AGNICO EAGLE

HOPE BAY PROJECT

Proponent's Response to Comments Received on the Review of Agnico's Responses to the 2021 Annual Report and 2021 Annual Geotechnical Inspection Reports

Prepared by
Agnico Eagle Mines Limited

Prepared for
Nunavut Water Board

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1. KIA-NWB-1

1.1 SUBJECT

Management and monitoring plans in the NIRB Registry

1.2 REFERENCE

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

- KIA-NWB-1

1.3 SUMMARY

The updated 2021 Hope Bay Project Wildlife Mitigation and Monitoring Plan was not available for review alongside the 2021 NIRB Annual Report.

1.4 DETAILED REVIEW COMMENT

The KIA could not find the 2021 Wildlife Mitigation and Monitoring Program (WMMP) Plan to assist with review of the 2021 Annual Report (KIA-NWB-1). In response, Agnico Eagle Mines Ltd. (AEM) explained that the 2021 WMMP Plan was submitted and distributed to Parties as Appendix E of the 2020 NIRB Annual Report and is available on the NIRB Registry.

Please note that it is very difficult for a reviewer to find a document embedded within another document, especially when the latter filename is "210503-05MN047 12MN001-2020 Annual Report-Pt 9-IA1E", which makes keyword searches ineffective. The KIA encourages AEM to make use of the NIRB Registry document categories and to upload standalone project plans to the "Management Plan" folder. Currently, it appears that the latest WMMP Plan is TMAC's previous version from 2019. However, AEM recently uploaded several other management and monitoring plans to this folder in April 2022, and the 2021 WMMP Compliance Report in March 2022. It would be helpful if all Hope Bay management plans and Standard Operating Procedures (SOPs) were available and easily found on the NIRB Registry.

1.5 RECOMMENDATION/REQUEST

The KIA requests/recommends the following:

- Please upload a standalone 2021 WMMP Plan, and any other 'hidden' management and monitoring plans, to the NIRB Registry for future reference.
- Please also consider uploading SOPs to the NIRB Registry or include as attachments to the relevant management or monitoring plan that is uploaded.

1.6 RESPONSE TO KIA-NWB-1

The 2021 WMMP Plan was re-uploaded to the NIRB registry on September 2, 2022. Agnico will endeavour to chose file names that allow for easier keyword searches but does not have the capability to classify the type of document or make use of the document categories on the NIRB registry. Those features are only available to the NIRB.

SOP’s are considered internal documents with specific steps and requirements needed for Agnico staff. They do not contain additional regulatory or decision making details outside of those specified in the respective management plans.

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2. KIA-NWB-2

2.1 SUBJECT

Potential impacts of brine spills onto tundra

2.2 REFERENCES

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

- KIA-NWB-4

Agnico Eagle, Hope Bay Spill Contingency Plan (June 2022)

2.3 SUMMARY

Brine water used for underground drilling could accidentally spill onto surface tundra environments. The potential impacts of brine spills on tundra vegetation should not be overlooked. AEM's spill contingency planning should include mitigation measures to prevent, minimize, and restore/remediate brine spills.

2.4 DETAILED REVIEW COMMENT

In response to the KIA's concerns about the potential for underground brine water to spill onto the tundra environment (KIA-NWB-4), AEM states that "underground brine water, when used for drilling, is limited to use underground and has no direct impact to wildlife or the tundra." The KIA understands that underground brine water is intended for use underground; however, accidents may occur and brine spills on the surface would be detrimental to tundra vegetation and potentially wildlife.

Spills of saline waters can impact tundra vegetation by reducing plant growth and survival. High levels of salts in soil increase the osmotic potential of soil water, making water uptake difficult for most tundra plants. Salt-affected vegetation may wilt, become discoloured, drop leaves, or die (Barker 1985). These impacts may also persist longer than those of other spilled substances since salts are not broken down by chemical or biological processes in soil. The effects of saline waters also depend on habitat type, where wet tundra is more resilient than moist or dry tundra due to physiological tolerances of the dominant species and dilution of salts in soils with high water content (Simmons et al. 1983). Following spills of saline water, soil salinity (conductivity) levels of 2-3 mmhos/cm resulted in moderate damage to tundra vegetation, and levels of 6-10 mmhos/cm resulted in severe damage (Jorgenson et al. 1987).

A study of historic tundra spills, conducted by the Alaska Department of Environmental Conservation (ADEC), found that spills of saline waters (including brine) comprised some of the largest spills recorded, both by individual event and cumulatively. Overall, of the 198 spills to tundra compiled in their Tundra Spill Database, 30 spills (15%) involved saline waters (Behr-Andres et al. 2001). To help mitigate spills of saline water and other hazardous substances to tundra environments, ADEC has developed Tundra Treatment Guidelines (Cater 2010), which is intended for Alaska's North Slope but could be applied to other Arctic environments.

Due to the potentially severe impacts of brine spills to tundra environments, the KIA recommends that AEM take all reasonable measures to prevent such spills (i.e., avoidance, the first step of the mitigation hierarchy) and be prepared to quickly respond to brine spills should they occur (minimize and restore/remediate, the next steps of the mitigation hierarchy). It may be beneficial to incorporate some saline water spill treatment

guidelines developed by ADEC into the Hope Bay Spill Contingency Plan (SCP). The latest SCP (June 2022) does not discuss brine spills specifically.

2.5 RECOMMENDATION/REQUEST

The KIA requests/recommends the following:

- Please acknowledge and consider the demonstrable risks of brine mixing, using, recycling, and sump pumping (wastewater management) of saline water/brine at the Project site. While spills of brine water onto the tundra are never intended, they do occur with relatively high frequency relative to other types of spills in Arctic spill records.
- Please consider incorporating ADEC's tundra treatment guidelines for saline water spills into the Hope Bay SCP.

2.6 RESPONSE TO KIA-NWB-2

Agnico does acknowledge the risk of brine mixing, use and sump pumping of saline water at the Project and has considered them in the operational practices occurring at site. Agnico will consider adding ADEC tundra treatment guidelines to the Hope Bay Spill Contingency Plan. This update will be included in the 2023 Annual Report to the NWB. ‘

3. KIA-NWB-3

3.1 SUBJECT

Preferred chemical dust suppressants

3.2 REFERENCES

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

- KIA-NWB-9

Agnico Eagle, Operations, Maintenance and Surveillance Manual: Hope Bay Doris Tailings Impoundment Area (Rev.4, February 2022)

- Appendix C

3.3 SUMMARY

AEM indicated in the Operations, Maintenance and Surveillance Manual: Hope Bay Doris Tailings Impoundment Area (TIA OMS Manual) that Dust Stop is their preferred dust suppression product. However, they are using EK-35 at the Project site.

3.4 DETAILED REVIEW COMMENT

AEM did not respond to the KIA's requests for information about AEM's preferred dust suppression product (KIA-NWB-9). Instead, AEM states that they may use Government of Nunavut (GN) approved chemical dust suppressants (GN 2014) and have been using EK-35 for dust suppression on the airstrip and site roads.

It is unclear why AEM is using EK-35 when their preferred dust control product is Dust Stop Municipal Blend developed by Cypher Environmental, as indicated in Appendix C of the TIA OMS Manual. Both products are on the GN's list of approved dust suppressants. However, Dust Stop is advertised as being 100% environmentally friendly, non-corrosive, and non-toxic (TIA OMS Manual, Appendix C), while EK-35 has low toxicity (GN 2014). The KIA encourages the use of Dust Stop to minimize safety risks to both humans, fish, and wildlife with prolonged use.

3.5 RECOMMENDATION/REQUEST

The KIA requests the following:

- Please clarify whether AEM intends to replace the use of EK-35 with Dust Stop. If not, please explain why the TIA OMS Manual features Dust Stop as AEM's preferred dust suppression product.
- Please consider switching to Dust Stop for use on Project roads and airstrip since it appears to have the least effects on the environment and human health.

3.6 RESPONSE TO KIA-NWB-3

Agnico acknowledges the discrepancy between the preferred dust suppressant listed in the TIA OMS and the product used in the past at Hope Bay. Dust suppression products have not been used at the TIA. As

dust suppressant EK-35 is approved for use by the GN, it was originally ordered at Hope Bay as a trial at the airstrip and the trial stock has since depleted. Dust Stop was used for the first time in the Summer 2022 at the airstrip. Agnico is open to reviewing our dust suppressant choice and is committed to only using GN approved dust suppression products.