



# MELIADINE TYPE A WATER LICENSE

Community Meeting  
February 10-11, 2015,  
Rankin Inlet, NU



Kivalliq Inuit Association

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# Overview

- ❖ Our review was comprised of 27 separate information requests and technical comments
- ❖ We have communicated with AEM over the seven months, clarifying issues and reaching resolutions on almost all issues
- ❖ All resolutions are documented for the public record:
  - In our technical submissions
  - Through a list of technical commitments AEM has made to improve the project.
    - These commitments are the result of our discussions with them and are recorded by the Nunavut Water Board

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# Overview

- Our technical comments addressed issues regarding:
  - Saline and freshwater discharges to the receiving environment,
  - Modelling,
  - Waste management,
  - Dust management, and
  - Environmental monitoring

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# Overview

- ✦ Prior to the public hearings,
  - 22 of our issues had been fully resolved
  - 3 issues additional issues were resolved pending our review of documents AEM was required to submit prior to the Public Hearings
- ✦ We are close to resolving our final 2 issues with AEM and hope to do so during these meetings

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# Overview

✦ This presentation accompanies our submission to the Nunavut Water Board on December 17, 2015

- “*R151217\_J150077\_Meliadine WL A Public Hearing Technical Submission*”
- That submission documents our concerns and resolutions as of the submission date

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# Guiding Principles

## ❖ Our review is guided by

- Nunavut Water Board's (NWB) water quality framework
  - protect, manage and regulate freshwaters in Nunavut in a manner that will provide the optimum benefits for the residents of the territory in particular and Canadians in general
- The Nunavut Land Claims Agreement, and
- The right of Kivalliq Inuit to minimized changes to the environment

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# OVERVIEW OF CONCERNS

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# Freshwater Quality

## Concerns

- ❖ KIA-WL-04, 06, 11, 19, 22, 23
- ❖ Freshwater quality in the collection ponds at closure
- ❖ Use of Inuit Qaujimajatuqangit to monitor the freshwater environment
- ❖ Contact water at Itivia Harbour
- ❖ Discharges from the Meliadine sewage treatment plant
- ❖ Adequate treatment of process water prior to discharge

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# Freshwater Quality

## Status

### ✦ AEM has agreed to:

- Update standards for freshwater in the collection ponds after the mine has closed
- Work with the KIA to incorporate Inuit Qaujimajatuqangit into monitoring and determining the significance of observed changes
- Continue to use established standards when dealing with contact water at Itivia
- Treat process and contact water as needed to ensure it is safe for discharge to Meliadine Lake

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# Saline Water

## Concerns

- ❖ KIA-WL-05
- ❖ Operations at Meliadine will come into contact with saline groundwater below the permafrost
- ❖ There is currently no long term plan to safely dispose of the saline groundwater

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# Saline Water

## Status

- ❖ The KIA have required that a saline water management plan is developed prior to any discharges to the environment
- ❖ Environment Canada will need to provide AEM with timely guidance based on the Metal Mining Effluent Regulations so that the project can safely proceed as scheduled

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# Modelling

## Concerns

- ❖ KIA-WL-03, 09, 14, 24
- ❖ The presented water balance did not account for a range of potential environmental conditions
- ❖ There was uncertainty in the model predicting concentrations of the effluent in Meliadine Lake and how that effluent will mix in the receiving environment
- ❖ AEM's assessment of water quality in the collection ponds after the mine has closed needed further detail

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# Modelling

## Status

- ✿ AEM has presented water balances under additional scenarios:
  - Extreme wet and extreme dry
- ✿ AEM has provided more information on effluent model inputs and conducted additional modeling under alternate scenarios demonstrating effluent diffused to Meliadine Lake will meet water quality guidelines for safety
- ✿ AEM will revisit the water quality predictions for closure as more data is generated at the site
  - Information available at this time does not indicate a significant concern for the environment

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# Waste Management

## Concerns

- ❖ KIA-WL-01, 02, 13, 21, 27
- ❖ AEM will only use overburden at closure to cap the Tailings Storage Facility
  - Overburden contains natural sources of vegetation that could also be used to revegetate the site at closure
- ❖ There was uncertainty in the application as to when revegetation of the site could be expected after closure
- ❖ Concerns regarding the timeline for progressive reclamation of the Tailings Storage Facility
- ❖ Biodegradation of contaminated soil in the landfarm may not proceed fast enough to ensure no residual effects of the project

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# Waste Management

## Status

- ❖ AEM has investigated additional means to store and use overburden to restore the mine site.
  - The risks associated with additional storage outweigh the benefits of using overburden at closure
- ❖ Studies are being undertaken in collaboration with the University of Saskatchewan to assess revegetation and potential timelines at the site
- ❖ AEM provided further information regarding biodegradation rates and potential soil amendment options

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  - Soil amendment refers to adding nutrients to increase the rate of degradation

# Dust Management

## Concerns

- ❖ KIA-WL-17, 18, 20, 25, 26,
- ❖ AEM is now dry stacking tailings. This reduces the impact to water but has the potential to generate more dust
- ❖ More detail is required on the dust monitoring program
- ❖ Dust from the ore pile may not be adequately managed at closure
- ❖ AEM is currently intending to use saline groundwater as a dust suppressant along the roads
- ❖ Dust from the bypass road near the hamlet may reach Nipissar Lake

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# Dust Management

## Status

- ❖ AEM has committed to provide more detailed dust monitoring before any disposal of tailings
- ❖ Criteria triggering dust management at closure will be provided for KIA review
- ❖ AEM committed to apply to the Government of Nunavut to permit saline groundwater from the Meliadine site as a dust suppressant
- ❖ Alternative bypass routes are being explored to safeguard Nipissar Lake

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# Environmental Monitoring

## Concerns

- ❖ KIA-WL- 07, 08, 10, 12, 15, 16
- ❖ Insufficient monitoring locations were proposed for effluent discharges to Meliadine Lake near the diffuser
- ❖ No monitoring locations were proposed near Itivia Harbour
- ❖ Uncertainty existed in the quality control procedures and for the environmental monitoring analytical standards
- ❖ The fish tissue baseline had not been updated
- ❖ Some water quality monitoring locations were not part of the adaptive management framework

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# Environmental Monitoring

## Status

- ❖ AEM has committed to confirm shape of the effluent plume and an acceptable response framework if the plume behaves differently than expected
- ❖ AEM is exploring monitoring locations near Itivia Harbour to characterize project related impacts
- ❖ AEM has included additional detail in the quality assurance and quality control response framework
- ❖ AEM is working with the KIA to ensure the analysis of water quality is sensitive enough to detect changes in the environment
- ❖ AEM has collected more fish tissue samples and will update the baseline
- ❖ Sample locations of concern have now been included in the adaptive management framework

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# Security

❖ The Kivalliq Inuit Association, Indigenous and Northern Affairs Canada, and AEM have agreed to a security estimate of \$49,554,667

- This amount is sufficient to complete the required reclamation as outlined in the AEM Closure and Reclamation Plan should that become necessary

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# Security Management Agreement

- ❖ The Kivalliq Inuit Association and Indigenous and Northern Affairs Canada are working to finalize a Security Management Agreement

- ❖ The current draft agreement supports a 50:50 split in the security to be held equally by the Kivalliq Inuit Association and Indigenous and Northern Affairs Canada

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# CONCLUSION

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AEM has worked with the KIA to resolve our concerns and we hope to be in agreement on all issues at the conclusion of the public hearings or, if not, to provide the NWB with evidence to support KIA concerns in their decision.

# QUESTIONS?

