Crown-Indigenous Relations and Northern Affairs Canada
Relations Couronne-Autochtones et Affaires du Nord Canada

Water Resources Division
Resource Management Directorate
Nunavut Regional Office
P.O. Box 100
Iqaluit, NU, X0A 0H0

Your file - Votre référence
2AM-MEL1631
Our file - Notre référence
CIDM#1287029

July 20, 2020

Mr. Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
E-mail: licensing@nwb-oen.ca

Re: Crown-Indigenous Relations and Northern Affairs Canada Reply to Agnico Eagle Response to Comments on 2AM-MEL1631 Design Report for Saline Effluent Treatment Plant (SETP) Upgrade and Operation & Maintenance Manual.

Dear Mr. Dwyer,

Thank you for your July 15, 2020 email invitation to confirm if Agnico Eagle (AEM) response addresses Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) comments on the above-noted design report and operation & maintenance manual.

CIRNAC reviewed AEM response and would like to provide the following additional comments to the Nunavut Water Board for consideration.

1. Treatment Objectives of SETP: pH

In its original submission, CIRNAC recommended that the effluent treatment objective for pH be revised from between 6 and 9 to between 7.0 and 9.0, unless it can be demonstrated that the lower pH will not have a significant negative impact on the marine ecosystem.

AEM stated in its response that *"… the Modelling Assessment of Groundwater Discharge into the Melvin Bay Marine Environment, Rev B (Appendix D of the approved SETP Design Report 6528-680-132-REP-001, Golder 2019) show that the mixing at the discharge location is high and parameters such as TDS and chloride concentrations, reach the baseline concentration +10% within a few meters distance from the diffusor. Therefore, we expect that the impact of having a pH below 7 will have a very low impact*

on the marine environment" and that *"(T)he pH behaviour in the mixing zone will be further characterized this discharge season during the sampling that will occur in the receiving environment as per the MDMER*."

Although AEM has predicted that concentrations of conservative parameters such as TDS and chloride would be close to baseline values (i.e., ±10%) within a few meters from the diffusor, pH is not a conservative parameter and may behave differently. In the above-quoted AEM response, it is not clear if AEM is implying that proton concentration will be within 10% of the baseline value only a few meters from the diffusor and therefore, the impact of discharging effluent with a pH below 7 will be very low on the marine environment. It is also not clear if AEM is committed to sample the mixing zone during discharge season to confirm its predictions on the parameters, including proton concentrations. CIRNAC requests further clarification from AEM on this issue.

2. Treatment Objectives of SETP: Total Dissolved Solids

In its original submission, CIRNAC noted the absence of the methodology and the design of effluent TDS treatment in the design report and recommended that such information be included.

AEM responded that *"(T)he TDS reduction will be achieved as presented in section 3.6 of the report. (6526-680-132-REP-001), which follows the same approach as described in the approved SETP Design Report from 2019*."

Section 3.6 of the report is reproduced below in its entirety:
"*3.6 PH AND TDS ADJUSTMENT REACTOR*
Treated waters (both from SETP GAC filters and Actiflo) and treated CP1 contact water flow into the pH and TDS adjustment reactor where pH and TDS are adjusted. Sulfuric acid will be used for pH adjustment in this reactor."

CIRNAC does not find this response adequate in addressing CIRNAC comment on effluent TDS treatment.

CIRNAC appreciates the opportunity to participate in this review. If there is any question, please contact me at (867) 975-4555 or david.zhong@canada.ca or Bridget Campbell at (867) 975-4282 or bridget.campbell@canada.ca.

Sincerely,

David Zhong
Regulatory and Science Advisor