lake mean, and fitted values by depth to compare the averages of surface and deep samples. Including both depths allows for a direct comparison of their means.

We agree that the LOESS curves added a layer of confusion. They were initially used as a visualization tool, that led us to fitting non-linear models to the data. The suggested revision will be to remove the LOESS plots and instead include only the lines estimated from the regression models. The models we used were linear mixed-effects models, however they were fit using cubic splines for Year allowing for non-linear relationships with outcome variables. We believe linear mixed-effect models felt are a better option than generalized additive mixed models (GAMM) as comparisons across models, and interaction terms are more difficult to interpret using GAMM.

We also agree that the section describing the Tobit regressions could benefit from a less technical description of how Tobit regression works and how the results can be interpreted.

## **38. KIA-NIRB-02**

### **38.1 SUBJECT**

Dustfall exceedances in June and August 2022.

### **38.2 REFERENCES**

Appendix D-1 Q1-Q3 2022 Atmospheric Compliance Monitoring Program Reports – Doris and Madrid Projects

Section 4.2 – Canister Dustfall Monitoring Results

Table 4-6

Page 27-31.

### **38.3 SUMMARY**

Dustfall measurements from canister monitoring exceeded exceedances AAAQO for residential and recreation areas in June and August 2022, while measurements were well below the air quality objective in July. No discussion of the reasoning for these summer exceedances was provided in the report. The cause of dustfall exceedances at the Madrid site in 2022 is important for future monitoring, as causes of exceedances should be documented..

## **38.4 DETAILED REVIEW COMMENT**

Dustfall exceedances were measured in June and August 2022 at the Madrid site from canister dustfall monitoring (66.6 and 88.2 mg/100 cm<sup>2</sup>/30 days in June and August, respectively). Exceedances were measured 50 m from the all-weather road, in the downwind direction (station MDF07). In July 2022, however, dustfall at this station was much lower (6.3 mg/100 cm<sup>2</sup>/30 days), despite a similar prevailing wind direction to June monitoring (ENE vs. E, respectively). The report does not discuss the reason for these exceedances. Were canisters collected at the same time each month, and was vehicular traffic on the all-weather road greater in July compared to other summer months?.

## **38.5 RECOMMENDATION/REQUEST**

AEM is recommended to provide further information on the reasons/hypotheses for the dustfall exceedances in June and August 2022, given that July monitoring was well below other summer dustfall concentrations..

## **38.6 RESPONSE TO KIA-NIRB-16**

As per the response to GN recommendations, Agnico Eagle acknowledges that there were two months (June and August 2022) at one location M-DF07 where elevated dustfall levels were measured. It is likely due to the dryness of the road and lack of precipitation. As noted, these measurements were however, less than the AAAQO of 158 mg/100-cm<sup>2</sup>/30-days for commercial and industrial areas, were immediately adjacent to the road (50 m from the road), this station is not near a waterbody, are within the project development area, and did not extend to stations M-DF08 and M-DF09, thus did not warrant mitigative actions such as dust suppression. M-DF07 is 50 m perpendicular of the road along a transect of samplers identified as: M-DF08, which is 120m from the road and M-DF09, which is 220m perpendicular of the road.

In the future, Agnico Eagle will provide additional details in the annual report to describe measures and rationale taken to mitigate dustfall when levels exceed FEIS predictions.

# **39. KIA-NIRB-17**

## **39.1 SUBJECT**

Text and figure are missing sampling stations..

## **39.2 REFERENCES**

2022 Waste Rock and Ore Monitoring Report, Boston Camp Monitoring Requirements FINAL

Section 4.1 Sample Collection and Figure 2.1.

## **39.3 SUMMARY**

Stations are missing from the Seepage Survey Locations figure and text..

#### **39.4 DETAILED REVIEW COMMENT**

No mention is made of following seepage sites in either Section 4.1 or Figure 2.1: BOS-8B, BOS-8C and at the southern end of the airstrip.

#### **39.5 RECOMMENDATION/REQUEST**

Please include discussion of these sampling stations and include them on Figure 2.1 or provide text that explains why these sites have been neglected..

#### **39.6 RESPONSE TO KIA-NIRB-17**

Although BOS 8B and 8C are licensed sample locations, no pooled water, no water flow, nor seepage were observed at the southern end of the airstrip. These sites have not been neglected, rather there was no flow observed and therefore samples could not be taken in 2022.

### **40. KIA-NIRB-18**

#### **40.1 SUBJECT**

Historic seepage data.

#### **40.2 REFERENCES**

2022 Waste Rock and Ore Monitoring Report, Boston Camp Monitoring Requirements FINAL Tables 4.3 and 4.4..

#### **40.3 SUMMARY**

No context is provided for the historic seepage data..

#### **40.4 DETAILED REVIEW COMMENT**

Three historic seepage sites (P5, P50, P95) are listed with values for general parameters, major total ions, nutrients and total metals but no locations or year of sampling are included. It is therefore not possible to draw any conclusions regarding significance of the historic data. Several of the values are substantially different than 2022 data but without context, the importance of these differences if any, cannot be determined..

#### **40.5 RECOMMENDATION/REQUEST**

Please provide the year and location of these sampling stations and an explanation addressing the differences in values.

#### **40.6 RESPONSE TO KIA-NIRB-18**

Tables 4.3 and 4.4 present the data from seepage station BOS-8A to BOS-8D, which are collectively referred to as BOS-8 and represent contact water from Boston waste rock and ore stockpiles (refer to Figure 2.1 in 2022

Waste Rock and Ore Monitoring Report, Boston Camp Monitoring Requirements FINAL). The footnotes defining the terminology P5, P50, P95 and count are missing from Tables 4.3 and 4.4. To clarify, the P5, P50 and P95 indicates the 5th, 50th and 95th percentile values of the seepage samples collected at BOS-8A to BOS-8D. The count is the number of data points for each parameter. For example, the 50th percentile (or median) concentration of sulphate for historic seepage samples is 330 mg/L. With more data and changing data each year, the concentrations associated with each percentile is and has been seen to fluctuate over time. Figure 4.2 in 2022 Waste Rock and Ore Monitoring Report, Boston Camp Monitoring Requirements FINAL presents the complete sulphate data set and date range of the complete data set (2008 to 2022), with associated interpretation presented in Section 4.5.2. All historic seepage samples presented in Tables 4.3 and 4.4 represent contact water from Boston waste rock stockpile and are collectively referred to as BOS-8. Locations of the 2017 to 2021 sampling locations are shown in Figure 2.1.

## **41. KIA-NIRB-19**

### **41.1 SUBJECT**

Laboratory results for 2022 vs historical results.

### **41.2 REFERENCES**

2022 Waste Rock and Ore Monitoring Report, Boston Camp Monitoring Requirements FINAL Sections 4.2.3 and 5.2.3.

### **41.3 SUMMARY**

No hypothesis is given for the differences in water quality for either seepage or ephemeral streams compared with historical results..

### **41.4 DETAILED REVIEW COMMENT**

A detailed summary is provided of the water quality for both seepage and ephemeral stream results. Comparisons are also made between 2022 results and historical results. Some parameters are substantially different i.e., orders of magnitude, yet no rationale or hypothesis is provided to explain why these differences have occurred..

### **41.5 RECOMMENDATION/REQUEST**

Please provide rationale or hypotheses that explain the differences in water quality for both seepage and ephemeral stream results between 2022 and historical..

### **41.6 RESPONSE TO KIA-NIRB-19**

Tables 4.3 and 4.4 present the data from seepage station BOS-8A to BOS-8D, which are collectively referred to as BOS-8 and represent contact water from Boston waste rock and ore stockpiles (refer to Figure 2.1 in 2022 Waste Rock and Ore Monitoring Report, Boston Camp Monitoring Requirements FINAL). The footnotes defining the terminology P5, P50, P95 and count are missing from Tables 4.3 and 4.4. To clarify, the P5, P50 and P95 indicates the 5th, 50th and 95th percentile values of the seepage samples collected at BOS-8A to BOS-8D. The count is the number of data points for each parameter. For example, the 50th

percentile (or median) concentration of sulphate for historic seepage samples is 330 mg/L. With more data and changing data each year, the concentrations associated with each percentile is and has been seen to fluctuate over time. Figure 4.2 in 2022 Waste Rock and Ore Monitoring Report, Boston Camp Monitoring Requirements FINAL presents the complete sulphate data set and date range of the complete data set (2008 to 2022), with associated interpretation presented in Section 4.5.2. All historic seepage samples presented in Tables 4.3 and 4.4 represent contact water from Boston waste rock stockpile and are collectively referred to as BOS-8. Locations of the 2017 to 2021 sampling locations are shown in Figure 2.1.

For the ephemeral stream sampling program, the data are similarly presented. For example, Table 5.2 is missing the footnote and presents the statistical distribution of concentrations for each parameter, e.g. P5 is the 5th percentile; the complete data record for selected parameters are presented in Section 5.2.3, a discussion of concentration trends are also in that section.

## **42. KIA-NIRB-20**

### **42.1 SUBJECT**

Sodium cyanide (NaCN) spill to water.

### **42.2 REFERENCES**

Hope Bay Spill Contingency Plan. Appendix 1: Hazardous Materials and Product Specific Emergency Response Plans.

### **42.3 SUMMARY**

The absence of a comprehensive spill contingency plan in the case of a NaCN spill to water is of concern.

### **42.4 DETAILED REVIEW COMMENT**

The emergency response for a NaCN spill to water is vague with respect to action that should be taken. For such a serious spill, actions should be decisive and detailed in order to avoid serious environmental and/or human impacts.

Pump contaminated water to drums, tanks or lined containment berms if possible.

Isolate/confine the spill by damming or diversion if feasible.

- Water treatment is only effective if it can be accomplished in conjunction with the spill.
- Treatment chemicals (sodium or calcium hypochlorite) must not be added to surface waters (e.g., streams, lakes) as these are not generally effective and could result in additional environmental impacts.
- Hydrogen peroxide for treatment of solution spills or a sulfur dioxide/air process for treatment of slurry spills may be considered. This measure may only be used as a last

resort if containment is not achievable and the spill can be treated directly at the point of release.

The text addresses the response in terms of “if feasible” and stating that water treatment is effective only if it can be accomplished in conjunction with the spill. The text also states that treatment chemicals must not be added to surface waters, and they are not generally effective and could result in additional environmental impacts.

No text is provided to indicate the steps that must be taken to avoid impacts.

## **42.5 RECOMMENDATION/REQUEST**

Please provide a detailed emergency response plan for a spill to water of NaCN. .

## **42.6 RESPONSE TO KIA-NIRB-20**

Agnico appreciates the thoroughness of the review. We agree with the recommendations and are committed to identifying and therefore planning for the worst case scenarios, including a NaCN spill. In our view, this is covered within Appendix 1: Hazardous Materials and Product Specific Emergency Response Plans- Poisonous and Toxic Substances – Sodium Cyanide Specific Spill Response Plan: Bullett- for spills to water.

It is important to note that during Care and Maintenance, NaCN will not be used on site as it is part of mill processing. Nevertheless, we will thoroughly review this portion of the plan and if deemed necessary, complete updates to the Spill Contingency Plan that include additional specifics on how we will respond to an NaCN spill to water in the next cycle of management plan reviews and resubmit a revised plan in 2024.

# **43. KIA-NIRB-21**

## **43.1 SUBJECT**

Inspection of water management ponds.

## **43.2 REFERENCES**

Hope Bay Doris-Madrid Water Management Plan (Agnico, 2023) Inspection sub-headings

Sections 3.2.1, 3.2.2, 3.2.3, 3.2.5, 3.2.10. Also, Section 4.2.1, 4.2.3, 4.2.4, 4.2.7.

## **43.3 SUMMARY**

Frequency of inspection of the sedimentation pond, contact water ponds 1 and 2 and dewatering pipeline is not provided. Rather “regular” inspection” is proposed..

## **43.4 DETAILED REVIEW COMMENT**

Regular inspection can include a range of frequencies. The text in these sections states that “The containment berm should be inspected by the Site Services department on a regular basis to check for signs of seepage, erosion slumping or other sign of possible failure mechanisms. Regular inspection along the dewatering pipeline will be performed by the Site Services department to check for signs of leaks.”.

### **43.5 RECOMMENDATION/REQUEST**

More specific frequency of inspection should be identified for the sedimentation pond, contact water ponds 1 and 2, the tailings impoundment area and the freshwater intake. Frequency details are also required for the Madrid north contact water pond, Madrid south primary and secondary contact water ponds and freshwater intake.

### **43.6 RESPONSE TO KIA-NIRB-21**

Regular inspections implies at a minimum weekly, however during freshet it may increase to daily, depending on the infrastructure.

We will consider this recommendation and update the water management plan in the next cycle of management plan reviews and resubmit a revised plan in the 2023 annual report with the recommended revisions.

## **44. KIA-NIRB-22**

### **44.1 SUBJECT**

Construction of south and west dams.

### **44.2 REFERENCES**

Doris TIA Operations, Maintenance and Surveillance Manual (Agnico, 2023). Section 3.7 Construction Timing.

### **44.3 SUMMARY**

Inconsistent text and figures regarding the construction of the south and west dams..

### **44.4 DETAILED REVIEW COMMENT**

Section 3.7 states that bulk fill of the Phase 1 portion of the South Dam was done during the late winter to spring of 2018. The Phase 2 bulk fill can now be completed during any season. Figure 2 shows Phase 2 of the south dam is not constructed. Figure 3 shows the dam as constructed.

Section 3.7 also states that the west dam has yet to be built (as of 2021). Figure 2 shows this dam as not constructed. Figure 3 shows it as constructed.

The information appears inconsistent and out of date..

### **44.5 RECOMMENDATION/REQUEST**

Please update figures and text to present consistent and updated information as the date on this report is March 2023.



## **44.6 RESPONSE TO KIA-NIRB-22**

Agnico appreciates the thoroughness of the review. We agree with the recommendation for clarification and will complete the below updates in the next cycle of management plan reviews and resubmit a revised plan in the 2023 annual report with the recommended revisions.

## **45. KIA-NIRB-23**

### **45.1 SUBJECT**

Tailings Impoundment Area (TIA).

### **45.2 REFERENCES**

#### **3.1 CONSTRUCTION AND OPERATIONS**

Text: "The Saline Water Storage, a temporary structure, was built within the TIA limits to allow for segregation of underground water with high salinity and TIA water with low salinity."

### **45.3 SUMMARY**

A temporary water filled portable dam has been constructed within the footprint of the approved TIA to divide saline water from freshwater within the TIA..

### **45.4 DETAILED REVIEW COMMENT**

It is Palmer understanding that a temporary water filled portable dam has been installed in June 2022. The purpose of this temporary dam is to segregate fresh water from saline water. Please describe any monitoring system that will be in place to identify any potential mixture between freshwater and saline water.

### **45.5 RECOMMENDATION/REQUEST**

Please describe management procedures in place to minimize the potential for saline water and freshwater intrusion, and to monitor any potential water flowing through the temporary dam..

## **45.6 RESPONSE TO KIA-NIRB-23**

Agnico Eagle agrees with the KIA comments and has subsequently updated the OMS (Hope Bay Project 2022 NWB Annual Report Agnico Eagle, Appendix H.3 - Operations, Maintenance and Surveillance Manual: Hope Bay Doris Tailings Impoundment Area Revision 6 (AEM, March 2023)) and based on the geotechnical inspection and best practices monitor salinity over time for a number of reasons, most of all to understand the potential impact to freeze-back of the tailings beach within the pond footprint, near the south dam.

Additional monitoring of saline water and freshwater intrusion within the TIA are completed according to the Hope Bay Doris-Madrid Water Management Plan (Agnico, 2023).

## **46. KIA-NIRB-24**

### **46.1 SUBJECT**

Tailings Impoundment Area.

### **46.2 REFERENCES**

3.2 ROBERTS BAY DISCHARGE and Appendix G

### **46.3 SUMMARY**

In 2022, Agnico continued effluent discharge to Roberts Bay beginning on June 14, 2022 and throughout 2022. No non-compliances of the authorized limits set out in Schedule 4 of MDMER occurred in 2022. .

### **46.4 DETAILED REVIEW COMMENT**

Figure 2.2 indicates an increase in Salinity at RBD1 starting 2020 with several samples being above Toxicity Test Selection Threshold – Chronic.

AGNICO should clarify the reason of the increase in Salinity at RBD1..

### **46.5 RECOMMENDATION/REQUEST**

AGNICO should investigate if the increase in salinity at RBD1 is related to the construction of the Saline Water Storage within the TIA..

### **46.6 RESPONSE TO KIA-NIRB-24**

The exceedances were noted and investigated by Agnico Eagle and we are working with the laboratory and ECCC to improve consistency of the testing at Hope Bay. Based on our investigation, it is clear that it was not due to the construction of the Saline Water Storage within the TIA, rather segregation within an approved facility has improved our water management at Hope Bay.

Agnico Eagle has followed up on these exceedances and is managing saline water storage as per NWB license and regulatory requirements, is ensuring pro-active measures are taken to protect the environment and as previously stated is working with ECCC regarding exceedances.

## **47. KIA-NIRB-25**

### **47.1 SUBJECT**

Hope Bay Projects – Doris and Madrid Water Management Plan.

### **47.2 REFERENCES**

Throughout the document

### 47.3 SUMMARY

The document does not acknowledge that TIA has been divided in two sections (fresh water and saline water), as described in Chapter 3 of the Annual Report..

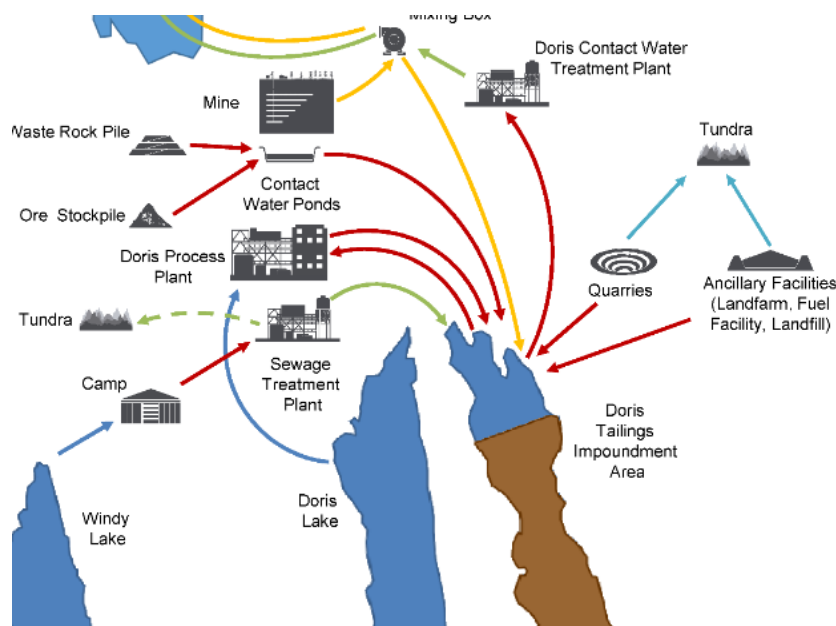
### 47.4 DETAILED REVIEW COMMENT

The diagrams and the text throughout the document do not take into consideration that part of the TIA will be dedicated to the storage of underground water with high salinity, which will be separated from water with low salinity (fresh water). The two sections have temporarily divided by an interim berm and the construction of long-term water separation within the TIA is underway.

Considering that the TIA will be a two “stage” facility (saline water and fresh water), the water management plan should reflect this change in design for the TIA..

### 47.5 RECOMMENDATION/REQUEST

AGNICO should review the water management plan to clearly identify the two sections (saline water and fresh water) of the TIA and specify, for each type of water (Contact Water, Mine water, Treated Water), in which section (saline water and fresh water) of the TIA will be initially discharged to.



### 47.6 RESPONSE TO KIA-NIRB-25

Agnico Eagle appreciates the thoroughness of the review, will consider these recommendations, will update the plan accordingly, and submit it in the next cycle of plan reviews that are submitted as part of the NWB annual report submission, that are due in 2024.

## **48. KIA-NIRB-26**

### **48.1 SUBJECT**

Exploration Drilling.

### **48.2 REFERENCES**

3.3.1 Drilling

### **48.3 SUMMARY**

A total of 55,805 m in 211 underground diamond drillholes were completed in 2022. A total of 65 surface diamond drill holes totaling 52,865 m was completed in 2022..

### **48.4 DETAILED REVIEW COMMENT**

AGNICO should clarify the source of the water used for drilling and under which water license and from which waterbodies it was withdrawn..

### **48.5 RECOMMENDATION/REQUEST**

Please indicate source of water and water license in the drilling section..

### **48.6 RESPONSE TO KIA-NIRB-23**

In 2022, Agnico Eagle sourced the drilling water from three sources, namely Patch Lake, Windy Lake and Doris Lake. Depending on the drill location, the water use was reported under either the 2AM-DOH1335 license, the 2BE-HOP1222 license, or the 2BB-MAE1727 license. All water sourced from Patch Lake was reported under the 2BB-MAE1727 license.

## **49. KIA-NIRB-27**

### **49.1 SUBJECT**

Noise abatement - blasting.

### **49.2 REFERENCES**

Section 6.1 Doris North Project Certificate No. 003 – Revised Term and Condition No. 29;

Section 6.2 Madrid-Boston Project Certificate No. 009 – Revised Term and Condition No. 4

Table 8-1

Appendix D-3

### **49.3 SUMMARY**

The Proponent is required to develop and implement a noise abatement plan to protect people and wildlife from mine activity noise, including blasting. The proponent has identified sensitive fish Valued Ecosystem Components including arctic char, lake trout, lake whitefish, and ninespine stickleback and stated the noise abatement plan will consider potential blasting time restrictions with Fisheries and Oceans Canada's (DFO) Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters (Wright and Hopky 1998) as modified by DFO for use in the North.

Table 8-1 also states a blasting monitoring program was developed and implemented that considers potential blasting time restrictions with Fisheries and Oceans Canada's (DFO) Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters (Wright and Hopky 1998) as modified by DFO for use in the North (see Revised Term and Condition 29).

### **49.4 DETAILED REVIEW COMMENT**

Agnico states they do not maintain a standalone Noise Abatement Plan, but for the protection of wildlife, they implement noise management under a wildlife mitigation and monitoring program. The 2022 Wildlife Mitigation and Monitoring Program Compliance Report (Appendix D-3). This report contains noise mitigation and monitoring for blasting only for caribou. No setbacks are discussed regarding fish habitat.

### **49.5 RECOMMENDATION/REQUEST**

Provide a Noise Abatement plan, as per the condition, for fish habitat.

### **49.6 RESPONSE TO KIA-NIRB-27**

Wright and Hopky (1998) has been developed to protect fish that are near or adjacent to "the detonation of explosives in or adjacent to fish habitat". For clarity, it is important to note that Doris North is primarily an underground mine, with blasting occurring primarily to support underground mining and advanced exploration, and only periodically in quarries to support road and surface infrastructure projects. During care and maintenance in 2022, only periodic blasts occurred at the surface in quarries, that are situated greater than 1km from any nearby waterbody.

Agnico Eagle have consulted with DFO on various occasions in the past year and will continue to adhere to best management practices for blasting and blast monitoring to protect wildlife and fish habitat.

## **50. KIA-NIRB-28**

### **50.1 SUBJECT**

Lake levels.

### **50.2 REFERENCES**

Section 6.1 Doris North Project Certificate No. 003 - Revised Term and Condition No. 36 Appendix D-4

### 50.3 SUMMARY

The Proponent is required to continue year-round monitoring and recording of Doris Lake water levels during construction and operations. This information is provided in the 2022 Aquatic Effects Monitoring Program Report (Appendix D-4)..

### 50.4 DETAILED REVIEW COMMENT

While the condition for Doris Lake seems to have been met, Table 3.1-1 of Appendix D-4 presents observed water level fluctuations for several other lakes in the Project area that are higher than baseline maximums. Several potential reasons for these exceedances are provided, including measurement error, incorrect methods, and smaller lakes freezing to or near the bottom. The final fish habitat summary states no detectable Project-related effects occurred to water levels, despite the previously presented water level findings. A statement is made that the open water results should be used (that showed no differences from baseline levels) instead of under ice measurements..

### 50.5 RECOMMENDATION/REQUEST

Provide clarity on why current under ice measurement methods are being used if they are not a useful measure of lake levels, potential use of alternate methods, or elimination of this requirement. If the latter, proof that lake levels are not likely to be affected by the Project would be required..

### 50.6 RESPONSE TO KIA-NIRB-28

While the method of measuring under ice water level using an RTK survey has some limitations, it is likely the most effective method for obtaining under ice measurements in this circumstance. As more surveys have been performed, adapted QA/QC has reduced the occurrence of survey/measurement errors and additional data allows for differentiation between erroneous measurements vs natural variability. Uncertainty around converting water level to volume, the uniformity of ice development, the impacts of snow deposition or removal by wind etc. will apply for all methods of under ice measurement.

However, the current approach of adding the annual fluctuation in water level to the ice thickness, then comparing the value with observed baseline conditions, is flawed and should be replaced by an alternate method. There are two main issues, the main driver of annual water level fluctuations is due to large freshets as opposed to low winter water levels, and the baseline water level monitoring program was seasonal and would have underestimated the total variation in water levels throughout the year.

The years with highest annual fluctuations in water levels are typically wet years with high spring freshet peaks. The years where there is likely greatest risk to fish habitat are dry years with a low freshet where loss of water from the lake would have the greatest impact. The high freshet would result in a potential exceedance of baseline water fluctuations, while the dry year likely would not.

With the exception of Doris Lake, baseline hydrometric monitoring was performed during the open water season. Installation of the pressure transducers requires ice to have retreated from the streams and/or lake shores, and removal must occur prior to freeze up. Depending on the year and/or lake, peak lake level for the year can often occur in the first few days after water starts flowing, and the lowest water level can often occur just prior to freezeup. Because of this, open water season monitoring can easily miss the annual peak and low lake levels, resulting in a bias towards under estimation of annual water level fluctuation. As the current annual monitoring data uses the winter water level surveys combined with the year round monitoring at Doris Lake to estimate year-round data at the other monitored lakes, there is more likely to be a greater annual water fluctuation observed relative to the baseline data presented in the FEIS.

Because of the issues with using annual water level fluctuation, it would be better to use a different criteria to assess impact to fish habitat due to water level reduction in winter. Potential options include water level change from the September fish spawning window to winter, comparison of winter water levels with lowest observed winter water level, or comparison of winter water level relative to the lake outlet elevation (the approximate likely lowest natural water level). All three of these methods suffer from the same main constraint, which is a lack of baseline data. Winter water levels, with the exception of Doris Lake, were not collected prior to 2019. However, development at Madrid North has not reached a point where it will impact water quantity in the surrounding lakes. Data collected to date from lakes and outflows triggered by the Madrid North development are effectively baseline data and could be used to develop new criteria for assessing impact to lakes once development of Madrid North reaches a point where it could potentially impact water quantity in the surrounding lakes.

Agnico Eagle agrees with KIA, believes we have met the conditions of the Project Certificate and can eliminate this monitoring while in care and maintenance. Agnico Eagle proposes to eliminate this monitoring during care and maintenance and prior to the operational re-start of the Madrid underground mine consult with the KIA on monitoring lake levels according to Condition 36.

## **51. KIA-NIRB-29**

### **51.1 SUBJECT**

AEMP.

### **51.2 REFERENCES**

Section 6.2 Madrid-Boston Project Certificate No. 009 – Revised Term and Condition No. 11

Appendix D-4

### **51.3 SUMMARY**

One term or condition for the AEMP is inclusion of details comparing the watershed features from the Aimaokatalok, Windy, and Doris watersheds to the reference watersheds.

### **51.4 DETAILED REVIEW COMMENT**

While many details are provided for the Windy and Doris watersheds, including comparisons with reference watersheds, the Aimaokatalok Watershed is only mentioned once in the AEMP. Aimaokatalok Lake was sampled, but no further information is provided, despite information in Table 8-2 of the Annual Report indicating lake levels and lake outflow were monitored and all were within natural variation..

### **51.5 RECOMMENDATION/REQUEST**

Provide the required information for the Aimaokatalok Watershed in the AEMP to back up statements made in the Annual Report..

### **51.6 RESPONSE TO KIA-NIRB-29**

During 2022, water management at Hope Bay Project Site was in line with the authorized Type A Water

# PROPONENT'S RESPONSE TO COMMENTS RECEIVED ON THE 2021 ANNUAL REPORT

Licence for Doris and Madrid 2AM-DOH1335, the Type B Regional Exploration Licence 2BE-HOP2232, and the Type B Water Licence for Boston 2BB-BOS1727 which does not include an AEMP for sites in the Aimaokatalok Watershed. In 2022, Boston camp operated as an exploration site and no construction at the Boston development had been initiated.

The approved AEMP Plan includes monitoring the Windy, Doris, and Aimaokatalok watersheds based on Project-related activities at each Development. Table 3.1-1 in the Plan (pasted below) details the monitoring triggers for each watershed, including Aimaokatalok Watershed where AEMP monitoring will be initiated by Boston Development construction and operations due to potential indirect Project-related effects (proximity to activity and infrastructure) and direct Project-related effects (permitted discharge).

[from the Hope Bay AEMP Plan] Table 3.1-1. Study Area Descriptions and Monitoring Triggers

Watershed	Study Area	Description	Monitoring Trigger	Reason
Windy Watershed	Windy Lake	Windy hydrological monitoring station	Doris, Madrid North, and Madrid South Construction and Operations	Direct potable water withdrawal (increased accommodation at Doris)
	Glenn Lake	Accessible location near exposed bedrock	Doris, Madrid North, and Madrid South Construction and Operations	Indirect potable water withdrawal; downstream of Windy Lake
Doris Watershed	Wolverine Lake	Deep basin representative of lake and accessible location near exposed bedrock	Madrid South Construction and Operations	Groundwater inflows; Indirect inputs due to proximity
	Patch Lake	Deep area in center of lake representative of lake and accessible location near exposed bedrock	Madrid North and South Construction and Operations	Groundwater inflows; Indirect inputs due to proximity
	Imniagut	Accessible location near exposed bedrock	Madrid North and South Operations	Groundwater inflows
	P.O. Lake	Accessible location near exposed bedrock	Madrid North and South Operations	Groundwater inflows
	Ogama Lake	Accessible location near exposed bedrock	Madrid North and South Operations	Groundwater inflows
	Doris Lake	Deep basin representative of lake and Doris hydrological monitoring station	Doris, Madrid North, and Madrid South Construction and Operations	Direct water withdrawal; groundwater mine inflows; Indirect inputs due to proximity
			Boston Operations	Direct water withdrawal
Doris Watershed (cont'd)	Little Roberts Lake	Accessible location near exposed bedrock	Doris, Madrid North, and Madrid South Construction and Operations	Indirect water withdrawal and mine inflows; downstream of Doris Lake
			Boston Operations	Indirect water withdrawal; downstream of Doris Lake
Aimaokatalok Watershed	Stickleback Lake	Deep basin representative of lake	Boston Construction and Operations	Indirect inputs due to proximity



Watershed	Study Area	Description	Monitoring Trigger	Reason
	Aimaokatalok Lake – Deep (Aim-Deep)	Deep basin representative of lake	Boston Construction and Operations	Indirect inputs due to proximity
	Aimaokatalok Lake – West (Aim-West)	Basin in western Aimaokatalok Lake	Boston Construction and Operations	Permitted discharge
	Aimaokatalok Lake – EEM (Aim-EEM)	MDMER EEM sampling area	Discharge to Aimaokatalok Lake - MDMER	Permitted discharge
Reference	Reference Lake B	Deep basin representative of lake, reference area for AEMP and MDMER EEM programs	Doris, Madrid, and Boston Construction and Operations	Reference area for AEMP and MDMER EEM

## 52. KIA-NIRB-30

### 52.1 SUBJECT

Blasting activities.

### 52.2 REFERENCES

Section 6.2 Madrid-Boston Project Certificate No. 009 – Revised Term and Condition No. 14

### 52.3 SUMMARY

No project-specific thresholds, mitigation and monitoring requirements were developed or sought by the proponent from Fisheries and Oceans Canada for blasting activities in 2022..

### 52.4 DETAILED REVIEW COMMENT

Does the above statement mean no blasting occurred for the Project in 2022, or that no project-specific alterations in current setbacks from fish-bearing waters were not required due to modelled sound being below threshold levels?.

### 52.5 RECOMMENDATION/REQUEST

Provide clarity on the lack of project-specific thresholds, mitigation and monitoring requirements for blasting activities in 2022..

### 52.6 RESPONSE TO KIA-NIRB-30

In response to concerns of the potential impacts of quarry blasting on wildlife a noise monitoring SOP was developed as part of the WMMP Plan (Agnico Eagle 2023). The WMMP states that the primary mitigation for blasting is that no blasting will occur if muskox or caribou are within sight. If caribou or muskox are

present, blasting is delayed until they have left the area. The noise monitoring SOP is intended to further refine the distances at which caribou may be present and have blasting occur, based on modelled levels of noise vibration known to cause disturbance to caribou (described and cited in the SOP). Until noise monitoring is conducted, the default mitigation is that no wildlife are visible prior to blasts, as a conservative measure. The environmental team conducted pre-blasting wildlife surveys for each blast as per the Quarry Management Plan to confirm that no wildlife were visible prior to blasting.

As per the previous response to KIA, DFO guidance cited has been developed to protect fish that are near or adjacent to “the detonation of explosives in or adjacent to fish habitat”. For clarity, it is important to note that Doris North is primarily an underground mine, with blasting occurring primarily to support underground mining and advanced exploration, and only periodically in quarries to support road and surface infrastructure projects. During care and maintenance in 2022, only periodic blasts occurred at the surface in quarries, that are situated greater than 1km from any nearby waterbody.

## **53. KIA-NIRB-31**

### **53.1 SUBJECT**

BOS-8 sampling.

### **53.2 REFERENCES**

Appendix D-5: 2022 Waste Rock and Ore Monitoring Report, Boston Camp

### **53.3 SUMMARY**

Sampling at BOS-8 entails collection of seepage from the camp pad and ore stockpile. The identifier BOS-8 includes sampling completed at four separate locations, labelled BOS-8A through BOS-8D. In 2022, samples were only collected at BOS-8A and BOS-AD, and data presentation does not differentiate between the two when discussing the potential for temporal trends.

### **53.4 DETAILED REVIEW COMMENT**

Sampling at BOS-8 entails collection of seepage from the camp pad and ore stockpile. The identifier “BOS-8” includes four separate sampling locations, labelled BOS-8A through BOS-8D, of which only BOS-8A and BOS-8D were sampled in 2022. No discussion was included as to why BOS-8B and BOS 8C were not sampled.

Section 4.2.3 describes data from BOS-8A and BOS-8D by comparing between the two stations and in relation to the historical dataset collected between 2008 and 2021. However, chemical differences between these two stations may exist such that comparison to all seepages at BOS-8 may not be appropriate. Further, the graphical presentation of the chemical trends (Figures 4-1 to 4-7) does not differentiate between sampling locations and uses a single symbol for the (collective) BOS-8 station. It is possible that seepage chemistry may differ between sampling locations whereby presentation of station-specific chemistry with time would provide a better visualization of the potential for temporal trends..

## **53.5 RECOMMENDATION/REQUEST**

KIA requests:

- A description as to why samples were not collected at BOS-8B and BOS 8C in 2022.
- Chemical time-series graphs should use symbols/identifiers to allow the reader to assess trends on a station by-station basis. For the data presented in Figures 4-1 to 4-7 of Appendix D-5, a description of the potential presence/absence of station-specific trends from the BOS-8 dataset should be provided.

## **53.6 RESPONSE TO KIA-NIRB-23**

Agnico Eagle appreciates the thoroughness of the review by the KIA. In the next reporting cycle, we will consider the recommendations regarding the time-series graphs to improve the reviewers readability.

# **54. KIA-NIRB-32**

## **54.1 SUBJECT**

Ephemeral Streams.

## **54.2 REFERENCES**

Appendix D-5: 2022 Waste Rock and Ore Monitoring Report, Boston Camp

## **54.3 SUMMARY**

Samples collected from ephemeral streams are analyzed for dissolved metals (only) and results are compared to predictions from the 2009 water and load balance for Boston Camp (SRK Consulting (Canada) Inc. [SRK], July 2009) to assess the potential for impacts to Aimaokatalok Lake. This approach may underestimate the potential impacts of ephemeral drainages discharging to the nearby shoreline.

## **54.4 DETAILED REVIEW COMMENT**

Samples collected from ephemeral streams are analyzed for dissolved metals and assessment for impacts are based on comparison to predictions from the 2009 water and load balance for Boston Camp (SRK, July 2009). The text does not discuss the rationale for the comparison of dissolved metals (instead of total metals) to the 2009 model predictions, which may be attributed to the development of geochemical source terms from laboratory test results that were provided for dissolved metals only. As total metal concentrations are generally similar or higher than dissolved concentrations, a comparison to total concentrations would be a better approach to assess environmental effects.

## **54.5 RECOMMENDATION/REQUEST**

KIA recommends total metals to be analyzed from ephemeral streams in addition to dissolved metals as most surface water quality aquatic life guidelines are provided for total metals values.

KIA requests a description of the relevance of comparing 2009 model predictions of dissolved metals to measured dissolved (and not total) metals to assessing potential impacts to Aimaokatalok Lake from the camp pad.

#### **54.6 RESPONSE TO KIA-NIRB-23**

We will discuss this with the KIA in the future, but believe that our current approach to monitoring meet the license requirements and are sufficient at Boston, especially under care and maintenance. For the ephemeral stream sampling program, the data are presented and discussed in detail in Section 5.2.3: 2022 Waste Rock and Ore Monitoring Report, Boston Camp Monitoring Requirements FINAL and a discussion of concentration trends are also in that section of the report.

### **55. KIA-NIRB-33**

#### **55.1 SUBJECT**

Ephemeral Streams.

#### **55.2 REFERENCES**

Appendix D-5: 2022 Waste Rock and Ore Monitoring Report, Boston Camp

#### **55.3 SUMMARY**

Comparison of ephemeral stream chemistry to 2009 flow and load balance model predictions incorrectly states that no values are greater than predictions. The dissolved copper concentration from Station B2 (0.0023 mg/L) is higher than the average and maximum predicted dissolved copper value (of 0.002 mg/L).

#### **55.4 DETAILED REVIEW COMMENT**

Samples collected from ephemeral streams are analyzed for dissolved metals and assessment for impacts are based on comparison to predictions from the 2009 water and load balance for Boston Camp (SRK, July 2009). These results are shown in Table 5.4, whereby the dissolved copper concentration at Station B2 (0.0023 mg/L) is higher than the average and maximum predicted dissolved copper value (of 0.002 mg/L). Therefore, the statement in Section 5.2.4 of "All concentrations at all locations were within the range of predicted values." does not accurately reflect the data presented.

#### **55.5 RECOMMENDATION/REQUEST**

KIA requests:

- The statement in Section 5.2.4 that "All concentrations at all locations where within the range of predicted values," be revised if the presented dissolved copper value for Station B2 is accurate. If that value is not accurate, Table 5.4 should be updated.
- Comment as to why 2009 model predictions for average and maximum dissolved copper concentrations at Station B2 are the same value (as shown in Table 5.4).

## **55.6 RESPONSE TO KIA-NIRB-23**

We appreciate the thoroughness of the KIA review. As per the previous response, we will discuss this with the KIA in the future, but believe that our current approach to monitoring, modeling meet the license requirements and are sufficient at Boston, especially under care and maintenance. For the ephemeral stream sampling program, the data are presented and discussed in detail in Section 5.2.3: 2022 Waste Rock and Ore Monitoring Report, Boston Camp Monitoring Requirements\_ FINAL and a discussion of concentration trends are also in that section of the report.

## **56. KIA-NIRB-34**

### **56.1 SUBJECT**

Madrid portal saline seepage.

### **56.2 REFERENCES**

Appendix E – 2022 Inuit Environmental Advisory Committee Meetings

### **56.3 SUMMARY**

The Inuit Environmental Advisory Committee (IEAC) raised questions and concerns that the saline seepage from the Madrid portal may be contaminated and may migrate towards Windy Lake. The response provided to the IEAC as part of those meetings was not wholly correct.

### **56.4 DETAILED REVIEW COMMENT**

Section 2.5 of the appendix describes the Madrid developments that were presented to the IEAC, which included the area outside of the existing Madrid portal and included seepage/water that damaged the surrounding flora. The IEAC had concerns about contaminated water and whether it could migrate towards Windy Lake. The authors commented that water testing indicated seepage “no longer has the high salt contents” and “water quality in Windy Lake does not show any sign of contamination”. The IEAC concern is also denoted as an Action Item in Section 2.5, whereby “water quality treatment results for the seepage monitoring, along with a memo on the existing Madrid portal site remediation” would be provided.

While BGC agrees with the proposed Action Item, it is not clear what water testing the response referred to and, in reviewing seepage survey results provided in Appendix D-2: 2022 Waste Rock, Quarry and Tailings Monitoring Report, Doris and Madrid Mines, Hope Bay Project, a single sample (22 MAD 03) was collected near the Madrid portal (Figure 9-7) and proximal to the interpreted area of the damaged tundra. Results from that sample showed elevated chloride (310 mg/L), which was “notably higher...compared to the other seepage stations (maximum 65 mg/L)” (see Section 9.2.6 of Appendix D 2 - 2022 Waste Rock, Quarry and Tailings Monitoring Report, Doris and Madrid Mines, Hope Bay Project). As well, the same section describes the chemistry at 22-MAD-03 as having the “highest ammonia (3.1 mg/L)” and “notably high” concentrations of several dissolved metals (e.g., As, Co, Fe, Mn, Ni, Se, and Zn). Therefore, these results suggest the comment made to the IEAC may not have been wholly accurate or considering 2022 sample results.

Furthermore, while sampling at Windy Lake does not show signs of contamination, the location of that sample is several kilometers north of the discharge location from the Madrid portal (see Figure 2.1-1 in Appendix D 4: 2022 Aquatic Effects Monitoring Report). Therefore, it may not be appropriate to use Windy Lake sample data to support the statement the lake chemistry has not been influenced by saline drainage from the Madrid portal area.

## **56.5 RECOMMENDATION/REQUEST**

KIA requests further comment on:

- The seepage data used to support their statement to the IEAC regarding lower salt contents.
- What data from Windy Lake was used to support their statement made to the IEAC that no contamination signs were noted at Windy Lake.
- KIA recommends the monitoring network for Windy Lake should be reviewed to assess if additional stations could be included to improve the assessment/monitoring of potential impacts from discharge/drainage from the Madrid North portal area..

## **56.6 RESPONSE TO KIA-NIRB-23**

Agnico appreciates the input from KIA regarding Windy Lake and will provide clarity to the IEAC. An update on monitoring and plans for assessing impacts due to historical drainage and discharge from Madrid North Portal will be provided in subsequent annual reports.

# **57. KIA-NIRB-35**

## **57.1 SUBJECT**

Saline Water Storage in Doris TIA.

## **57.2 REFERENCES**

OM&S Manual: Hope Bay Doris Tailings Impoundment Area – Revision 6 (AEM, March 2023c).

## **57.3 SUMMARY**

- A temporary storage facility for saline mine water is being constructed within the footprint of the Doris TIA to help water management within the TIA during the Care and Maintenance period. The facility was first constructed using an Aqua Dam and is now in the process of being replaced by an Interim Dike.
- The reference document notes on pg. 33; 'If saline water (such as from the underground) is deposited into the TIA then this should be preferential deposited towards the centre of the facility (i.e., away from the South Dam crest and upstream of the primary North Dam pond).
- The reference document also notes on page 38 that the Aqua Dam and Interim Dike are not classified as dams, as they are located entirely within the footprint of the existing TIA, and any loss of containment of the structures would pose no safety or environmental risk..

## 57.4 DETAILED REVIEW COMMENT

There is no reference within the Doris TIA on the operational controls for the Aqua Dam or Interim Dike. For instance, there is no guidance on maximum water level to be retained by the Aqua Dam or Interim Dike, nor is there guidance on minimum beach length upstream of the South Dam. Additionally, while the reference document notes loss of containment of the Interim Dike would pose no safety or environmental risk, it may have an impact on the water level of the main reclaim pond retained by the North Dam. .

## 57.5 RECOMMENDATION/REQUEST

KIA requests further comment on:

- Does the operation of the Interim Dike for the temporary storage of saline mine water comply with the guidance in the OM&S manual to deposit such water in the centre of the facility?
- What is the maximum water level upstream of the Interim Dike and what is the corresponding minimum beach length upstream of the South Dam?
- What would be the impact of a loss of containment of the Interim Dike under the maximum retained water level on the water level of the Reclaim pond? Are there any modifications to the FSL of the North Dam required while the Interim Dike is retaining water?
- Should any of the information request above be included within the OM&S manual?.

## 57.6 RESPONSE TO KIA-NIRB-35

Below are responses to KIA requests:

- Does the operation of the Interim Dike for the temporary storage of saline mine water comply with the guidance in the OM&S manual to deposit such water in the centre of the facility?

Yes, the operation of the Interim Dike currently complies with the guidance on page 33 of the Doris TIA OMS Manual. The current outlet location from saline mine water is greater than 600 metres from the upstream crest of the South Dam. The current outlet location has been reviewed by the Engineer of Record and Design Engineer for the Doris TIA, and is not expected to impact the thermal performance of the South Dam foundation.

- What is the maximum water level upstream of the Interim Dike and what is the corresponding minimum beach length upstream of the South Dam?

The maximum water level upstream of the Interim Dike is 34.5 masl. This elevation is controlled passively by a spillway structure at the east abutment of the interim dike with an invert elevation of 34.5 masl. A maximum water elevation of 34.5 masl corresponds to a minimum beach length of 100 m, which complies with guidelines from the OMS manual.

AEM monitors the condition of the spillway (particularly the inlet location) during regular inspections of the Interim Dike. In the unlikely event of a spillway blockage, water in the Interim Dike can be managed actively via pumping to the TIA reclaim pond. This active management was used during the construction of the Interim Dike, prior to the completion of the spillway, and was found to be an effective way of controlling the water level impounded by the dike.

• What would be the impact of a loss of containment of the Interim Dike under the maximum retained water level on the water level of the Reclaim pond? Are there any modifications to the FSL of the North Dam required while the Interim Dike is retaining water?

The maximum water level in the Interim Dike of 34.5 masl (spillway invert) is below the maximum water level of the TIA water reclaim pond (35.0 masl, assumed to be at the elevation of the top of the geosynthetic clay liner of the North Dam). As such, in the event that the water in the TIA reclaim pond has reached the maximum retained water level, the Interim Dike would already be overtopped.

In the event that the TIA reclaim pond is at the maximum operating water level (Green TARP level) of 34.0 masl, and the Interim Dike is also retaining water at its maximum water elevation of 34.5 masl, a loss of containment would incrementally increase the water level in the TIA reclaim pond. The volume of released water from the Interim Dike in this scenario would be a maximum of 117,000 m<sup>3</sup>, corresponding to a increase in TIA reclaim pond elevation of less than 0.15 m. This would place the TIA reclaim pond in the Yellow TARP condition (el. 34.0 to 34.5 masl), triggering an increase in monitoring of the water level.

The Water Elevation Trigger Action Response Plans (TARPs) for the TIA were updated by AEM in summer 2023, and will be included in the next revision of the TIA OMS Manual, which will be submitted with the 2023 Hope Bay Annual Report. The 2023 updated TIA Water Elevation TARPs levels considered the Interim Dike. And the updated TARPs were reviewed by the Engineer of Record, the Design Engineer and the Hope Bay Independent Review Board.

• Should any of the information request above be included within the OM&S manual?

This information and related information regarding the operation of the Interim Dike will be included in the next revision of the TIA OMS Manual, which will be submitted with the 2023 Hope Bay Annual Report, due to the NWB in 2024.

## 58. KIA-NIRB-36

### 58.1 SUBJECT

Percent of Inuit employees.

### 58.2 REFERENCES

Project Certificate Term and Condition no. 39

Hope Bay 2021 Socio-economic Monitoring Report

### 58.3 SUMMARY

Term and Condition no 39: "The Proponent, reflecting input from the Hope Bay Socio-Economic Working Group and the Kitikmeot Socio-economic Monitoring Committee, should include in its annual Hope Bay Socio-Economic Monitoring Plan report levels of Inuit employment at the Project as well as barriers and opportunities to achieving the high levels of employment described on page 2-137 of the Madrid Boston Project Final Environmental Impact Statement."

Agnico Eagle reports:



“there were 3 Kitikmeot Inuit in the Cambridge Bay Office and another 9 Inuit from elsewhere working at the Project. Inuit workforce represented 3% of total workforce in 2021” (page 5)

“Kitikmeot Inuit represented 1% of the workforce in 2021 while Inuit from elsewhere represented 2%” (page 54)

“in 2018 and 2019 workforce effort by Inuit was 10%” (during operations) (page 54) bracketed text added .

#### **58.4 DETAILED REVIEW COMMENT**

Although the FEIS recognizes that Inuit employment would drop during temporary closure, compared to operation, the FEIS predicts that the mine will reach the high Inuit hiring scenario of 30% during operations.

We note that even during operations in 2018 and 2019 the mine fell well short of the predicted Inuit hiring scenario and dropped severely in 2021.

The barriers are noted as: limited access to appropriate housing, health services, childcare, postsecondary education, costly travel for training, the ability to take and pass trades entrance exams, passing pre-employment requirements such as medical testing and criminal record checks, and the fly in-fly-out rotational work schedule. (Page 57)

Although Agnico Eagle indicates that it is engaging with KIA, the SEMWG and the Kitikmeot SEMC to collectively address these barriers, and supports the Kitikmeot Inuit Workforce Readiness and Success Initiative, opportunities to address the specific barriers are not identified .

#### **58.5 RECOMMENDATION/REQUEST**

KIA seeks more information specific opportunities that Agnico Eagle has identified in consultation with its partners to address the barriers to prepare itself to achieve the high hiring scenario predicted for the operations phase..

#### **58.6 RESPONSE TO KIA-NIRB-36**

Please refer to the 2022 Socio-Economic Monitoring Program (SEMP) Report for most recent data and information. The 2022 SEMP Report states that “In 2022, the Project hired up to 46 Kitikmeot Inuit (11% of total workforce) and up to 10 Inuit (2% of total workforce) from outside the region” (Section, 5.2.2, Page 5-4). In addition to this new employment, Agnico Eagle made efforts to transition two Inuit employees from operation specific roles to care and maintenance, and two other Inuit were redeployed from Hope Bay to other Agnico Eagle projects. While Project employment of Inuit increased in 2022, workforce effort remained limited with the placement of the Project under care and maintenance on February 18, 2022.

Inuit workforce effort in 2020 and 2021 were severely affected by the COVID-19 pandemic challenges and reduced operations at the Project. An isolation policy precluded Inuit workers from Kitikmeot communities to travel or work on site to prevent the spread of COVID-19; this policy applied to both – direct Project workers and contractors' employees. These unusual circumstances made it impossible to meet Inuit hiring targets in those years.

Limited operations, pandemic induced challenges, and the change of Project ownership from TMAC to Agnico Eagle effective February 2, 2021, made it challenging to organize and coordinate meetings with the Hope Bay Socio-Economic Working Group (SEMWG) and the Kitikmeot Socio-economic Monitoring Committee (SEMC). This hindered the collection of input from these groups on various topics, including the

implementation of potential opportunities by Agnico Eagle to address barriers to employment and increasing Inuit participation in Project roles. SEMWG and SEMC meetings are in plans for fall 2023 to review the 2022 SEMP Report and to provide an opportunity to collect feedback and input from participants. This feedback and input, including identified opportunities to reduce barriers to employment for Kitikmeot Inuit, will be included, to the extent possible, in the future iterations of the SEMP Report.

Further, many barriers to Inuit employment listed above (Section 58.4) and in the 2022 SEMP Report are difficult for Agnico Eagle to correct as they fall under the responsibility of the public sector (e.g., housing, health services, childcare and education) or are longstanding and intergenerational. After the transition of the Project from TMAC to Agnico Eagle, passing pre-employment requirements such as medical testing and criminal record checks were removed and are no longer listed as barriers in the 2022 SEMP Report. However, these remaining complex barriers to employment, in addition to reasons that drive higher turnover for Inuit employees (e.g., not liking the job or camp life and missing family, mentioned in Section 5.5.2 of the SEMP Report, Page 5-12) make it challenging for Agnico Eagle to hire and retain more Inuit to meet Inuit employment targets. The 2022 SEMP Report notes many commitments that Agnico Eagle is undertaking such as participating in regional initiatives including Supporting Kitikmeot Inuit Workforce Readiness and Success in the Major Projects Sector, and Kitikmeot Inuit Workforce Readiness and Success initiative. These efforts have been initiated by Kitikmeot Corporation, the wholly owned birthright corporation of the Kitikmeot Inuit Association (KIA) and owner of all major subcontractor subsidiaries contractors at Hope Bay to support the development of the Kitikmeot labour force and increase Inuit participation in Project roles.

Once the Project resumes operations, the Implementation Committee (IC) of the IIBA will set new annual Inuit Employment Targets (IET); setting IET and other IIBA obligations is not required during care and maintenance. These IETs could be set at, below or above the predictions made in the FEIS, depending on the considered factors such as the scale of Project operations and economic conditions. Agnico Eagle will work with the SEMWG, SEMC and KIA to achieve those targets and maximize employment benefits to Inuit.

## **59. KIA-NIRB-37**

### **59.1 SUBJECT**

Percent of Inuit employees.

### **59.2 REFERENCES**

Project Certificate Term and Condition no. 39

Hope Bay 2021 Socio-economic Monitoring Report

### **59.3 SUMMARY**

Term and Condition no 39: "The Proponent, reflecting input from the Hope Bay Socio-Economic Working Group and the Kitikmeot Socio-economic Monitoring Committee, should include in its annual Hope Bay Socio-Economic Monitoring Plan report levels of Inuit employment at the Project as well as barriers and

opportunities to achieving the high levels of employment described on page 2-137 of the Madrid Boston Project Final Environmental Impact Statement.”

Agnico Eagle reports:

“Agnico Eagle is committed to ...recognizing Inuit skills and experiences equivalencies where appropriate... implementing employment policies to engage Inuit who do not have the education normally required for work at the Project, and employing Inuit college and university students as summer students” (page 56).

#### **59.4 DETAILED REVIEW COMMENT**

These IIBA commitments are very important to KIA. The report includes no tangible results from these commitments..

#### **59.5 RECOMMENDATION/REQUEST**

KIA asks Agnico Eagle to report: 1) data for how it has recognized Inuit skills equivalencies, 2) employment policies to engage Inuit who do not have the education normally required for work at the Project and 3) data on how many Inuit summer students are hired.

#### **59.6 RESPONSE TO KIA-NIRB-37**

Please refer to the 2022 Socio-Economic Monitoring Program (SEMP) Report for most recent data and information. The 2022 SEMP Report states that “As affirmed by the IIBA, Agnico Eagle is committed to maximizing Inuit employment. Broadly, these commitments include priority to Inuit candidates when Inuit and non-Inuit candidates have similar skills, recognizing Inuit skills and experience equivalencies where appropriate, identifying jobs where formal educational requirements can be adjusted, hiring of Nunavut Inuit living in the Kitikmeot region before other groups, implementing employment policies to engage Inuit who do not have the education normally required for work at the Project, and employing Inuit college and university students as summer students” (Section 5.2.3, Page 5-7). These commitments are applied during the hiring process for the Hope Bay Project, however, there is no specific process for tracking how many Inuit were identified to have the same skills as non-Inuit and thus hired for the Project. Employment numbers and employment trends for Inuit, by gender, and by skill and department are however reported in the 2022 SEMP Report. The Hope Bay Project and subcontractors working for the Hope Bay Project offer entry level and unskilled positions that require no previous work experience or Project-specific education. Community Information Sessions, High School Information Sessions, Career Awareness Sessions, Career Awareness Presentations, and site visits are common tools used by the Hope Bay Project to engage Inuit from Kitikmeot communities to communicate job opportunities, employment requirements and to provide other Project specific information. Regretfully, these activities did not take place in 2020, 2021 or 2022, first due to COVID-19 related challenges, and then as the Project was placed under care and maintenance on February 18, 2022. Once the Project resumes operations, Agnico Eagle will work to identify additional opportunities to engage Inuit who do not have the education normally required for work at the Project.

Finally, summer student employment has yet to be made available at the Project. Agnico Eagle has successfully hired summer students at its other projects (e.g., in 2022, eight summer students were employed by the Kivalliq projects) and similar initiatives will be undertaken at Hope Bay Project once the Project resumes operations. It is also important to note that return to work following Covid only took place at the end of June 2022, making it difficult to staff summer or student jobs mid-summer.

As an example, recruitment for some positions is only for Inuit. Non-Inuit are not considered for filling those jobs (ex.: Environment Assistant and Core Helper).

## 60. KIA-NIRB-38

### 60.1 SUBJECT

Obstacles for Inuit employees – women employees.

### 60.2 REFERENCES

Hope Bay 2021 Socio-economic Monitoring Report

### 60.3 SUMMARY

Agnico Eagle reports:

“in 2021, women worked 88,246 hours representing 10% of total effort at the Project...and that pandemic site isolation has disproportionately affected [Inuit women].only 5 Inuit women continued to work for the Project due to Covid-19 isolation” (page 57, 58)

“ pre-employment raining with dedicated spots for female participation. The pre-employment training informs women on the availability of employment opportunities, provides career counselling, job search help, and employment skills workshops” (page 58)

“ensures that each new employee...has the right demeanour towards other co-workers and values Agnico’s culture of respect and inclusivity” (page 58)

“Enrollment in Northern Arctic College (NAC) is dominated by female students, with 81% of the total 744 students in 2019/2020 being female”. (page 72).

### 60.4 DETAILED REVIEW COMMENT

KIA notes that only 5 Inuit women worked at the Project in 2021. KIA also notes 81 % of enrollment at NAC are female. This means that more females are eligible to work at the Project and increase the female work force..

### 60.5 RECOMMENDATION/REQUEST

KIA would like to see continued dedicated spots for women in pre-employment training.

### 60.6 RESPONSE TO KIA-NIRB-38

Please refer to the 2022 Socio-Economic Monitoring Program (SEMP) Report for most recent data and information. The 2022 SEMP Report states that “In 2022, under care and maintenance, workforce effort by women reached 13% of the total effort at the Project” (Section 5.3.2, Page 5-8). Workforce effort by Inuit women represented 1% of total effort. While there are no specific IIBA IC targets for the employment of women at the Project (IC targets are also not set during care and maintenance activities), the Project has practices in place, including pre-employment training, to encourage the employment and retention of women. As noted in the 2022 SEMP Report these practises include:

"Agnico Eagle supports pre-employment training, administered by the KIA, with dedicated spots for female participation. The pre-employment training informs women on the availability of employment opportunities, provides career counselling, job search help, and employment skills workshops. The purpose is to increase the skills, experience, and exposure of prospective female workers to help them prepare for and obtain jobs in mining. Agnico Eagle also maintains a strong commitment to a safe and respectful culture at the Project. Through various programs and practices, as well as the provision of regular training, education and monitoring, Agnico Eagle works to make women feel safe and respected in the workplace to increase the retention of women in various roles at the Project. When hiring, Agnico Eagle ensures that each new employee, in addition to the required skills, has the right demeanour towards other coworkers and values Agnico Eagle culture of respect and inclusivity. "

Agnico Eagle is committed to employment equity and increasing the share of women in the workforce. With the return to operations, Agnico Eagle will be looking to implement additional practices to increase Inuit women employment at the Hope Bay Project, mirroring some of those implemented at the Kivalliq Projects.

Agnico Eagle offers further clarification to the KIA that NAC program offerings are often not suitable or applicable for mine related employment. NAC does not offer specific mine related training. NAC has committed to building and operating a mine training center in Rankin Inlet, however construction of this facility has yet to begin. AEM is committed to financially support NAC in building this mine education center. Until that time, regardless of how many women are enrolled in NAC programming, there are limits to how many trained Inuit women are available for employment.

## **61. KIA-NIRB-39**

### **61.1 SUBJECT**

Obstacles for Inuit Employment – turn-over.

### **61.2 REFERENCES**

Project Certificate Term and Condition no. 39

Hope Bay 2021 Socio-economic Monitoring Report

### **61.3 SUMMARY**

Term and Condition no 39: "The Proponent, reflecting input from the Hope Bay Socio-Economic Working Group and the Kitikmeot Socio-economic Monitoring Committee, should include in its annual Hope Bay Socio-Economic Monitoring Plan report levels of Inuit employment at the Project as well as barriers and opportunities to achieving the high levels of employment described on page 2-137 of the Madrid Boston Project Final Environmental Impact Statement."

Agnico Eagle reports:

Turnover rate for Inuit employees is higher than for non-Inuit employees. Turnover rate of all employees varied from 17%- 35% in the last 5 years at the Project, while for Inuit employees it varied from 29% to 105% (page 61).

## 61.4 DETAILED REVIEW COMMENT

KIA is concerned with the higher turn-over rate for Inuit employees.

KIA notes that Agnico identifies programs and measures that help to reduce employee turn-over rate at page 61..

## 61.5 RECOMMENDATION/REQUEST

KIA seeks information on the reasons for Inuit employees leaving the Project. Are they given exit interviews? What data is collected? How is Agnico Eagle addressing Inuit employment barriers that are identified in the interviews?

How many Inuit employees are taking up each of the measures and programs listed?.

## 61.6 RESPONSE TO KIA-NIRB-39

Please refer to the 2022 Socio-Economic Monitoring Program (SEMP) Report for most recent data and information. The 2022 SEMP Report states that “The overall turnover rate for permanent employees increased from 24% in 2021 to 29% in 2022, while the turnover rate for Inuit employees decreased from 29% to 18%. Of the 29% turnover in 2022 for all permanent employees, voluntary turnover was 15%. Terminations resulted from company reorganization and shortage of work related to the placement of the Project under care and maintenance; other reasons included end of contract, finding another job, not liking current job, behaviour or poor performance, and individual wellbeing (e.g., missing family and disability)” (Section 5.5.2, Page 5-12). The 2022 SEMP Report further notes that “Challenges in employee retention in the mining industry are not uncommon for remote camps with rotational schedules and are often attributed to the remoteness of the mine and the need of long commute, as well as emotional stress resulting from being away from family and friends” (Section 5.5.3, Page 5-13). Agnico Eagle collects data and information on the reasons behind this turnover. Sections 5.10.2 on Page 5-22 and Section 9.1.2 on Page 9-1 and 9-2 of the 2022 SEMP Report provide additional information on the reasons for terminations or voluntary leave for Inuit employees, collected during exit interviews or through other means.

The programs and measures, including Employee and Family Assistance Program (EFAP), to reduce employee turnover include (Section 5.5.3, Page 5-13):

- developing career plans for each employee;
- monitoring compensation rates and offering competitive compensation to retain workers;
- providing HR services on-site;
- providing a competitive medical benefit program;
- engaging with workers when off-shift/off-site;
- maintaining frequent and effective communications with employees to continue implementation of measures to retain workers in their roles;
- providing support for social activities while on-site to engage workers after hours;
- providing IIBA training and a deeper understanding of the operating business; and
- providing cultural support and cultural orientation undertaken by all staff and offered on continuous basis.

While programs are available to all direct Project employees, Agnico Eagle does not record statistics on how often or how many times these various HR programs or measures are utilized by Inuit employees. For confidentiality reasons and since the EFAP is managed by external providers, Agnico Eagle does not have

access to specific statistics as of genre, ethnicity, reasons for calling, number of used of the program for each employees, etc.

Collection of statistics on EFAP use was not possible in 2022 because EFAP was available for all Hope Bay workers under the general Organization Support program. The 2022 SEMP Report also notes that “Agnico Eagle is working to develop and implement a site-specific assistance program [EFAP] for Hope Bay employees that will allow for easier tracking of program use that may provide further insights into the ability of Inuit employees to maintain work-life balance and retain roles at the Projects. Agnico Eagle is planning to use this additional insight to implement additional measures and further reduce turnover rates for Inuit employees.

It is also important to consider the specific employment context at Hope Bay in relation to the Care and Maintenance phase and have the company offering seasonal or temporary jobs. The turnover results and effects should be considered and compared to a permanent job offer context.

## **62. KIA-NIRB-40**

### **62.1 SUBJECT**

Obstacles for Inuit Employment - training.

### **62.2 REFERENCES**

Project Certificate Term and Condition no. 39

Hope Bay 2021 Socio-economic Monitoring Report

### **62.3 SUMMARY**

Term and Condition no 39: “The Proponent, reflecting input from the Hope Bay Socio-Economic Working Group and the Kitikmeot Socio-economic Monitoring Committee, should include in its annual Hope Bay Socio-Economic Monitoring Plan report levels of Inuit employment at the Project as well as barriers and opportunities to achieving the high levels of employment described on page 2-137 of the Madrid Boston Project Final Environmental Impact Statement.”

Agnico Eagle reports:

In 2021, 120 hours of training was delivered to Inuit employees (representing 1.7% of the total effort). Training included rigging, rimpull mine rescue, haul truck, bear awareness and cat skidsteer. (Page 64)

Inuit are underrepresented in professional and management positions. Agnico is committed to encouraging Inuit to advance to managerial positions through training and skills development and encouraging Inuit to achieve the education and qualifications needed for employment and advancement at the Project. (Page 68).

### **62.4 DETAILED REVIEW COMMENT**

KIA is concerned with the very low amount of training for Inuit employees.

KIA is also concerned that there was no professional and management related training, even though Agnico states that its commitment to training and skills development to advance Inuit to managerial positions.

## 62.5 RECOMMENDATION/REQUEST

KIA is recommending more training for Inuit employees and in particular for professional and management related opportunities.

What is Agnico Eagle doing to meet its stated commitment to train Inuit for managerial positions? How much resources are being directed to this program?.

## 62.6 RESPONSE TO KIA-NIRB-40

Please refer to the 2022 Socio-Economic Monitoring Program (SEMP) Report for most recent data and information. The 2022 SEMP Report states that "In 2022, despite the placement of the Project under care and maintenance, 13,193 hours of training were delivered to Project employees, including 2,294 hours of training delivered to Inuit employees (which represented 17% of total training)" (Section 5.7.3, Page 5-17).

Training delivered to Inuit employees in 2022 included the following:

Ten Inuit cutters received a training of 84 hours each (spread over their first rotation) covering training for all SOP's related to core cutting, QAQC, operation of the saw (companioning experience cutter), movement of core box, etc. Additionally, one Inuit was transitioned to a core technician role and received an additional training of 84 hours on core tecking, X-ray fluorescence (XRF), rock quality designation (RQD), quality log (QL) movement, Skid Steer operation, Ice profiling, Drill inspection	924 hours
Site operation	338 hours
"Organic Growth" Training program	756 hours
Housekeeping	168 hours
Underground induction and haul truck refresher	108 hours

Additional training was delivered to Inuit employees employed by Project contractors, this included job shadowing and job-specific training, however, these numbers are not tracked.

Training for managerial positions encompasses the various types of training provided by the Project such as on-the-job, job specific, health and safety and other training, but may also require post-secondary education and long-term experience in a related role. Agnico Eagle will work with the SEMWG, SEMC and KIA to identify additional steps and discuss the Care and Maintenance effects on different type of training (managerial job opportunities are severely restricted due to the contraction of Hope Bay workforce).



## **Appendix - Attachments**

**Q1-Q3 2022 ATMOSPHERIC COMPLIANCE MONITORING PROGRAM REPORT  
ADDENDUM - NO2 MONITORING REPORT**

**COMPOSTER SPECIFICATIONS**



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**VIA E-MAIL - [ryan.vanengen@agnicoeagle.com](mailto:ryan.vanengen@agnicoeagle.com)**

August 14, 2023  
File No.: 160930542

Ryan Vanengen  
Agnico Eagle Mines Limited  
Toronto, Ontario

**Attention: Mr. Ryan Vanengen**

Dear Ryan Vanengen:

**Reference: Q1-Q3 2022 Atmospheric Compliance Monitoring Program Report Addendum**

## **1 INTRODUCTION**

This addendum to the report Q1-Q3 2022 Atmospheric Compliance Monitoring Program Report Doris and Madrid Projects (Nunami Stantec, 2023) presents the results of ambient air quality monitoring for nitrogen dioxide (NO<sub>2</sub>) conducted by Agnico Eagle Mines Limited (Agnico Eagle) at the Doris Project (the Site) from October 2021 to September 2022.

Agnico Eagle commissioned a new continuous monitor measuring NO<sub>2</sub> at monitoring location DFA1 at the Doris site in October 2021. Ambient NO<sub>2</sub> is measured using a Thermo Scientific 42qi continuous NO<sub>x</sub> monitor following the protocol described in the 2019 version of the Agnico Eagle AQMP (TMAC, 2019). The NO<sub>2</sub> monitor is housed inside the same temperature-controlled shelter as two continuous particulate monitors to ensure the monitors are maintained within their required operating temperature range.

The instrument is calibrated and maintained following Environment and Climate Change Canada (ECCC) protocols given in the document National Air Pollution Surveillance Network Quality Assurance and Quality Control Guidelines (ECCC 2004). Calibration data is provided in Appendix A.

## **2 NO<sub>2</sub> AIR QUALITY STANDARDS AND DISPERSION MODEL PREDICTIONS**

Ambient air quality Standards, Objectives and Guidelines (SOGs) have been developed by the Canadian federal government and Government of Nunavut (GN) for ambient NO<sub>2</sub>, which are summarized in Table 1. Also presented in Table 1 are the NO<sub>2</sub> dispersion modelling results (at the location of DFA1) from the Final Environmental Impact Statement (FEIS) for the Madrid-Boston Project (Nunami-Stantec, 2017). Activities at the Doris Site in Q1-Q3 2022 most closely correspond to the operations phase air quality modelling presented in the Madrid-Boston Project FEIS.

Reference: Q1-Q3 2022 Atmospheric Compliance Monitoring Program Report Addendum

**Table 1 Ambient NO<sub>2</sub> Air Quality Standards, Objectives and Guidelines Compared to 2017 FEIS Predictions**

Contaminant	Units	Averaging Period	Nunavut Ambient Air Quality Guidelines <sup>a</sup>	Guidelines or Standards from Other Government Agencies		Maximum 2017 FEIS Predictions at the Monitoring Site	
				Value	Agency	Doris	Madrid
Nitrogen Dioxide	µg/m <sup>3</sup> (ppb)	1-hour	400 (212)	113 (60) <sup>b</sup>	CAAQS <sup>d</sup>	253 (134)	-
	µg/m <sup>3</sup> (ppb)	24-hour	200 (106)	-	-	174 (92)	-
	µg/m <sup>3</sup> (ppb)	Annual	60 (32)	23 (12) <sup>c</sup>	CAAQS <sup>d</sup>	65.4 (34.6)	-

NOTES:

Dash (-) = not applicable

- Reference: Government of Nunavut 2011.
- The 1-hour NO<sub>2</sub> value is calculated from the 3-year average of the 98<sup>th</sup> percentile of the daily maximum 1-hour average concentrations over a calendar year.
- The annual NO<sub>2</sub> value is calculated from the average of all 1-hour average concentrations over a single calendar year.
- Canadian Ambient Air Quality Standard for NO<sub>2</sub>. Reference: CCME 2017.

### 3 NO<sub>2</sub> MONITORING RESULTS

The annual data recovery rate for NO<sub>2</sub> was 84% which is above acceptable levels for calculating an annual average concentration. Data collected from the continuous monitors were screened for any suspicious data including outliers, instrumentation drift and missing data. The NO<sub>2</sub> monitor records 1-minute average concentrations that were then averaged to produce hourly, daily, and annual average concentrations following ECCC protocols. The results are compared to the relevant hourly, daily, and annual standards in Table 2.

**Table 2 Summary of NO<sub>2</sub> Monitoring Results**

Averaging Period	Units	Air Quality Standard/Objective	Agency	Measured Value	% of Criteria
1-hour	ppb	212	Nunavut Ambient Air Quality Guidelines	20.5	9.7%
24-hour	ppb	106		7.4	7.4%
Annual	ppb	32		0.6	1.9%
1-hour (98 <sup>th</sup> percentile)	ppb	60	CAAQS	16.4	N/A <sup>a</sup>
Annual	ppb	12		0.6	N/A <sup>b</sup>

NOTES:

- Comparison to the CAAQS requires a minimum of two years of data over calendar years.
- Comparison to the CAAQS requires an average over a calendar year.

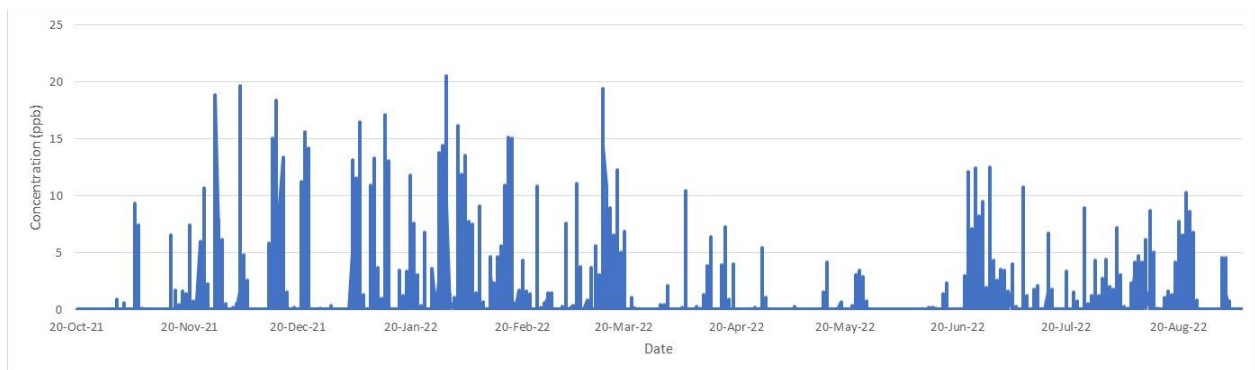
**Reference: Q1-Q3 2022 Atmospheric Compliance Monitoring Program Report Addendum**

The maximum measured hourly average NO<sub>2</sub> concentration in the October 2021 to September 2022 period was 20.5 ppb which is 9.7% of the applicable GN air quality objective and is less than the maximum predicted NO<sub>2</sub> concentration in the 2017 FEIS of 134 ppb. Likewise, measured daily and annual average NO<sub>2</sub> concentrations are well below the corresponding GN air quality objectives and FEIS predictions.

The calculated 98<sup>th</sup> percentile of the measured daily maximum 1-hour average NO<sub>2</sub> concentrations in the October 2021 to September 2022 period was 7.9 µg/m<sup>3</sup> which is below the Canadian Ambient Air Quality Standard (CAAQS) of 60 µg/m<sup>3</sup>. An explicit comparison to the CAAQS for NO<sub>2</sub> requires averaging the 98<sup>th</sup> percentile of the daily maximum 1-hour average levels in each of three consecutive calendar years, with a valid comparison requiring valid data for a minimum of two of the three years. Since the data presented in this report is for a single year and is not based on a calendar year, comparison to the CAAQS is provided for informational purposes only; not to assess compliance.

A time history plot of measured 1-hour average NO<sub>2</sub> concentrations for the period October 2021 to September 2022 is presented in Figure 1. NO<sub>2</sub> concentrations were generally low throughout the monitoring period.

**Figure 1 Time History of Measured 1-Hour Average NO<sub>2</sub> Concentrations (Oct 2021 - Sep 2022)**



**Reference: Q1-Q3 2022 Atmospheric Compliance Monitoring Program Report Addendum**

## **4 CLOSURE**

This document entitled Q1-Q3 2022 Atmospheric Compliance Monitoring Program Report Addendum was prepared by Nunami Stantec Ltd. for the account of Agnico Eagle Mining Limited. The material in it reflects Nunami Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Nunami Stantec Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Sincerely,

**NUNAMI STANTEC LIMITED**

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Attachment: A – Calibration Data

c. Guy Dufour, Agnico Eagle

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August 14, 2023

Attention: Mr. Ryan Vanengen

Page 5 of 5

**Reference: Q1-Q3 2022 Atmospheric Compliance Monitoring Program Report Addendum**

## **APPENDIX A      Calibration Data**



AND ASSOCIATED COMPANIES

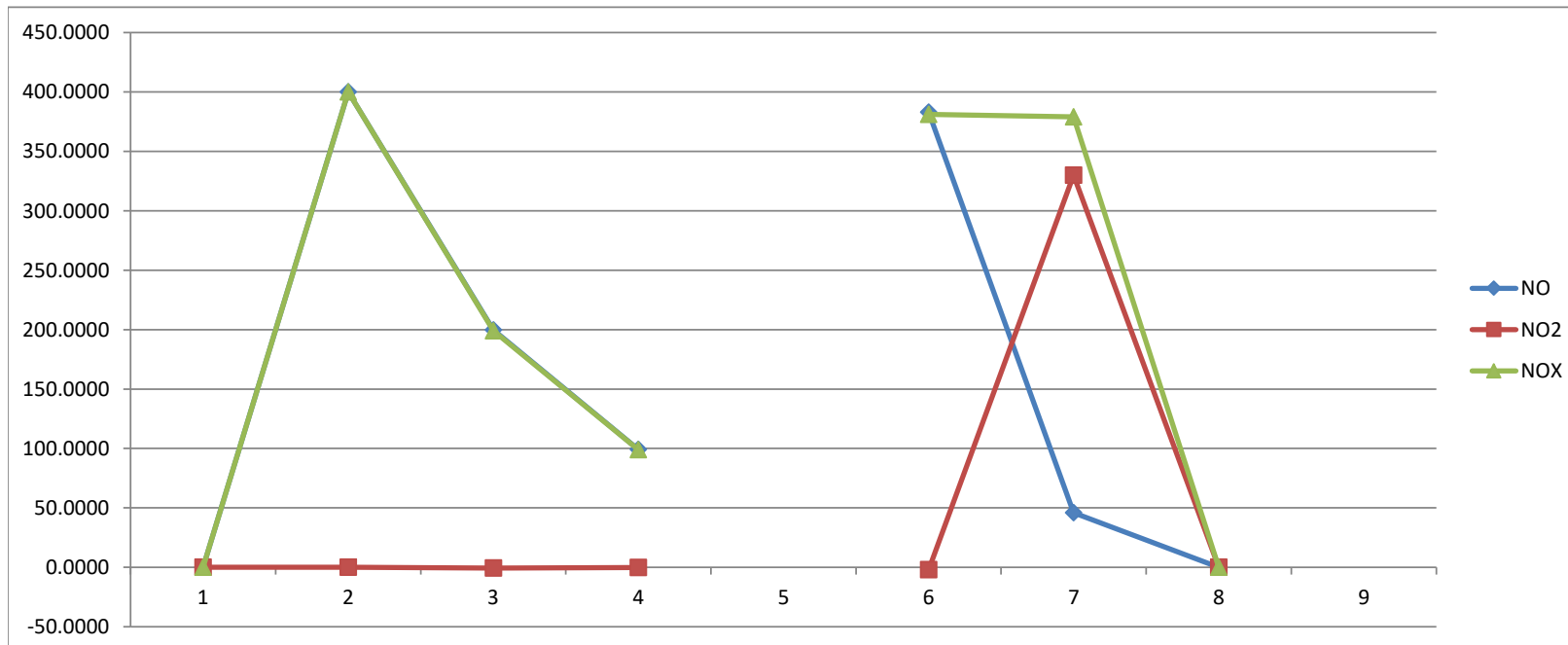
# NO-NO2-NOX

Calibration form

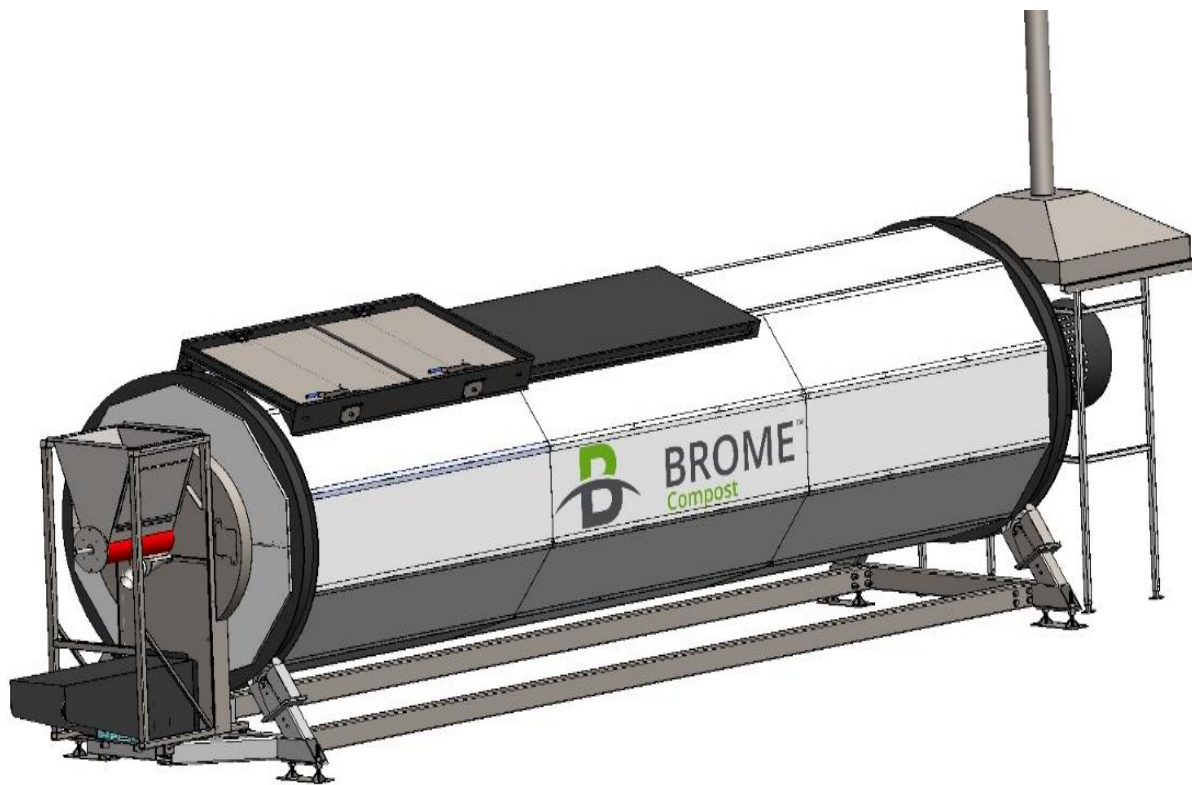
<b>Instrument</b>	42iQ	<b>Test Point</b>	<b>NO</b>	<b>NO2</b>	<b>NOX</b>	<b>ppb</b>
<b>Serial number</b>	1191222768	1	0.0000	0.0000	0.0000	ppb
<b>Customer</b>	Agnico Eagle Hope Bay	2	400.0000	0.0000	400.0000	ppb
<b>Work order</b>	N220902	3	199.6000	-0.6000	199.0000	ppb
<b>Date</b>	Oct 25 2022	4	99.1000	-0.1000	99.0000	ppb
<b>Calibrator</b>	Thermo 146iQ	GPT 1	383.0000	-2.0000	381.0000	ppb
<b>Calibrator S/N</b>	1191222770	GPT 2	46.0000	330.0000	379.0000	ppb
<b>Test gas conc.</b>	14.95	GPT 3	0.0000	0.0000	0.0000	ppb
<b>Test gas cert.</b>	1505294					

Instrument Information	
<b>Version</b>	N/A
<b>Firmware</b>	1.6.14.34444
<b>PMT voltage</b>	-825.9
<b>NO background</b>	2.8
<b>NOX background</b>	3.0
<b>NO coef</b>	1.480
<b>NO2 coef</b>	0.940
<b>NOX coef</b>	0.989

Convertor efficiency 99.4%



Completed by: Dan Molloy



# OPERATING MANUAL

**BROME COMPOSTER**



# OPERATING MANUAL



**Before using this composter, please read the instructions in this operator's manual as well as the instructions for all related equipment carefully in order to familiarize yourself with its operation and prevent problems and accidents.**

## INTRODUCTION

Composting is the ideal solution for the disposal of organic waste, especially when the alternative is sending it to landfill sites. Composting on-site greatly reduces greenhouse gas emissions and atmospheric pollutants related to the transport of organic residual matter to landfills or to industrial composting sites.

Brome Composters are easy to install and use, have low operating costs and low maintenance requirements, which makes on-site composting accessible to many types of industries, commercial businesses and institutions (ICI), as well as farms, greenhouses and municipalities.

Brome Composters are designed to convert many types of organic waste including food scraps, animal products, green waste, animal carcasses, septic mud, etc., into high-quality compost in a short period of time and with little handling. Brome Composters are available in a variety of different models, which can easily be adapted to the needs of various industries, businesses and institutions, as well as farms, greenhouse operations and municipalities.

### Models :

Composter 400 Series	Brome 410 Brome 416 Brome 424 Brome 430
Composter 500 Series	Brome 510 Brome 516 Brome 524 Brome 530
Composter 600 Series	Brome 616 Brome 624 Brome 632

The capacities of each model can vary depending on the type of material, the required residency time, and whether the input is pre-treated.

The composter is an insulated cylinder that self-rotates according to the user's pre-set time intervals. These rotations mix the contents while at the same time providing aeration, allowing the bacteria to breathe and break down the organic waste (O.W.) into compost more rapidly than other composting methods. The decomposition process produces heat. The cylinder is insulated with a 1½" insulating material (R 7.5) to preserve heat inside the cylinder during the winter months. The compost is discharged at the cylinder's extremity through an opening that also serves as an air inlet.<sup>1</sup> The rotation intervals and the amount of matter added regulate the amount of finished compost being discharged.

This composter is designed to work year-round, indoors or outdoors, and can compost a wide variety of O.W. In certain extreme conditions, adaptation may be required during the installation process.



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<sup>1</sup> Composters are pre-perforated to accommodate an optional ventilation system. Valves can also be installed as an option (passive ventilation).

## **Safety**

**Before operating this equipment, make sure that each employee understands and follows the safety, operation and maintenance instructions described in this document.**

**Do not make modifications to this equipment without authorization from Brome Compost. Equipment modification without authorisation will automatically invalidate the warranty offered by the manufacturer and could cause serious injuries.**

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## **Section 1-- Safety**

### ***1.1 Precautions for Composting Activities***

Composting is considered a safe activity for operators and users alike when certain basic rules are respected. It falls to the owners of the equipment to provide the necessary information to operators so that composting operations can proceed safely. As the manufacturer of the equipment, Brome Compost is not responsible for the manner in which the client uses the equipment.

Before operating the equipment, ensure that each employee understands and follows the health and safety instructions, operating instructions, as well as the maintenance instructions described in the operating manuals for the composter and for any other related equipment and machinery.

### ***1.2 Operating the Equipment Safely***

Following the installation of the composting system and before usage begins, Brome Compost recommends training for the client and for their designated personnel to ensure that the equipment is used correctly and in a safe manner. In addition, support services are available for the start-up process that will help clarify any issues or concerns you may have about composting procedures and that will ensure the equipment is used correctly.

Start-up support will take place once the full installation of the system is completed. A remote monitoring service and an interactive data tracking system are also available upon request to offer support to the client and their designated personnel. Please contact Brome Compost for more information on this subject.

### ***1.3 Health and Safety Instructions***

Generally speaking, there are no health risks associated with composting activities. However, residual organic material may arrive on the site already contaminated by microorganisms and composting can produce certain other micro-organisms that may be harmful. Adequate hygiene and good management practices should limit the risk of contamination and any potentially negative health impact.

#### ***1.3.1 Basic Sound Management Practices***

- Ensure that the input material is in good condition
- Keep the compost humid
- Keep the composting site clean
- Use personal protective equipment when actively manipulating the compost (for example: shredding the input matter, turning and sifting)

- Adopt good posture when manipulating the organic matter (and / or use collection bins with wheels)

### ***1.3.2 Protective Equipment***

- Regularly washed overalls or disposable coveralls
- Boots or shoe covers
- Visor or protective glasses
- Breathing mask for dust or fine particles (not obligatory but recommended). If you have asthma or other respiratory or auto-immune diseases, take extra precautions to avoid inhaling dust particles
- Always wear gloves and keep open wounds covered
- Noise-cancelling headphones
- Anti-septic waterless soap or disposable hand sanitizing wipes (for rapid disinfection of hands)
- On-hand first aid kit, easily accessible and conform to standards

### ***1.3.3 Hygienic Measures***

- Wear clean work clothes
- Avoid rubbing your eyes or touching your face with your hands
- Wash your hands frequently, especially before eating or smoking, as recommended by the Québec Ministry of Health and Social Services
- Never store food in the pockets of your work clothes
- Disinfect and cover any cuts or wounds quickly
- After each use, wash equipment used for handling and / or spreading compost that has been in contact with contaminated organic material (boots, forks, wheels, tractor floor, etc.)
- Do not wear work clothes at home
- Quickly take a shower and wash your hair after having manipulated contaminated compost

### ***1.3.4 Follow an Appropriate Operating Protocol to Minimise Contamination Risks***

Limit any risk of intoxication by only composting residual organic matter free of contamination, by washing your hands, by storing the active and the mature compost separately, and by respecting certain operating rules:

- Avoid manipulating fresh input material and mature compost with the same tools and in the same place in order to limit cross-contamination
- Keep the composting site as clean as possible

- Wash all bins used to collect material well and with soap

## **1.4 General Safety Directives for Your Composting System**

Limiting access to your installations, to your composting system, and to any related equipment is essential. Certain cases of vandalism have occurred with municipal organic waste collection where collection bins were stored outside. Using chains and a lock could remedy such a situation.

You must fence your composting installations if your system is automated and / or if any part of your equipment has accessible moving parts. Use a highly visible colour (orange or yellow) and adhesive labels to make moving parts more noticeable. A protective cage enclosing your bin lift will prevent the operator from activating the lever if the door of the cage is not closed.

## **1.5 Safety instructions for your BROME composter**

- Never go into the cylinder unless you are trained to work in confined spaces and have authorization from your immediate superior; always follow the appropriate lockout procedure (see Section 5 – Maintenance);
- Make sure all the warning labels are in place and visible
- Repairs and maintenance on the equipment must be made by qualified personnel only;
- Respect all established safety standards while performing maintenance on the equipment;
- Make a visual inspection of the equipment as often as possible
- It is recommended to use replacement parts from the manufacturer
- It is recommended to restrict access to the equipment by installing a fence or other barrier
- We recommend that the composter's doors be locked when there is no surveillance or operator present

## **1.6 Precautions against the Risk of Electrocution and Physical Damage**

- Always cut the electrical current if you need to open the control panel
- Never go beneath the composter
- Always ensure the doors are closed and locked before operating the composter
- Pay close attention to the turning of the wheels
- Never climb on the composter
- Feeding screw option:



- Never clear or clean matter without first cutting the electrical current and locking the composter
- Never place hands or tools inside the composter's feed shaft without first cutting the electrical current and always respect the recommended lockout safety procedures

### **1.7 Performing Maintenance Safely**

- Always ensure that the electrical current is switched off and that the lockout procedure is done properly when performing maintenance on the composter. If you must go inside the composter, be sure to have adequate ventilation and to respect the regulations governing work in enclosed spaces.
- If you need to rotate the cylinder during maintenance, please remove toolboxes, stepping stools, ladders, etc. and ensure that there are absolutely NO OBSTACLES within the rotational axis in front, in back, and on each side of the composter.

### **1.8 Precautions for the Maintenance of the Feeding Screw**

If the screw mechanism becomes jammed, you should under no circumstances try to remove matter with your hands or with a tool without first having followed the safety lockout procedure.

- Operate the screw for only a few seconds in reverse to unblock it. Stop the screw and start it again in the right direction
- If this does not work, follow the lockout procedure
- Remove the screw or the lock from the access door and remove the blocked matter carefully with an appropriate tool in order to avoid injuries
- Once the matter is removed, close the access door, put the screw or lock back in its proper position and restart the composter and the screw according to the proper procedure



## Section 2 – Important Information for Delivery

Technical Data Sheet:

Composter Model	Weight (empty) (Kg)	Weight (in operation) (kg)	Working Volume (m3)
Brome 406	599	1291	1.8
Brome 410	1796	2950	2.3
Brome 416	2199	4041	3.7
Brome 424	2595	5364	5.4
Brome 430	3193	6656	6.9
Brome 506	3492	4443	1.9
Brome 510	2023	3609	3.1
Brome 516	2381	4918	5.0
Brome 524	2821	3201	7.5
Brome 530	3401	8159	9.5
Brome 608	798	3113	4.6
Brome 616	3493	8121	9.2
Brome 624	5189	12132	13.8
Brome 630	5988	15245	18.3

## 2.1 *Transport and Unloading*

- Transporting the composter from the manufacturer to the installation site is the responsibility of the client.
- The unloading, on-site transport and installation of the composter are the responsibility of the client. The client is responsible for providing the machinery needed to unload the composter and a foundation on which to place it according to the technical data sheet provided by *Brome Compost*.



Place the strap firmly around the grooves by passing through the composter's support beams



Lift the composter with the appropriate lifting equipment (ensure that the composter is empty first).

## **Section 3 -- Installation**

### ***3.1 Site selection and preparation***

The client is responsible for choosing the layout for the composting site and providing the correct type of surface required for the equipment, as specified by Brome Compost. The composter must be installed on a flat and level surface. The surface or structure must be strong enough to support the composter with its full load and ensure it stays level at all times. For example and for information purposes only, a concrete slab or steel plate can serve as a foundation depending on the type of soil underneath it.



When the composter is used with mechanized loading equipment (e.g. a bin lift), we recommend securing the composter to the ground with an appropriate anchor depending on the type of surface it is resting on.

Respect all current regulations regarding the installation of a composting site.

### ***3.2 Precautions for Outdoor Installation***

- Install the composter as far from houses as possible
- Avoid placing the composter near an air intake, a ventilation system, windows and doors
- Avoid placing the composter in high-traffic and/or busy areas
- Unless the composter is equipped with a cover (available as an option), we recommend the installation of a fence around the equipment

### ***3.3 Precautions for Indoor Installation***

- Plan a ventilation shaft or a sanitary drain that exits the building to eliminate composting gas and odours
- Do not place the air exit near an air intake, a door or a window
- Take care to place the system in a separate room to avoid any contact with human food preparation or food storage areas in order to minimize contamination risks

- Make sure the building's foundation can support the weight of the composter when it's both empty and full
- Allow sufficient space around the composter to ensure ease of movement related to composting operations (adding organic waste matter, collecting compost at the exit, etc.)

### **3.4 *Electrical Connections***

The client is responsible for the equipment's electrical connections.

It is possible, however, to deliver the equipment with an electrical connection as specified by the client. Please contact Brome Compost to schedule your electrical installation before the delivery of the equipment.

## Section 4 – Operating Procedures

### 4.1 Sanitary Precautions When Composting

Composting is considered a safe activity for operators and compost users when certain basic rules are respected and followed. It is the owner's duty to give all necessary information to operators to ensure composting activities are conducted safely. Brome Compost is a manufacturer and is not responsible for the client's use of the equipment.

### 4.2 Verifying the Installation and Assembly Before Start-up

Verify that the surrounding area is free of all equipment, tools, etc. and that the safety guards are installed before the initial start-up.

### 4.3 Initial Start-up

Before starting to introduce organic waste matter:

1. Ensure that the emergency stop button is in the OFF position;
2. Wear personal safety equipment such as a mask, safety goggles, gloves;
3. Ensure that the doors are open facing the operator
4. If necessary, use a platform to ensure a safe and ergonomic operation
5. Verify that the composter is free from all possible collisions with equipment or work tools when it is rotating

Always make sure the emergency stop button is pulled  
(i.e. the composter is working) after each use.



Figure 2 -- Brome Composter Control Panel



### **4.3.1      *Adding Organic Waste Matter into the Composter***

**Step 1:** Push the emergency stop button before working on the composter. This will prevent the rotation of the composter while you are working around the machine and when the door is open.

**Step 2:** Open the composter door.

#### **Sliding door:**

Unlock the door padlocks (on both handles) if you have this option. Pull the door locks at the same time as you pull on the handles. Pull on both handles alternately for ease of opening. When the handles are completely free, slide the door to the right.



#### **Out-swing doors:**

Unlock the door padlock (located on the handle) if you have this option. Pull the handle slightly up and then towards you. Open both doors by pulling them towards you.



**Step 3:** Closing the door and starting the composter.

Close the door and lock the padlocks, if you have this option.

Start the composter by pulling the emergency stop button. A green light on the control panel will indicate that the composter is in operation.



#### **Check the Organic Matter Before Adding It Into the Composter:**

Before adding organic matter to the composter, check the contents to be sure there is no foreign or contaminating matter (i.e. plastic, metal, glass, etc.). If you see foreign material, take out as much of it as you can before you add the bin contents into the composter.

**\*\* If you notice that most of the contents of the bin have a bad smell, throw it out. \*\***

## 4.4 Monitoring the Temperature in the Composter

Temperature is the best indicator of how the composting process is working and it is crucial to monitor it daily. The best temperature range for aerobic composting is between 45°C and 70°C<sup>2</sup>.

- To read the temperature, check the thermometer(s) on the cylinder.



Using a portable thermometer is recommended for taking temperature readings at various locations through the door opening, especially during the initial start-up phase.

Figure 3 -- Composter Thermometer

## 4.5 Odour Management

Odour control is important if you wish to maintain a good impression of your composting installation and to avoid disagreements with your neighbours. By following good maintenance habits, you will prevent odour problems.

A good maintenance plan consists of:

1. Sweeping the floor and cleaning up splotches of O.W. on and around the composter;
2. Removing any waste that has fallen on the floor;
3. Carefully monitoring the composting process (make regular logbook entries, respect the procedures and recipes, etc.);<sup>3</sup>
4. Install an odour dispersion or treatment system if there is a possibility that odours may eventually bother neighbours in close proximity to your installation (available as an option).

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<sup>2</sup> Check the standards in effect.

<sup>3</sup> An online calculator for composting recipes and monitoring is available as an option.



## 4.6 How to Set Rotation Intervals

The Brome composter can be set to rotate at different intervals by adjusting the programmable timer located in the control panel.

### 1. Locate the timer on the control panel:

- The clock can be set for different units of time (hours, seconds and minutes) to meet the needs of the user;
- Turn the screw located at the lower left on the clock (see red circle on the photo) to change the time intervals;
- Turn the screw located at the top right on the clock (see the red circle on the photo) to change the time units (hours, minutes).



Figure 4-- Rotation Programmed Every Hour

### 2. Turn the plastic wheel to change the hand position.

During normal use, the composter's rotation intervals should be approximately an hour. During special operations, it can be programmed differently.

### 3. When you are finished setting the adjustments, close the panel.

## 4.7 How to Set the Door Position

The rotations can be stopped at a specific spot so that the door's position is always the same.

- Press the red emergency stop button on the composter before you work on or near it.
- Unscrew the panel located to the side of the control box
- When you look inside the composter, on the right-hand side, you will see a red magnet. The magnet stops the composter after a full rotation when it passes in front of the sensor. Remove the magnet and put it aside.

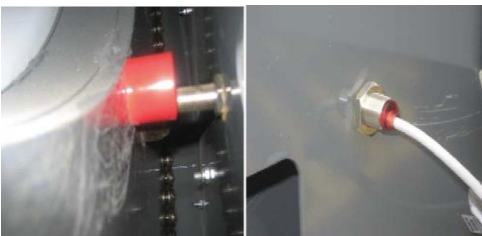


Figure 5—Red Magnet

- Pull the emergency stop button and set the composter on manual mode. Turn the composter to set the door at the desired position. Push the emergency stop button.

- Put the magnet in front of the sensor. Pull the emergency stop button and allow one rotation on automatic mode to test the door stop position (set the clock at 0 to make a rotation on automatic mode).
- After one rotation, the door should stop at the same position from which it started (if you still hear the alarm, put the composter back on manual mode to prevent a second rotation)
- If the position is correct, you can screw the panel back on, set the clock back to its original position and return the composter to automatic mode

## Section 5 -- Maintenance

### ***5.1 Performing Maintenance Safely (Work Procedures for Enclosed Spaces)***

Never enter the cylinder without having the proper training for work in closed spaces and without your organisation's authorisation. Always use the appropriate lockout procedure.

Generally speaking, an enclosed space refers to a partially or completely closed site that:



- Is not adapted nor destined for prolonged human occupation
- Has limited or restricted access and exit routes, or has a configuration that complicates first aid, rescue and evacuation procedures, as well as other emergency intervention practices
- Represents a potential risk to the health and security of persons entering the space, due to one or more of the following factors:
  - Its conception, its construction, its location and its atmosphere
  - The matter or substances that it contains
  - The nature of the work to be done
  - Risks related to the mechanisms and procedures used, as well as dangers to personal security

Please visit the following Government of Canada website for more information on enclosed spaces:

[https://www.cchst.ca/oshanswers/hsprograms/confinedspace\\_intro.html](https://www.cchst.ca/oshanswers/hsprograms/confinedspace_intro.html)

## ***5.2 Securing the Composter and/or the Screw Feeder (Dispenser)***

For your safety, it is vital to lock the composter in position during all maintenance procedures, whether it be according to the established schedule or when a malfunction occurs.

### Composter:

It is important to cut contact and lock the control panel while performing your maintenance routine in order to prevent someone else from accidentally starting or turning the composter. If you are inside the composter, make sure that another person is there to monitor you or make sure that you clearly indicate your presence.

### Feeding Screw (Dispenser):

Never attempt to clean, unblock or perform maintenance on the feeding screw with your hands unless the power is cut and the screw is locked in position. Serious injuries could result. In addition, the lateral panel should always be blocked so that it cannot open when in operation.

## ***5.3 Checking the Condition of the Composter***

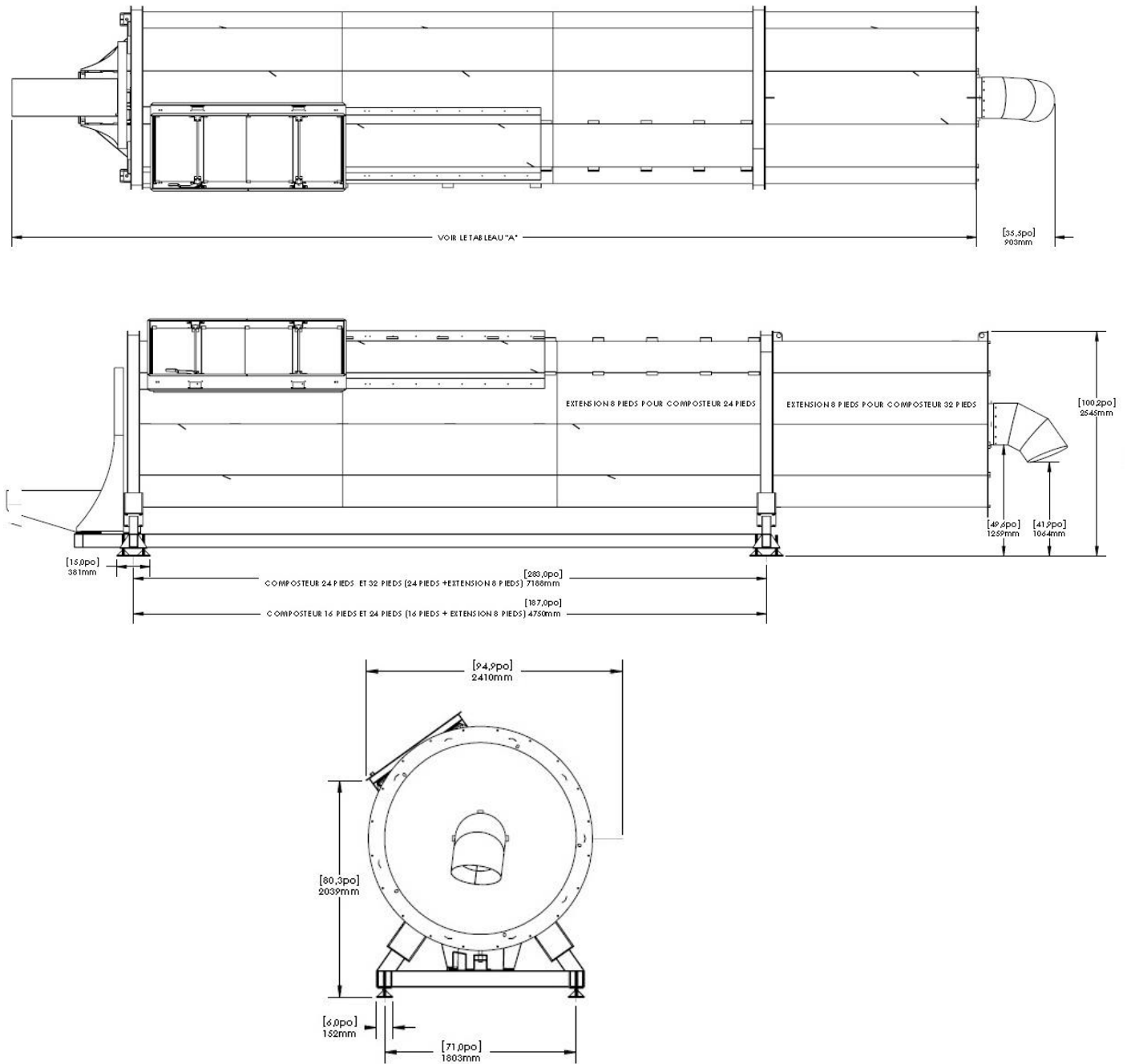
The Brome Composter is designed to function with only minimal maintenance. To ensure the composter's optimal operation, you must:

- Regularly inspect the inside of the cylinder to identify any damage that could cause premature deterioration. Remove the output end cap occasionally to allow an unobstructed inspection of the interior surfaces of the cylinder.
- Inspect and clean the area surrounding the cylinder. If material accumulates around the exterior, it can hinder the cylinder's rotational movements, contribute to the development of fly larvae, attract animals and create odours.
- Regularly inspect the opening through which the finished compost exits the cylinder (exit outlet) and clean it, if necessary.
- Do not operate the composter during prolonged periods of inactivity during the wintertime (in freezing conditions), and when if the material inside is frozen. This could damage the equipment.

## 5.4 Maintenance Schedule

Component		Check	Frequency
1	Door	Rubber Seal	Weekly
	Door	Easy to open	Each use
3	Compost exit outlet	Compost height	Each use
4	Ventilation	Working well	Weekly
5	Composter level	Keep it leveled	Twice a year
6	Control panel	<ul style="list-style-type: none"> <li>➤ Waterproof</li> <li>➤ Broken buttons</li> </ul>	Monthly
7	Sifter	Holes are free of waste	Weekly
8	Interior of composter	Visual inspection	Annually
9	Mechanical components (motor, gear box, panel)	See manufacturer recommendations	As recommended
10	Wheel (Rotating and guide wheels)	<ul style="list-style-type: none"> <li>➤ Visual inspection</li> <li>➤ Rolling smoothy</li> <li>➤ Check bearings</li> </ul>	Each use

## Section 6 – Brome Composter Dimensions



## Section 7 -- Equipment options / accessories

*Brome Compost* offers a wide range of accessories to facilitate on-site composting. Contact us for more information or if you have questions regarding the different options we offer.



Loading Ramp



Dumping Bin



Ventilation option (With full air extraction)



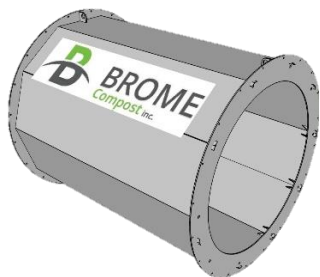
Valve for passive ventilation



Universal Bin Lifter



Protected safety cage



Extension



Sifter



Out-swinging doors



Sliding door



Stainless steel finish

For more information, contact: Brome Compost

Paul Larouche: 450 574-2000, ext.21

Always inform your immediate superior of any incidents and/or damage to the equipment.



## **Section 8 – Problem Solving**

### **8.1 *Broken Chain***

- Are the four wheels in good working condition? Perform a visual inspection of the rotating and guide wheels, and their bearings. A visual inspection should suffice.
- Are the two guide wheels located under the front part of the composter in good condition? Are they misaligned or rubbing against the groove thread?
- Is the composter rotating well on all four wheels when in operation?
- Is the composter level? 50%, 60%, 70% or more?
- Is the chain tensioner in good working condition? This prevents the chain from jumping off the sprocket.
- Are the two groove threads allowing the four wheels to turn correctly or are they problematic?
- Are the motor sprocket, the chain tensioner and the large composter sprocket all aligned?
- What is the internal temperature of the cylinder?
- According to you, are the humidity levels of the matter in the cylinder high, low or normal?
- To what height is the composter filled?
- Is the composter turning clock-wise when you look at the cylinder from the head / motor end?
- Is the overload mode on the control panel activated and causing the composter to restart?
- Could some material have become stuck in the chain or sprocket and damage either one?
- Are all the sprockets correctly aligned?

## **Section 9 – Warranty**

The Brome Composter is guaranteed against manufacturing defects for one (1) year after the invoicing date. The warranty includes reimbursement, replacement, correction and/or the repairing of the defect. Brome Compost will repair or replace equipment that displays a defect during normal usage at our discretion. This warranty covers parts and labour.

Mechanical parts (the control panel and the motor/gear box) are guaranteed against manufacturing defects, according to the current guarantees of the supplier of these parts. This guarantee includes replacement, correction and/or the repairing of the defect. It covers parts and labour.

In case of damage, the supplier's/manufacture's corroboration and assessment will aid in determining the decision to repair or replace a defective part.

All travel and/or delivery expenses, brokerage and customs fees are at the expense of the client.

Any damage due to environmental conditions are not covered by the warranty for the modular composter and its mechanical parts.

Any modification to the modular composter and its components made by a third party not authorised by Brome Compost will result in the automatic cancellation of the warranty.

<b>Components</b>	<b>Warranty</b>	<b>Conditions</b>	<b>Duration</b>
Modular Composter	Manufacturing defaults	Remplacement, correction and/or repairing of the defect.	1 year after the invoicing date
Mechanical Parts	According to the manufacturer	Remplacement, correction and/or repairing of the defect.	According to the manufacturer

Brome Compost rejects all other damages sought due to defects or breakage of its equipment such as profit loss, travel, transport and labour costs.

Only this warranty applies to Brome Compost's equipment. No other person is authorised to interpret this warranty.

Operating the composter when the condition of the organic matter is such that it has a higher than 63% humidity level may result in mechanical and/or operating problems, as well as a premature deterioration of the system, which may limit the warranty.

### **9.1 Limitation of Liability**

Please note that *Brome Compost inc.* is not responsible for problems that may present themselves due to the nature of the biological process involved in composting activities and releases itself from all such liability. We cannot guarantee that problems will not arise during the operation of the composter, as this is contingent upon the nature and variety of the organic matter to be processed, the operator's experience as well as the influence of weather conditions.

The equipment is under guarantee for normal use. A mechanical breakdown or premature wear of the equipment caused by abusive use will invalidate the manufacturer's warranty.

*Brome Compost inc.* reserves the right to make changes to the conception and manufacturing of their line of equipment at any time without obligation to change or modify the products already sold.