



# Ekati Diamond Mine Water Licence Renewal

W2022L2-0001

June 13-15, 2023

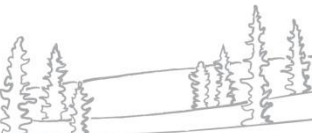
# Overview

- Standard Definitions and Conditions
- Water Volumes and Back-Flooding Plan Approval
- Regulation of Seepage
- Metal and Diamond Mining Effluent Regulations (MDMER)
- Aquatic Effects Re-Evaluation Report Frequency
- Copper Concentrations
- Classification of Dams
- Water Use Fees
- Securities



# Standard Definitions and Conditions

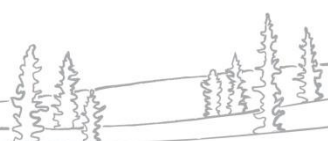
- Not updated in Water Licence submitted with application.
- In response to IR#9, Arctic Canadian Diamond Company (Arctic) provided an updated draft Water Licence and consideration of the Standard Definitions and Conditions.
- GNWT-ECC appreciates the inclusion of Standard Definitions for:
  - Acid Rock Drainage
  - Maximum Grab Concentration
  - Processed Kimberlite
  - Unauthorized Discharge
  - Waste Rock



# Standard Definitions and Conditions

- GNWT-ECC does not support Arctic's rationale for excluding Standard definitions for:
  - Average Concentration
  - Maximum Average Concentration
  - Construction
  - Minister
  - Settling Ponds

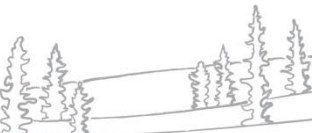
**1. GNWT-ECC recommends that the definitions for Average Concentration, Maximum Average Concentration, Construction, Minister, and Settling Ponds be revised to be in line with Standard Water Licence Definitions.**



# Standard Definitions and Conditions

- Arctic's rationale that the current definitions address the Standard Definitions site specifically is not clear to GNWT-ECC.
- Definitions for "Sumps" and "Collection and Settling Ponds" contain overlapping language.

**2. GNWT-ECC recommends that the definition of "Collection and Settling Ponds" or "Settling Ponds" include sumps and that the definition be revised to ensure it clearly includes all aspects of runoff and seepage collection at the Ekati Mine.**



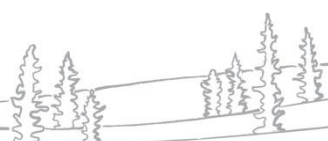
# Standard Definitions and Conditions

- Arctic's draft Water Licence does not include a definition for "Engineer of Record".

## **3. GNWT-ECC recommends that the Standard Definition for "Engineer of Record" be used in the Water Licence.**

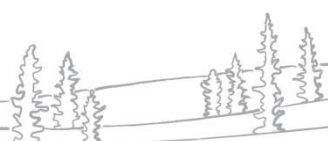
- Arctic has not provided appropriate alternatives, or sufficient rationale for excluding the following Standard Conditions:

**GNWT-ECC also recommends that Standard Conditions be used for B.10, D.2, F.20, G.1, G.3, G.4, G.5, and H.1.**



# Water Volumes

- Arctic proposed a new condition for the withdrawal of Water from several sources for “reclamation or operational reasons.”
- GNWT-ECC notes that the specific wording of the proposed condition does not include a limit on the timing for the use of the proposed volumes.
- Without a timeframe it is difficult to evaluate whether the proposed total withdrawal limits will be protective of the specified water sources.
- Required for the determination and payment of Water Use Fees.



# Water Volumes

- Including maximum quantities per unit time in the Water Licence will ensure there is a clear limit encompassing all possible withdrawals from a given source.
- Arctic should propose water use limits to ensure that instantaneous flow at outflow locations will not decrease by more than 10% and show how it was determined.
- “Cumulative flow alterations <10% in amplitude of the actual (instantaneous) flow in the river relative to a “natural flow regime” have a low probability of detectable impacts to ecosystems that support commercial, recreational or Aboriginal fisheries” (DFO, 2013).





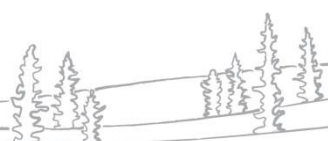
# Water Volumes

- GNWT-ECC questioned Arctic on the proposed Maximum Quantity of Water Use (22,000,000 m<sup>3</sup>) for Upper Exeter Lake compared to the Upper Exeter Lake capacity noted in the Application Form (11,921,257 m<sup>3</sup>).
- GNWT-ECC remains concerned there may be an error in the noted capacity as 11,921,257 m<sup>3</sup> and a surface area of 13.2 km<sup>2</sup> suggest an average depth of only 0.9 m.
- IR #2 required Arctic to provide additional baseline information on source lakes proposed for pit back-flooding. GNWT-ECC was unable to locate data on the capacity of Upper Exeter Lake.



# Water Volumes

- 4. GNWT-ECC recommends that the Board ensure there is a time limit (e.g., m<sup>3</sup>/year) on the use of water outlined in proposed Part D, Condition 4 in the draft Water Licence.**
- 5. GNWT-ECC recommends that the Board ensure Arctic proposes water use limits for Part D, Condition 4 with appropriate rationale to show that instantaneous flow at outflow locations will not decrease by more than 10%.**



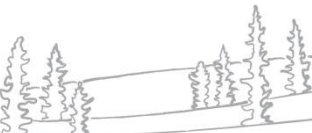
# Water Volumes

**6. GNWT-ECC recommends that the Board ensure Arctic confirms that the volumes in the draft Water Licence and Application Form are accurate, and free of errors.**



# Back-Flooding Plan Approval

- Arctic has requested a water use increase associated with the back-flooding of Pigeon Pit.
- Water withdrawal from Upper Exeter Lake to back-flood Pigeon Pit is contingent on the Board's decision on the renewal application.
- The Board should not approve the Back-flooding Plans for Fox Pit and Pigeon Pit until the Water Licence renewal has been approved by the Minister. Further, in response to IR #9, Arctic proposed a new schedule outlining requirements for the Back-flooding plans and the requirements for the plans will not have been finalized until the Water Licence is approved.



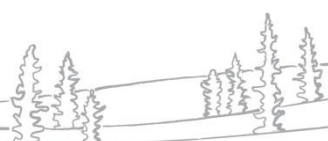
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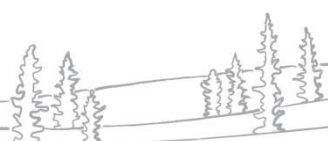
# Regulation of Seepage

- Arctic has proposed to develop terrestrial quality objectives (TQO) to regulate seepage discharge to the receiving environment and include these TQO in the Waste Rock and Ore Storage Management Plan (WROMP).
- The GNWT-ECC maintains the position that as seepage discharge is “waste” as defined in the *Waters Act*, the discharge of seepage at Ekati should be regulated with effluent quality criteria (EQC) in the body of the Water Licence.



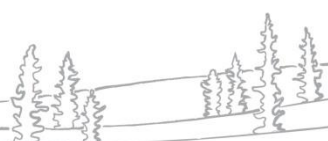
# Regulation of Seepage

- The most recent seepage survey reporting identifies a total of 12 Seeps of Potential Concern (SoPC):
  - For constituents with an EQC greater than the stated maximum allowable concentration of any grab sample; or
  - A constituent concentration greater than the upper 95th percentile value of the associated Waste Rock Storage Areas (WRSA)s historical dataset on more than one occasion during the two-year period comprising the reporting year plus preceding year.



# Regulation of Seepage

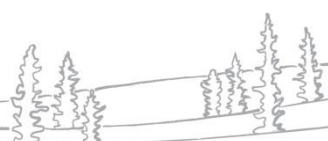
- Arctic states that the current practice of screening WRSA seepage quality sampled at the toe of the WRSA against the EQC in the Water Licence is not appropriate.
- Arctic has proposed a new Water Licence requirement that a WRSA Seepage Quality Evaluation Procedure be submitted for Wek'èezhì Land and Water Board (WLWB) approval as part of the WROMP within 60 days of issuance of the 2023 Renewal.
- The proposed approach is to develop TQO to protect the immediate terrestrial environment that comes in direct contact with seepage.





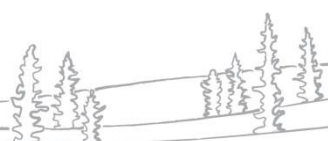
# Regulation of Seepage

- Arctic confirmed that TQO will be enforceable in the same way as EQC, and that they are a “different type of discharge criteria.”
- It is GNWT-ECC’s opinion that Arctic did not provide sufficient rationale for not including TQO as EQC in the Water Licence.
- GNWT-ECC's position remains that runoff and seepage is or, in the absence of sufficient evidence, may be “Waste” and, as such, must or should be regulated by EQC in a Water Licence.



# Regulation of Seepage

- GNWT-ECC noted several significant concerns with the proposed conceptual framework (GNWT-ECC #12, 15, 16):
  - Lack of detail on the development of the framework.
  - Unspecified distance between loss of seep to ground and receiving waters that warrants sampling.
  - Verification methods to validate that a seep lost to ground is not indirectly depositing into groundwater or a surface water body.
  - Unclear how the proposed TQO differ from EQC as seepage is a waste, and why they are omitted from the body of the Water Licence.



# Regulation of Seepage

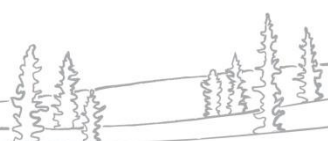
**8. GNWT-ECC recommends that the Board require additional detail on the development and implementation of the Seepage Evaluation Framework from Arctic prior to potentially approving the addition of a new schedule in the Water Licence.**



# Regulation of Seepage

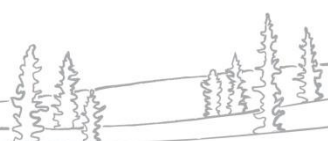
**9. GNWT-ECC recommends that if the Board approves the addition of a new schedule in the Water Licence for the Seepage Evaluation Framework, the following requirements (at minimum) be included:**

- Demonstrate that a given seep does not or will not enter receiving waters (in the event of proposed scenario 1).**
- Reporting on the implementation of the Seepage Evaluation Framework. This could be included as part of the annual seepage report.**



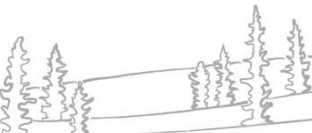
# Enforcement of Terrestrial Quality Objectives

- The regulation of waste must be enforceable for compliance purposes.
- GNWT-ECC maintains that the WLWB should not approve the proposed alternate mechanism to regulate the discharge of waste (i.e., TQO).
- Arctic is delaying any review and approval of the framework and criteria until after the Water Licence is issued. This is not consistent with legislation and how waste is to be regulated.
- Runoff and seepage is or, in the absence of sufficient evidence, may be “Waste” as defined under the Waters Act.



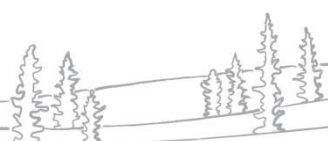
# Enforcement of Terrestrial Quality Objectives

- It remains unclear to GNWT-ECC how the enforcement of TQO would occur to ensure compliance.
- The inclusion of EQC for seepage in the Water Licence ensures that all parties, and the Inspector, have a clear and unambiguous understanding of how the discharge of “Waste” is to be regulated and enforced.
- If the Board is required to or otherwise opts to regulate waste in seeps through EQC or other numerical limits and the seeps may enter receiving waters, the EQC or other numerical limits must be in the body of the Water Licence due to s. 37(a) and 41(2)(b) of the *Waters Act*.



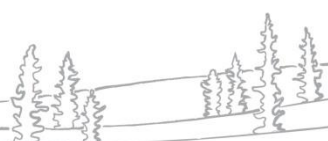
# Enforcement of Terrestrial Quality Objectives

- GNWT-ECC's position that EQC in the Water Licence must or should be used to regulate the discharge of waste aligns with the Land and Water Board (LWB) Waste and Wastewater Management Policy (the Policy) (2023).
  - Arctic has not aimed to demonstrate that seepage is not wastewater. Parties participating in this proceeding agree that seepage is considered wastewater and therefore a potential effluent (s. 4.3.2 of the Policy).
  - The Policy applies a precautionary approach according to the potential for a substance to be waste and in most cases sets EQC for parameters with the potential to adversely affect water quality in the receiving waters.



# Enforcement of Terrestrial Quality Objectives

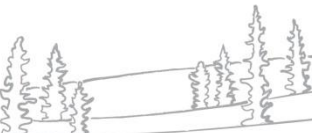
**10. GNWT-ECC recommends that the waste discharged as seepage from WRSAs at the Ekati Diamond Mine be regulated with numeric EQC as a specific condition(s) within the body of the Water Licence.**





# Metal and Diamond Mining Effluent Regulations

- GNWT-ECC questioned Arctic on revising pH limits to be MDMER compliant.
- In response to IR#9, Arctic proposed the following wording:
  - “Proposed condition: e) Any Wastewater or Waste from the Project that enters the Receiving Environment shall have a pH between 6.0 and 9.0, or between 5.0 and 9.0 where demonstrated to the satisfaction of the Inspector that pH below 6.0 is caused by the natural environment;”
- Proposed wording is not compliant with MDMER



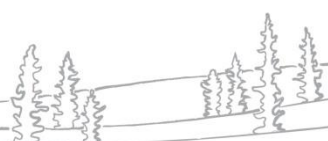
# Metal and Diamond Mining Effluent Regulations

**11. GNWT-ECC recommends that the pH for all surface runoff and seepage be revised in the Water Licence to be compliant with MDMER (pH between 6.0 and 9.0).**



# Aquatic Effects Re-Evaluation Report Frequency

- Arctic proposes to reduce the frequency of submissions of the AEMP Design Plan and Aquatic Effects Re-Evaluation Report from “every three years, or as directed by the Board...” to “every six years, or as directed by the Board...”.
- GNWT-ECC does not support the “advanced maturity” of the AEMP as appropriate rationale for the frequency reduction.
- GNWT-ECC appreciates the role of the Aquatic Response Framework (ARF) to examine changes in the receiving environment. Depending on results of the next Re-Evaluation Report, Arctic could request Board approval of a revised submission frequency for future reports, at that time.



# Aquatic Effects Re-Evaluation Report Frequency

**12. GNWT-ECC recommends that the Board maintain the current wording of Part J, Conditions 4 and 5 requiring Arctic to submit an AEMP Design Plan and Aquatic Effects Re-Evaluation Report “Every three years, or as directed by the Board”.**

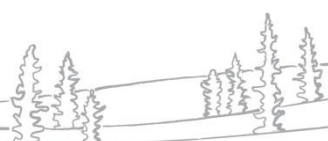
# Copper Concentrations

- GNWT-ECC noted concerns around copper concentrations in the downstream receiving environment, potentially a result of mine activity.
- In response to IR#10, Arctic provided evidence that during the open water season, copper concentrations are not significantly different.
- Based on this information, Ekati does not appear to be a significant source of copper in the downstream environment at this time.
- GNWT-ECC will be evaluating the AEMP and water quality in SNP stations for copper going forward to assess any mine related influences.



# Classification of Dams

- To GNWT-ECC's knowledge, the dams at Ekati have been in place and performing well for an extended period (10+ years) and many will be decommissioned at closure.
- Considering the apparent lack of issues with the dams to date, GNWT-ECC does not see any issue with waiting for a detailed response as part of the 2023 Annual Geotechnical Inspection and reviewing at that time, as per the Board's decision and direction on this item.



# Water Use Fees

- GNWT-ECC provided its position on how water use fees for back-flooding the pits could be incorporated into the Water Licence.
- GNWT-ECC reviewed the proposed conditions submitted by Arctic on this matter and supports the draft condition. GNWT-ECC has no further comment on this matter.
- GNWT-ECC will comment on the draft Water Licence to confirm to the Board the acceptability of the proposed conditions.



# Securities

- GNWT-ECC understands the Board is reviewing an updated final estimate of overall site security submitted by Arctic and will issue a decision shortly.
- No changes to the existing liability for the site based on the scope of the Water Licence Renewal.
- Updated Interim Closure and Reclamation Plan public review is ongoing and will inform changes to the security to cover future liabilities.
- GNWT-ECC has not provided an updated security estimate as part of this proceeding and will continue to participate in any concurrent or future Board processes related to securities and site liabilities.





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