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NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

**File: 2AM-DOH1335/G1  
Modification**

July 04, 2023

Manon Turmel  
Permitting and Regulatory Affairs Superintendent  
Agnico Eagle Mines Limited  
11600 rue Louis-Bisson,  
Mirabel, Quebec, Canada J7N 1G9

Email: [manon.turmel@agnicoeagle.com](mailto:manon.turmel@agnicoeagle.com)

**RE: Licence No: 2AM-DOH1335 Type “A”, Doris-Madrid Project; Agnico Eagle Mines Limited; Modification – Inclusion of a composter.**

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Dear Ms. Turmel:

On May 15, 2023, the Nunavut Water Board (NWB or the Board) acknowledged the receipt of a Notice of Modification by Agnico Eagle Mines Limited (Agnico Eagle or Licensee) for a modification (Request) to the Licence No: 2AM-DOH1335 (the Licence) issued to Agnico Eagle for the Doris-Madrid Project (the Project). This notification is required under the Type “A” Water Licence 2AM-DOH1335 Part G, Item 1.

The Board notes that on March 7, 2023, the Nunavut Planning Commission (NPC) concluded that the inclusion of a composter and its planned location in Quarry 2 was a significant modification to the project, and referred the application to the Nunavut Impact Review Board (NIRB) for screening. Subsequently, the NIRB sought clarification from the NWB whether the proposed activity would require an amendment to the Water Licence or whether it would be considered a modification, under the existing Water Licence. The NWB confirmed that the proposed installation of a composter fits within the definition of a “modification” under the existing Water Licence No: 2AM-DOH1335 and would not require an amendment. On May 10, 2023, the NIRB determined no further assessment is required and referred the proposed activity to the NWB.

The Notice of Modification outlines Agnico Eagle’s proposal to include in-vessel composting of organic waste generated at Doris Madrid Project as an alternative to incineration to reduce fuel consumption and overall greenhouse gas emissions. Currently, Agnico Eagle sends organic material generated to an on-site incinerator, which requires fuel for its operation.

Agnico Eagle further states that... *“Composting the material will provide an environmental benefit by reducing the amount of material being incinerated. The type of material that will be diverted from the incinerator to the composter takes longer to incinerate thus a composter would reduce fuel consumption. 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.”*

Agnico Eagle anticipates that the material discharged from the composter will be approximately 350 kg per week. The decomposed material will be stored in a bin and then transported for storage, use or disposal. The processed compost will be stockpiled in the overburden stockpile west of the Doris Camp or in Quarry 2. The processed compost will be used in progressive reclamation activities such as rehabilitation following exploration diamond drilling, infilling depressions in the landscape, capping waste rock facilities, and regrading the base of abandoned quarries to encourage vegetation. Agnico Eagle will adhere to the Canadian Council of Ministers of the Environment (CCME) Guidelines for Compost Quality, for the use of compost on-site.

On May 15, 2023, the NWB distributed the Request for public review. Interested parties were invited to comment until May 29, 2023. The Kitikmeot Inuit Association (KIA) provided an email response on May 23, 2023, stating that they had no comments. Crown-Indigenous Relations and Northern Affairs (CIRNA) provided comments on May 24, 2023, and Environment and Climate Change Canada (ECCC) submitted comments on May 29, 2023. Agnico Eagle requested extensions to respond to the comments and submitted a response on June 21, 2023. By June 29, 2023 all parties had confirmed that their information requests were addressed by Agnico Eagle.

Summary of comments:

Crown-Indigenous Relations and Northern Affairs Canada (CIRNA) – May 24, 2023

1. CIRNA had several questions on the Hope Bay Incinerator and Composter Waste Management Plan. These are as follows:
  - a. At what stage is the compost tested, before it is moved to either the quarry or landfill?
  - b. When, where and how will the quarry be tested for potential leakage?
  - c. Will compost category A and B be stored in the quarry?
  - d. To what standard is the compost going to be used for revegetation or other purposes?
  - e. Will these results of the quarry testing and batch testing be placed in the annual report?

Agnico Eagle’s response:

- a. After the residency time of 9-20 days, the material will be tested and if the results are acceptable will be put to the overburden pile. If material can’t be used as reclaim material it will be disposed of in the south or put in our approved landfill.
- b. Agnico Eagle stated that they propose to... *“stockpile processed compost for progressive closure and store the material in the overburden stockpile west of the Doris Camp or in Quarry 2. Both of these locations are situated at a distance from surface water systems, and any run-off observed will be managed within the facilities. Any surface water runoff will be managed according to the Water Licence requirements. Should water quality not meet quarry discharge criteria it will be pumped to the TIA in accordance with our approved Water Management Plan.”*

- c. Agnico Eagle stated that... *“Compost category A (unrestricted use) will be temporarily stored in quarry, either used for progressive reclamation, or moved to the overburden pile. Compost category B (restricted use) will be stored in the quarry. If material can't be used as reclaim material (i.e., category B), it will be disposed of in the south or put in our approved landfill.”*
  - d. Agnico Eagle will adhere to the CCME Guidelines for Compost Quality (2005) for compost usage across the site.
  - e. Yes, results will be provided in the Annual Report.
2. CIRNA recommended that the Licensee update the Reclamation and Closure Plan to include the quarry.

Agnico Eagle's response:

Agnico Eagle stated that... *“Upon completion of operations, the composter will be removed, and the Quarry 2 area will be decommissioned and left in a physically stable state and reclaimed as per the Preliminary Closure and Reclamation Plan approved under Water Licence 2AM-DOH1335. Therefore, Agnico Eagle does not agree that an update is required to the Closure and Reclamation Plan at this time.”*

3. CIRNAC recommended that the Licensee clarify where the materials for the composter will be obtained from, their quantities, and ensure that there is a method to track the volumes of waste from each source.

Agnico Eagle's response:

Agnico Eagle stated that... *“Materials for the composter will be obtained from the Doris camp, and from Doris and Madrid activities associated with 2AM-DOH1335, 2BB-MAE1727, and 2BE-HOP2232. Currently it is assumed that the compost material would consist of 700 kg food waste + 30% cardboard composted per week as a low case (per Hope Bay Incinerator and Composter Waste Management Plan), and 2,100 kg food waste + 30% cardboard composted per week (maximum camp capacity of 400 persons) as the high case. Agnico Eagle will complete documentation records as outlined in Section 3.3 of the Incinerator and Composter Waste Management Plan”*

4. CIRNA had several questions regarding the use and storage of compost.
  - a. Where will the material be stored before compost starts? How long will the compostable materials be accumulating before being inserted into the composter?
  - b. How much of the compost is expected to be in a liquid state?
  - c. Where will the compost be stored immediately after compost is created?
  - d. How often will the compost be brought over to the quarry?
  - e. Compost comes out of the composter warm and still needs to be cured for several days before it can be used. Will AEM deposit the compost into the quarry before such time that it is done maturation?
  - f. How will the compost be stored in the quarry?
  - g. How close is the quarry to water bodies?

- h. Is there a potential for compost dust to get into water bodies?
- i. Is it expected that this quarry will fully be able to support all materials for the period of the water license and to what degree will the quarry be filled with compost?
- j. When and where will the compost be used? Will AEM ask for approval before the use of the compost?

Agnico Eagle's response:

- a. *"Per Section 2.2.3 of the Hope Bay Incinerator and Composter Waste Management Plan, waste is segregated at the source to ensure non-compostable waste streams do not enter the composter. Collected compostable waste are stored in dedicated waste containers, located throughout the Hope Bay Mine where organic material may be produced. Currently at site compostable waste material is collected daily to as needed. For example, paper and cardboard is not typically collected daily; however, food from the kitchen is done daily."*
- b. *"Based on the acceptable wastes from composting, very limited liquid is anticipated. However, due to the nature of the organic material, some liquid could be expected from such acceptable waste like sauces and gravy. Of the 700 kg food waste per week, sauces and gravy would contribute little to the overall number."*
- c. *"Agnico Eagle proposes to stockpile processed compost in 1 m<sup>3</sup> mega bags, the bags will be stored in sea cans in Quarry 2."*
- d. *"The number of times of compost material will be transferred to the overburden pile will depend on the residency time in the composter. Compostable material requires a minimum of nine days in the composter, but as stated by the manufacturer, could be between 9-20 days."*
- e. *"As stated in the previous response, compost will be transferred into 1 m<sup>3</sup> mega bags and the bags will be stored in sea cans in Quarry 2. The cured compost will be transferred in mega bags and used for progressive closure pending it meets criteria described in Agnico Eagle's response to 1-b; or will be moved over to and stored in the overburden stockpile west of the Doris Camp or in Quarry 2."*
- f. Agnico Eagle referred CIRNA to response "c" above.
- g. Agnico Eagle referred CIRNA to Agnico Eagle's response to 1-b.
- h. *"To control odours during composting and windblown debris, the composter will be housed inside a refurbished coverall located in Quarry 2. Potential for generation of dust from compost stockpiles is considered similar to stockpiled aggregate already housed in the waste management area and will be managed according to best management practices for stockpiled overburden material (watering or cover as needed). Dust onsite is monitored regularly according to the site's air quality monitoring program."*
- i. *"The quarry will be able to support all materials for the period of the Water Licence. For the past few years of operation at Doris and currently, the quarry adequately facilitates waste storage and final sorting, prior to incineration; using only a small portion of the footprint of Quarry 2. Based on the operation at Meadowbank, volume estimates of compost generated at Hope Bay will be approximately 33 tonnes per year (stored in mega bags) that will be stored in a few seacans. If compost material meets the category A criteria for unrestricted use, it will be removed from Quarry 2 and used for progressive reclamation or moved to the overburden pile for storage."*

- j. *“Future use of the processed compost from domestic waste will be used in progressive closure and reclamation that may include rehabilitation following exploration diamond drilling, capping waste rock facilities, and re-grading the base of abandoned quarries to encourage vegetation”.*
5. CIRNA recommended that the Licensee state what activities will be undertaken and how they will add the operations of a composting area into the water management strategy for the whole of the site.

Agnico Eagle’s response:

*“Agnico Eagle will continue to adhere to water management requirements in Quarry 2 as per our Water Licence and as stated in Hope Bay Project Doris and Madrid Water Management Plan (March 2023) Section 3.2.8 – Quarry Water Management. Quarry 2, and therefore composting area water management has already been integrated into the whole of the site. As per the management plan, Quarry 2 has been developed such that water is confined within the quarry boundaries. Water quality samples will be collected prior to discharge. If water quality meets licence criteria for discharge, it will be discharged in accordance with the Water Licence. In the event that water quality samples collected in the quarry do not meet the discharge criteria, an appropriate mitigation plan will be developed, which may include pumping the water to the TIA”*

Environment and Climate Change Canada (ECCC) – May 29, 2023

1. ECCC requested Agnico Eagle to clarify... *“how the project’s environmental risks have been evaluated, and what they have done to prepare for and mitigate spills or releases of hazardous or deleterious substances that are likely to result from unplanned accidents and malfunctions.”*

Agnico Eagle’s response:

*Agnico Eagle stated that... “the incinerator has already been approved through the environmental review and water licensing process and changes are not proposed as part of the Modification request.*

*However, Agnico Eagle adheres to the Spill Contingency Plan which is in place to ensure that best practices for response are implemented in the event of a spill or unintentional release, and that the conditions of water licences, project permits, and relevant legislations are met (i.e., Environmental Emergency (E2) Regulations, as well as the Metal and Diamond Mining Effluent Regulations enacted under the Canadian Environmental Protection Act).”*

Copies of all documents received in support of the Request can be accessed through the NWB’s Public Registry and FTP site using the following Link:

<ftp://ftp.nwb-oen.ca/registry/2%20MINING%20MILLING/2A/2AM%20-%20Mining/2AM-DOH1335%20AEM/3%20TECH/G%20MODIFICATIONS>

NWB's Review and Decision

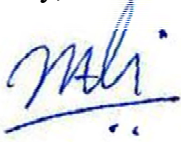
The NWB, having fully reviewed the Licensee's request in the context of potential impact of the proposed activities on the freshwater environment, and consistency of the proposed activity in relation to the scope of the Licence, determined that the proposed modification is consistent with the scope of activities considered under the Licence issued to the Project. Therefore, by way of this correspondence and in accordance with Part G, Item 1 of the Licence, the Board authorizes Agnico Eagle to install a composter in Quarry 2.

The Licensee is advised that the Board's review of this document is a verification that the proposed activity is consistent with the existing terms and conditions of the Licence and more specifically with Part G. It should be noted that the Board's acceptance is NOT intended or offered as any representation regarding the suitability of the plans nor third-party verification of the design, construction, planning or engineering discussed in the document.

Further, in keeping with Part G, Item 4 of the Licence's terms and conditions, the submission of post-construction information, including as-built plans and drawings, shall remain applicable to this authorization.

Should you have any questions regarding the above, please contact the NWB Licensing Department by email to [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca) or by phone at (867) 360-6338.

Sincerely,



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Mohammad Ali Shaikh  
Technical Advisor,  
Nunavut Water Board

AS/rqd

Cc: Distribution List – Doris North, Kitikmeot