

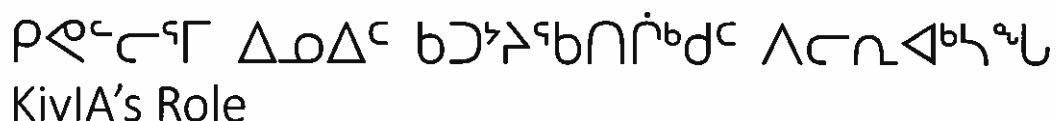


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Environmental Assessment of  
Treated Groundwater Effluent  
Discharge into Marine  
Environment, Rankin Inlet

ΔΔC<sup>6</sup>D<sup>6</sup>ΔΔΓ<sup>6</sup> ρΓ<sup>6</sup>ρσ<sup>6</sup> ρ<sup>6</sup>ΔC<sup>6</sup>Δ<sup>6</sup>Γ<sup>6</sup>  
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# Technical Review of Final Environmental Impact Statement Addendum





- KivIA represents Inuit and administers certain provisions of the Nunavut Agreement in the Kivalliq Region.
- KivIA's mission is to represent Inuit in a fair and democratic manner in the development, protection, administration and advancement of their rights and benefits; and to promote economic, social, political and cultural well-being.
- The aim of Inuit Owned Land management is to administer those Lands to promote self-reliance and the cultural and social well-being of Inuit now and in the future.
- Inuit Owned Lands must be managed in such a way as to sustain and enhance the value of the lands.



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Review Objectives

- Ensure that the potential impacts and benefits were comprehensively assessed
- Ensure Inuit Qaujimajatuqangit values were incorporated into impact determination, mitigation, project design and monitoring



- KivlA submitted an initial assessment of the amendment on September 25, 2020 highlighting 13 deficiencies and technical concerns in 3 areas:
- Inuit employment
- Characterizing impacts within the marine environment
- Potential impacts to caribou and the terrestrial environment
- KivlA also requested Agnico Eagle update their application to discharge all water from the Meliadine Site by waterline to Melvin Bay
- This request is intended to avoid most discharges to Meliadine Lake to address concerns raised by Kivallirmiut



## Review History – Initial Assessment

- Agnico Eagle responded to KivIA's initial 13 issues, resolving the majority by:
- Describing how Inuit employment targets for the project can be achieved despite the pandemic
- Providing additional information to demonstrate that the increased discharge of saline groundwater would not negatively impact water quality and aquatic life in Melvin Bay
- Committing to bury or cover 80-90% of the twin waterlines
- However, Agnico Eagle had not adequately addressed KivIA's request to divert all surface and subsurface contact water from the Meliadine Site to Melvin Bay





- One information request and two technical comments were unresolved as of our final written submission
- In fulfillment of commitments made during the technical meeting and in response to KivIA's interventions, Agnico Eagle submitted an Adaptive Management Plan outlining an approach to divert surface contact water from CP1 to Melvin Bay
- Three technical issues were raised following our review of this new Plan





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# Outstanding and New Technical Comments

- 1 የድህረ ገጽ ላይ ያሉ ስራዎች
  - 2 የድህረ ገጽ ላይ ያሉ ስራዎች
  3. ስራዎች ላይ ያሉ ስራዎች
- 1 Outstanding Information Request
  - 2 Outstanding Technical Comments
  - 3 New Technical Comments





## KivA-IR#2

20,000 m<sup>3</sup>/day alternative and the discharge of surface contact water

- KivA is concerned with the ongoing surface contact water discharges to Meliadine Lake
- KivA requests Agnico Eagle divert as much surface contact water from CP1 to Melvin Bay as possible
- KivA specifically recommended Agnico Eagle provide updated hydrodynamic modelling to evaluate the feasibility of discharging a blended saline and surface contact water effluent to Melvin Bay
- Agnico Eagle provided updated modelling with a low salinity 2.18 Practical Salinity Units (PSU) scenario to address this concern
- P-1000 is a surface contact water discharge to Meliadine Lake from CP1. The discharge is currently to the lake.
- P-1000 is a surface contact water discharge to Meliadine Lake from CP1. The discharge is currently to the lake.
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Optimal side slope of the berms on the waterline covering

- Agnico Eagle initially planned a side slope of 1:2.5 (rise:run) for the road. This proposed side slope is steeper than the caribou literature suggests is required to facilitate caribou crossing (1:3 to 6).
- KivIA recommended that the side slopes on the waterline coverings be minimum 1:3 slope or preferably 1:5 slope to facilitate caribou passage through the road-waterline corridor.
- Agnico Eagle clarified that the targeted side slope is 1:3 and has committed to providing details on actual side slopes "as-built" within 6 months of completion of the lines.
- KivIA considers this issue resolved.











## KivlA-New-TC#2

$$\mathfrak{f}_b \Gamma^a \sigma^c \rfloor^c \triangleleft \triangleright \rfloor^c \cap \sigma^c \mathfrak{f}_b$$

# Freshet Management

- Discharges to both Meliadine Lake and Melvin Bay are planned during the freshwater and marine ice-free seasons but these discharge windows do not align with the discharge needs pertaining to CP1 required to both avoid compromising the CP1 dike as well as discharging to Meliadine Lake.
- KivIA recommended Agnico Eagle link commencing annual operations of the waterlines in Adaptive Management Plan Table 1 Note 1 to temperature as has been done with the conclusion of the annual operation window
  - Agnico Eagle has agreed

## KivIA-New-TC#2

$$\sigma^a \Gamma^a \sigma^b = \Gamma^b$$

## Freshet Management

- KivIA further recommended Agnico Eagle specify within the Adaptive Management Plan that the diversion of water from CP1 to Melvin Bay will be prioritized ahead of saline water during freshet given the ample additional saline storage capacity provided through the use of Tiriganiaq-2 and other infrastructure
- Agnico Eagle disagreed citing concerns with long term storage of saline groundwater in Tiriganiaq 2, specifically:
  - Risk to permafrost degradation
  - Risk to increased groundwater inflows

# KivIA-New-TC#2

$$\mathfrak{f}_b \Gamma^a \sigma^c \rfloor^c \triangleleft \triangleright \rfloor^c \cap \sigma^b$$

# Freshet Management

- KivIA respectfully disagrees
- Prioritizing surface contact water in the waterlines during freshet may delay the annual drawdown of the on-site saline water inventory, but will not preclude completely dewatering the saline water inventory by the end of the annual waterline operational period.
  - This is feasible even when applying a 4 month operational period rather than the proposed 5 months, allowing for 20% downtime

- [illegible]

## KivlA-New-TC#2

$$\mathfrak{b}^{\circ} \Gamma^{\circ} \sigma^{\circ} \mid^{\circ} \triangleleft \triangle \triangleright \subset^{\circ} \cap \sigma^{\circ} \mathfrak{b}$$

# Freshet Management

- As with KivIA-New TC#1, KivIA recommends that Agnico Eagle devote at least 50% of the full waterline capacity (at least 10,000 m<sup>3</sup>/day) to the discharge of surface contact water to the marine environment as soon as the waterlines become available annually and suspend discharges to Meliadine Lake unless the water levels in CP1 are >94%, the “at risk” CP1 water level for the open water period.
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P<sup>l</sup>-C<sup>b</sup><sup>s</sup>b N<sup>c</sup>Nσ<sup>s</sup>b ΔL<sup>c</sup>NΔ<sup>e</sup>r dδrσ<sup>s</sup>J<sup>c</sup> b<sup>a</sup>r<sup>s</sup>b<sup>c</sup>σ<sup>d</sup>< C<sub>L</sub>D<sup>a</sup><sub>L</sub>m<sup>c</sup>

## Limits on Freshwater Discharge to Melvin Bay

- KivIA proposes that temporary storage of saline water on site during the open water season will allow Agnico Eagle to devote a greater proportion of the waterlines capacity to surface contact water
- KivIA recommends that freshwater discharged to Melvin Bay via the waterlines should not be limited to 50% capacity by volume, but rather should be limited by compliance with the MDMER requirement that effluent should not be acutely toxic to aquatic life.



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## Limits on Freshwater Discharge to Melvin Bay

- To support a lower TDS limit on discharges to Melvin Bay, we recommend Agnico Eagle conduct acute toxicity testing using MDMER saline species to determine a lower TDS limit using blended surface contact water from CP1 and saline groundwater stored on site.
- This TDS limit should be applied as a lower bound Effluent Quality Criterion for discharges to Melvin Bay



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Questions?