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

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Technical Review of Final  
Environmental Impact Statement  
Addendum



ᓇᜄᜄᜄ ሆᜄᜄᜄ, መᜄᜄᜄ

14-17,2021

Rankin Inlet, Nunavut

June 14-21, 2021

## ປອັນຕົວ ດຳເນີນ ຂົມພາບອິນຸຕ ລົດຖະບາຍ

### KivIA's Role

- 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.
- ປອັນຕົວ ດຳເນີນ ຂົມພາບອິນຸຕ ຮູ່ສັບ ຕັດກັບ  
ດຳເນີນ ອົງລັດ ແລ້ວ ດຳເນີນ ອົງລັດ ຕັດກັບ  
ລົດຖະບາຍ ມາດໂຫຼມ ດຳເນີນ ອົງລັດ ພອັນຕົວ.
- ປອັນຕົວ ດຳເນີນ ຂົມພາບອິນຸຕ ເລັກ ດຳເນີນ  
ຮູ່ສັບ ຕັດກັບ ດຳເນີນ ອົງລັດ ແລ້ວ  
ເກົ່ານັ້ນ ດຳເນີນ ອົງລັດ, ຖົກ ດຳເນີນ ອົງລັດ,  
ລົດຖະບາຍ ດຳເນີນ ອົງລັດ ມີ ດຳເນີນ ອົງລັດ  
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ດຳເນີນ ອົງລັດ ແລ້ວ ດຳເນີນ ອົງລັດ,  
ດຳເນີນ ອົງລັດ ແລ້ວ ດຳເນີນ ອົງລັດ.  
ແລ້ວ ດຳເນີນ ອົງລັດ ແລ້ວ ດຳເນີນ ອົງລັດ.
- ຜົນສົ່ງ ດຳເນີນ ອົງລັດ ມາດ  
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ດຳເນີນ ອົງລັດ ດຳເນີນ ອົງລັດ.
- ດຳເນີນ ອົງລັດ ມາດ  
ແລ້ວ ດຳເນີນ ອົງລັດ ມາດ ດຳເນີນ  
ລົດຖະບາຍ ມາດ ດຳເນີນ ອົງລັດ ມາດ.



## ӦԳԾԸ ԱԼԿՈՐԼՇՏԸ

### 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
- ՃԵՐՄՎԱԾ ԱՆԴ ՃԵՐՋԸ  
ՀԱՅՀԵԺԸ ԿԵՐՆԵՐԸ  
• ԱՆՌԵՐԼՇՏԸ ՋԹԱԸ ԿԵՐՆԵՐԸ  
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ԿԵՐՆԵՐԸ

## ¶Γ·σ· ¸·Δ·C·P·C·D·C·D·σ· – Λ·Γ·Δ·σ·L·C· ¸·Δ·Δ·σ·

### Review History – Initial Assessment

- KivIA 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
- KivIA 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
- ¶Γ·ε·c· ¸·Δ·Δ·c· ¸·C·γ·Δ·C·D·c·D·σ· > c  
Λ·Γ·Δ·σ·L·c· ¸·Δ·Δ·σ·L·c· ¸·Δ·Δ·σ·L·c  
Δ·Γ·Δ·Δ·Δ· 25, 2020-γ·Δ·C·D·c·D·σ· 13-  
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## ‘PΓ‘Pσ‘ ‘b\_Δc>PCD>c>‘Dσ‘ - AΓ<‘σ‘ Lc ‘b>A‘σ‘

### 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
- *‘d‘σ‘d‘c P>‘r‘n‘b>‘>c P<‘c‘ ‘Δ\_Δc  
b>‘g‘n‘b‘r‘m‘ C‘d‘m‘ ‘13-‘j‘c Δ‘l‘j‘C>‘σ‘,  
d‘n‘r‘r‘d‘n‘r‘L‘c‘n‘b‘ d‘r‘σ‘<σ‘ Δ‘l‘a:*
- *‘a>‘e‘Δ‘l‘Δ‘c‘n‘b‘ ‘Δ\_Δc Δ‘n‘u‘C>σ‘r‘c‘  
C‘n‘l‘r‘c‘ Δ‘n‘u‘d‘n‘r‘c‘ n‘p‘d‘n‘r‘a‘l‘n‘c  
m‘n‘r‘d‘n‘r‘d‘n‘b‘c‘n‘b‘*
- *‘d‘C‘Δ‘e‘d‘n‘b‘c‘n‘b‘ Δ‘l‘r‘d‘n‘C‘r‘σ‘ ‘D‘p‘r‘d‘p‘n‘m‘  
C‘d‘n‘d‘n‘b‘n‘b‘ ‘d‘n‘y‘r‘d‘p‘σ‘r‘b‘ d‘n‘y‘b‘c‘n‘r‘c  
d‘n‘C‘d‘n‘r‘c‘n‘b‘ σ‘Δ‘l‘d‘n‘c‘ ‘Δ‘l‘Δ‘n‘s‘σ‘n‘m‘ c‘d‘l‘  
Δ‘l‘Δ‘n‘d‘C‘Δ‘c‘ C‘Δ‘b‘σ‘ b‘n‘r‘c‘σ‘d‘c‘ C‘n‘d‘n‘m‘c*
- *‘n‘d‘n‘c‘c‘n‘r‘d‘n‘r‘d‘n‘b‘ d‘n‘d‘n‘c‘n‘r‘c‘ ‘d‘n‘d‘n‘c‘n‘r‘c‘ 80-90-  
‘g‘n‘σ‘ L‘n‘r‘m‘ c‘n‘d‘n‘c‘n‘r‘c‘*
- *P‘r‘d‘σ‘c‘d‘n‘, ‘d‘σ‘d‘d‘c‘ b‘l‘r‘l‘n‘b‘c‘n‘d‘n‘l‘c‘ P‘d‘c‘n‘  
Δ\_Δc b‘g‘n‘b‘r‘m‘ C‘n‘y‘d‘n‘b‘s‘σ‘n‘ C‘d‘n‘d‘n‘c‘n‘r‘b‘  
Δ‘l‘C‘n‘b‘n‘b‘n‘b‘n‘b‘ σ‘Δ‘l‘Δ‘p‘d‘n‘c‘c‘ C‘Δ‘b‘n‘l‘c‘  
C‘n‘r‘d‘n‘r‘c‘n‘r‘c‘ C‘n‘d‘n‘m‘c*



## የጥናት የሚያስተካክለው ስም – በአዲስ አበባ የሚያስተካክለው ስም

## ປ້ອງກັນ ດຳເນີນ ອະດຸນ ຕອບທີ່

### Final Technical Submission

- 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
- ແລ້ວ ເມື່ອ ປູກກົມມືຂອງ ດຳເນີນ ອະດຸນ ດີເລີຍ  
ຄວາມຮັດຂອງ ຢັດຕະໂລກ ສະຫຼຸບຜົນຕະຫຼາມ  
ອືນດາຕະຫຼາມ ມີໄດ້ກັບຈະກິດຕະຫຼາມ  
ທະວາງໄດ້ ພາຍໃນສະຫຼຸບຜົນຕະຫຼາມ
- ໃນກວດເລືອກມີມີຫາວັນ  
ດຳເນີນ ດັ່ງນີ້ ຢູ່ກົມມືຕະຫຼາມ  
ສະຫຼຸບຜົນຕະຫຼາມ ອັນດາຕະຫຼາມ  
ມີໄດ້ກັບຈະກິດຕະຫຼາມ ທີ່ກົມມື  
ຢູ່ກົມມື ບໍ່ໄດ້ວັນນີ້ ໂດຍບໍ່ໄດ້ກັບຈະກິດຕະຫຼາມ  
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- ເພື່ອມີການ  
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ທະວາງໄດ້ ພາຍໃນສະຫຼຸບຜົນຕະຫຼາມ  
ອືນດາຕະຫຼາມ ມີໄດ້ກັບຈະກິດຕະຫຼາມ  
ຢູ່ກົມມື ທີ່ກົມມື



የዚህና የሚከተሉት ስርዓት አንቀጽ በመሆኑ የሚከተሉት ስርዓት አንቀጽ በመሆኑ

## Outstanding and New Technical Comments

1 የሚከተሉት ስርዓት አንቀጽ በመሆኑ የሚከተሉት ስርዓት አንቀጽ በመሆኑ

2 የሚከተሉት ስርዓት አንቀጽ በመሆኑ የሚከተሉት ስርዓት አንቀጽ በመሆኑ

3. የሚከተሉት ስርዓት አንቀጽ በመሆኑ የሚከተሉት ስርዓት አንቀጽ በመሆኑ

1 Outstanding Information Request

2 Outstanding Technical Comments

3 New Technical Comments

## KivIA-IR#2

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

- KivIA is concerned with the ongoing surface contact water discharges to Meliadine Lake
- KivIA requests Agnico Eagle divert as much surface contact water from CP1 to Melvin Bay as possible
- KivIA 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
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## KivIA-TC-3 (KivIA-TC- 16) Δc<sup>a</sup>c-A

## Monitoring of effects of AWAR and waterlines on caribou movement







## KivIA-New-TC#1

### ӦӦӦՃՃՈՇՀՌԱԾՎԵՎՈՒԹՅՈՒՆ ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ

### Clarification of Tiriganiaq-2 Saline Groundwater Management

- The Adaptive Management Plan did not clarify how excess saline groundwater stored in Tiriganiaq-2 will be handled until the waterlines are available and Tiriganiaq-2 is dewatered.
- This lack of clarity introduces uncertainty as to how Normal Operating Conditions will be defined under the Adaptive Management Plan until Tiriganiaq-2 has been dewatered via the waterlines.
- KivIA requested additional clarity within the Plan
- Հիմքությունը՝ Կատարած է Հայաստանի Հանրապետություն առաջարկությունը՝ ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ
- Կատարած է Հայաստանի Հանրապետությունը՝ ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ
- Քայլաբար կատարած է Հայաստանի Հանրապետությունը՝ ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆ









## KivIA-New-TC#2

‘’Brien Lake Discharge

### 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
  - d&gt;σ⁹ CL⁹P⁹ σ⁹ C⁹R⁹A⁹ A⁹L⁹ b⁹R⁹C⁹σ⁹<  
C⁹D⁹U⁹S⁹ A⁹P⁹D⁹L⁹D⁹b⁹C⁹C⁹  
ΔL⁹U⁹A⁹E⁹b⁹P⁹D⁹U⁹A⁹J⁹ A⁹L⁹ C⁹D⁹⁹  
P⁹D⁹L⁹A⁹S⁹U⁹P⁹ R⁹A⁹σ⁹ J⁹ A⁹d⁹σ⁹R⁹C⁹  
P⁹L⁹D⁹L⁹A⁹R⁹L⁹C⁹ d&gt;σ⁹A⁹σ⁹ J⁹ A⁹C⁹b⁹n⁹A⁹b⁹L⁹C⁹ CP1  
P⁹D⁹R⁹L⁹A⁹R⁹d⁹ CP1-Γ⁹ D⁹c⁹C⁹A⁹r⁹U⁹S⁹σ⁹  
A⁹L⁹C⁹D⁹⁹ d&gt;σ⁹ C⁹A⁹l⁹ C⁹R⁹A⁹J⁹C⁹C⁹D⁹⁹.
  - P⁹E⁹C⁹Δ⁹ A⁹D⁹C⁹ b⁹C⁹I⁹A⁹U⁹R⁹C⁹ A⁹C⁹P⁹A⁹F⁹C⁹  
A⁹P⁹d⁹d⁹σ⁹ A⁹C⁹A⁹σ⁹b⁹P⁹A⁹U⁹ A⁹R⁹A⁹C⁹P⁹σ⁹A⁹  
A⁹d⁹J⁹C⁹L⁹P⁹D⁹U⁹ A⁹D⁹C⁹U⁹σ⁹ J⁹ A⁹C⁹A⁹σ⁹ C⁹A⁹d⁹S⁹  
A⁹P⁹R⁹A⁹Y⁹σ⁹ J⁹ A⁹D⁹C⁹U⁹σ⁹ J⁹ A⁹P⁹L⁹J⁹  
P⁹A⁹A⁹d⁹L⁹U⁹A⁹ 1-Γ⁹ P⁹A⁹A⁹d⁹L⁹R⁹U⁹C⁹-1-Γ⁹  
P⁹d⁹σ⁹ J⁹ C⁹d⁹A⁹r⁹ A⁹d⁹C⁹r⁹U⁹b⁹P⁹  
A⁹d⁹J⁹C⁹L⁹P⁹D⁹U⁹A⁹σ⁹ A⁹D⁹C⁹U⁹σ⁹ J⁹  
A⁹d⁹U⁹A⁹P⁹
  - A⁹P⁹d⁹d⁹σ⁹ A⁹R⁹>C⁹





# KivIA-New-TC#2

‘bΓ<sup>a</sup>σ<sup>b</sup>’ ⊢ ◇▷<sub>C</sub> ⊢ □σ<sup>b</sup>

## 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





## KivIA-New-TC#3

ປຸ່ມໍາຫຼວກສ້າງ ດລກໍາໃຈຊ່າງ ພາກອາຍຸໄດ້ກົດເວັບໄສ

### Limits on Freshwater Discharge to Melvin Bay

- The adaptive management plan sets a limit on surface contact water within the waterlines at 6,000 m<sup>3</sup>/day, 50% of the initially proposed maximum waterline capacity of 12,000 m<sup>3</sup>/day
- Limiting surface contact water to 50% flow in the waterlines increases the likelihood that discharges to Meliadine Lake will occur given there is relatively more surface contact water that will require management and discharge as compared to saline water in even a normal year as per the water balance.
- ຂໍພະນັກງານທີ່ຈະ ດໍາລັດຕໍ່ກົດເວັບໄສ ທີ່ຈະ ດັກໂລຢີໃຫຍ່ຕໍ່ມືຖຸ ດັກໂລຢີ 6,000 m<sup>3</sup>/day ຖະໜາທີ່ກ່ຽວຂ້ອງມືຖຸ 12,000 m<sup>3</sup>/day
- ບຸ່ມໍາຫຼວກສ້າງ ທີ່ຈະ ດັກໂລຢີ 50% ດໍາລັດຕໍ່ກົດເວັບໄສ ທີ່ຈະ ດັກໂລຢີ ດໍາລັດຕໍ່ກົດເວັບໄສ ທີ່ຈະ ດັກໂລຢີ ດັກໂລຢີ 6,000 m<sup>3</sup>/day ຕໍ່ມືຖຸ ດໍາລັດຕໍ່ກົດເວັບໄສ ທີ່ຈະ ດັກໂລຢີ 12,000 m<sup>3</sup>/day



## KivIA-New-TC#3

የኢትዮጵያውያን ፌዴራል የሚያስፈልግ ንግድ ሆኖ ስልጣን በኋላ እንደሚገኘው ስለመስጠት ተከተለዋል

### 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.
- የዚሁ ስሜ ዓይነት አይነት መሆኑን በኋላ እንደሚገኘው ስለመስጠት ተከተለዋል  
አንቀጽ ከፍተኛ የሚያስፈልግ ንግድ ሆኖ ስልጣን በኋላ እንደሚገኘው ስለመስጠት ተከተለዋል  
የሚሸጠውን አንቀጽ እንደሚገኘው ስለመስጠት ተከተለዋል
- የዚሁ ስሜ ዓይነት አይነት መሆኑን በኋላ እንደሚገኘው ስለመስጠት ተከተለዋል  
አንቀጽ ከፍተኛ የሚያስፈልግ ንግድ ሆኖ ስልጣን በኋላ እንደሚገኘው ስለመስጠት ተከተለዋል  
የሚሸጠውን አንቀጽ እንደሚገኘው ስለመስጠት ተከተለዋል





◀Λণ্ণଦିତ୍ ?  
Questions?