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Environment and Climate Change Presentation to the Nunavut Water Board Regarding Doris North Project Type A Water Licence Amendment Application

Nunavut Water Board Technical Meeting

Cambridge Bay, Nunavut

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EPOD

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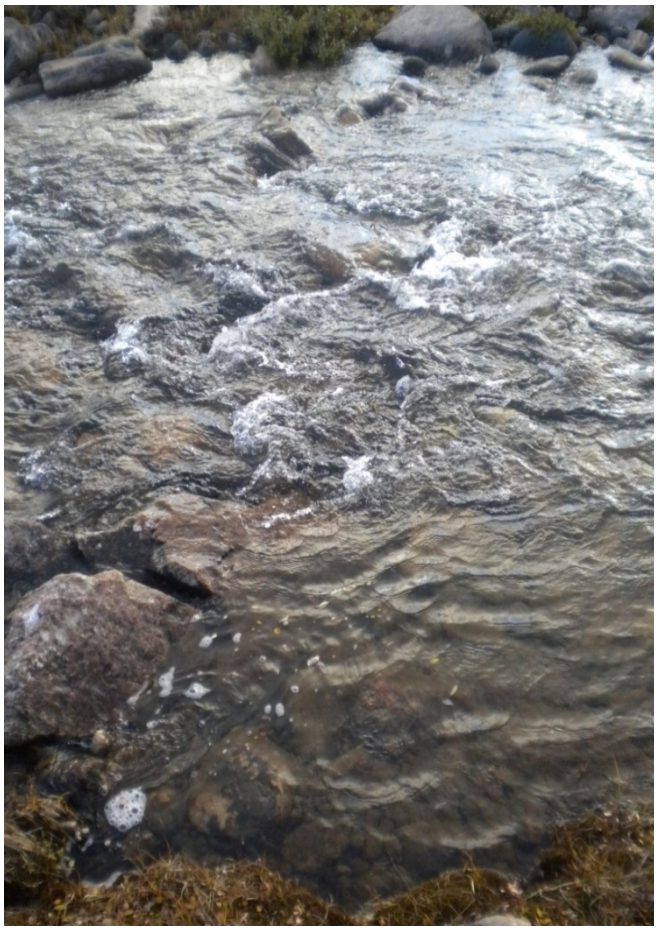
ECCC's Mandate

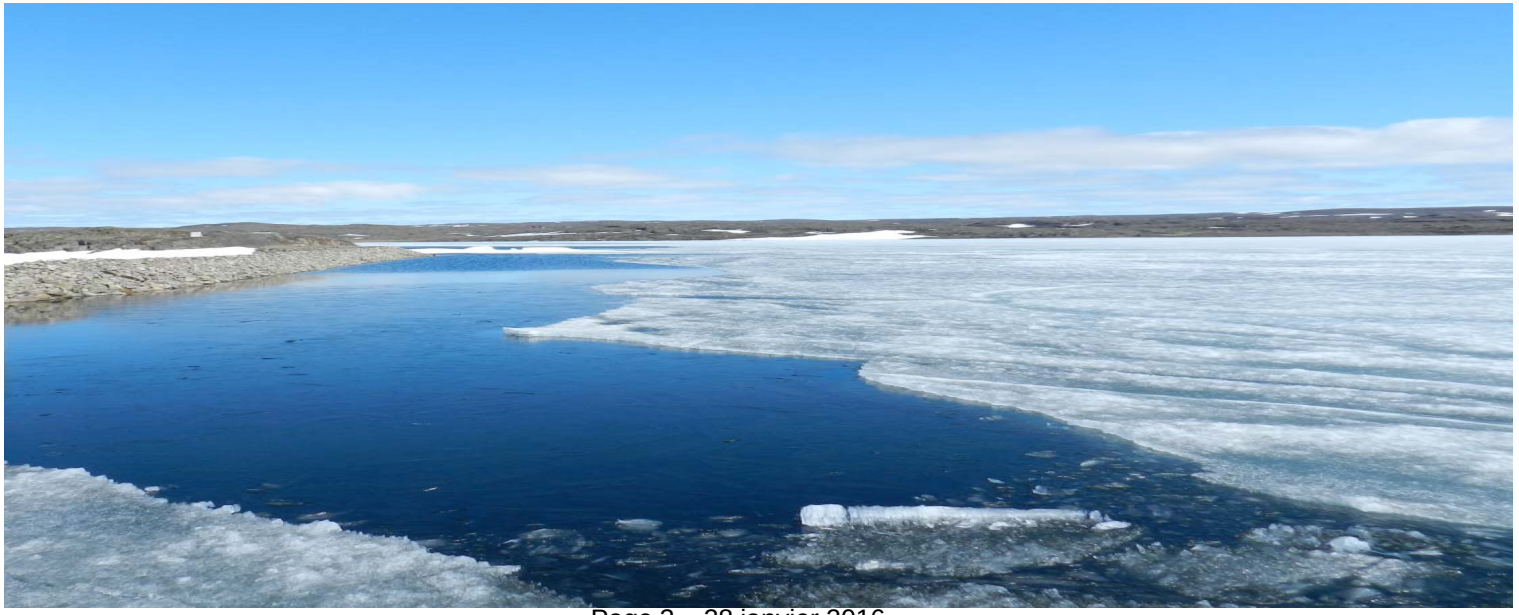
- *Department of the Environment Act*
  - General responsibility for environmental management and protection
  - Preserve and enhance water, air, and soil quality
  - Conserve and protect Canada's water resources
  - Provide meteorological information
  - Coordinate environmental policies and programs



How ECCC Fulfills its Mandate

Other Relevant Acts and Regulations:

- *Canadian Environmental Protection Act*
- *Fisheries Act* – pollution prevention provisions



ECCC's Role in Nunavut

- Review development and remediation proposals for environmental impacts falling within ECCC's mandate.
- Provide recommendations and expert advice to the Nunavut Impact Review Board and Nunavut Water Board.
- Enforce compliance with legislation that falls within ECCC's mandate.

ECCC's Recommendations

- ECCC-1: Sampling Locations in Roberts Bay
  - Recommendation: Discuss how ocean currents and tides will be incorporated into the selection of sampling locations to ensure the sampling program can detect project related effects.

- ECCC-2: Contaminants of Concern in Mine Effluent
  - Recommendation: Identify, analyse, and model all contaminants of potential concern in the combined effluent, including those for which there are no guidelines. Discuss which parameters have the potential to exceed background or CCME Guidelines in the receiving environment and determine whether treatment is necessary.

ECCC's Recommendations

- ECCC-3: Groundwater Quality
  - Recommendation: Concentrations of ammonia, iron, and strontium from groundwater should be incorporated into the overall site water quality model. Identify, if necessary, how these parameters will be managed/treated in the effluent.

- ECCC-4: Effluent Quality Modelling for Free Cyanide, Mercury, and Selenium
  - Recommendation: Additional sampling should be completed for these parameters and analyzed using lower detection limits so that effluent quality modelling is accurate. If exceedances are predicted, describe how these parameters will be managed/treated.

ECCC's Recommendations

- ECCC-5: Dissolved versus Total Metal Concentrations
  - Recommendation: Describe how the groundwater data has been interpreted in order to allow comparison of dissolved values to guidelines based on total values.

- ECCC-6: CCME Guidelines and MMER Discharge Limits
  - Recommendation: Discuss how the chromium marine guideline used was determined and clearly differentiate between how CCME guidelines and MMER discharge concentrations are applied.

ECCC's Recommendations

- ECCC-7: Toxicity Testing Results
  - Recommendation: Provide laboratory results on the ground water toxicity testing conducted in October 2010. Discuss the location, depth, and chemistry of the groundwater sample used. Discuss any additional testing that is proposed to assess toxicity of "end of pipe" effluent.

- ECCC-8: Aquatic Effects Monitoring Program
  - Recommendation: Provide an updated Aquatic Effects Monitoring Program for review.

ECCC's Recommendations

- ECCC-9: Water Licence Limits
  - Recommendation: Discuss and propose potential changes to water licence criteria including: suitable sampling/compliance locations, additional parameters to be included in the licence, applicability of current licence limits to the new discharge location and to effluent quality.

- ECCC-10: Sediment Quality and Effluent Buoyancy
  - Recommendation: Discuss how effluent will be managed such that it remains buoyant at all times. Discuss potential mitigation measures if effluent is more dense (and less buoyant) than the receiving environment and interacts with the sediments.

ECCC's Recommendations

- ECCC supplementary comment - Minewater Management
  - Recommendation: development of alternative strategies to manage saline minewater.

THANK YOU