



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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May 7, 2020

Robin Ikkutisluk
Administrative Coordinator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
sent via email: licensing@nwb-oen.ca

Your file - Votre référence
3BM-CAM1520

Our file - Notre référence
CIDM#1285013

Re: Crown-Indigenous Relations and Northern Affairs Canada's reply to Government of Nunavut Community and Government Services response to our comments on the Hamlet of Cambridge Bay's renewal application for water licence #3BM-CAM1520

Dear Ms. Ikkutisluk,

Thank you for your April 30, 2020 inquiry on whether the applicant's response addressed the technical review comments submitted by Water Resources Division of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) on March 25, 2020 for the renewal application for water licence 3BM-CAM1520 for Cambridge Bay's municipal undertakings. The applicant's responses addressed our comments, as discussed in this letter using the numbering from our technical review for easier cross referencing.

1. Water quantity requested

March 25, 2020 Recommendation

CIRNAC recommends that the Board and proponent contact the department of Fisheries and Oceans' for further guidance before authorizing or withdrawing the requested quantity of water.

Applicant's response

Authorization to withdraw 257 m3 /day or 94 000 m3 /year from Water Lake requested. The winter lake volume is estimated at 650 000 m3 while the summer lake volume is 1 765 000 m3 . The Fisheries and Oceans' protocol for winter water withdrawal limit is not to exceed 10% of the available water volume. According to the estimate provided, 10% of the winter volume would be 65 000 m3, so the requested quantity is 14.5% of the winter volume.

Our explanation:

- *The winter withdrawal more than 10% of the water is not true.*
- *The winter water withdrawal volume estimate from December – through- April.*

The quantity of winter volume is: 33,754 m³

(Dec 6,898 + Jan 6,472 + Feb 6,386 + Mar 7,040 + Apr 6,958) m³ = 33,754 m³

Reference: Annual Water withdrawal Report 2019 (attached) This conclude that the average withdrawal of water in winter is only 5.20% of the available volume in the Lake. [calculation: (33,754/65,000) x100 = 5.20 %]

The requested water volume of 94,000 m³ is Annual (Jan-Dec) withdrawal, not only for winter season.

CIRNAC reply

CIRNAC thanks the applicant for pointing out we had considered total annual water withdrawal instead of winter water withdrawal when considering the applicability of Fisheries and Oceans' protocol.

The provided explanation addresses the concern CIRNAC had raised.

2. Water quality at waste management facility

March 25, 2020 Recommendation

CIRNAC recommends the licensee explore options to reduce pH of the retention cell effluent to meet licence discharge criteria. Additionally, CIRNAC recommends the licensee explore options to reduce metal concentrations in landfill contact water. CIRNAC also recommends discharge criteria be re-considered to include metal concentrations if applicable, since the effluent tested is in part from a landfill.

Applicant response

The sewage water samples result from CAM-3 within the limit (6-9) states the fact of raw sewage has attained preliminary treatment while staying inside in winter and it leverage the authority to allow for decanting effluent water. The CAM-5 is in the waiting cell (outside) where a possible run-off from nearby Metal waste (metal components) when summer freshet. Also, residual substrate from the previous year decanted effluent results an increase of initial P^H level. Ultimately, this elevated PH also reduced through polishing by sunlight on vegetation enriched wetland and filtration through a gravel layer ex-filtration berm before entering the CAM-6 station area. An increased P^H at CAM-6 perhaps during the early start of decanting and reduces later the full duration of decanting. We note that new recommendation for P^H level 6-10.

The station CAM-4 is inside the Solid Waste facility and required samples only when the water needed to be pumped out into the Lagoon; otherwise, ponding water dries naturally. The Solid waste facility has only house waste (kitchen garbage and food wastes mainly), therefore, trace metal components are not more in the sample.

The Licensee also has started reducing metals heap by crushing down to smaller pieces and burying into trenches on down sides then covering with sand-gravels. These activities will reduce overrun flow into the wetland area. In addition, a peripheral berm

and fence installation is in the plan to be carried with minimal access into the metal dump.

CIRNAC reply

A decreasing of pH at CAM-6 between the start of decanting and later on is not evident in the data included in the 2015-2019 annual reports. The 2019 annual report states the licensee is looking for measures to address the seasonal odour issues from the lagoon when decanting, so perhaps once implemented, these measures could also help reducing pH to within the permissible range.

CIRNAC is satisfied to read that efforts for crushing and burying metals are under way and recommends continued sampling for metals at CAM-6 to monitor impact on metal concentrations in water.

3. Licence term

March 25, 2020 Recommendation

CIRNAC supports the licensee's request for a 10-year term.

Applicant response

The Licensee has submitted all Annual reports of previous years including 2019. These Annual reports has covered and reflected annual water supply, sewage waste deposition, O&M manuals and any other information requested by the CIRNAC inspector through annual site visits.

CIRNAC reply

No further comment.

If there are any questions or concerns, please contact me at (867) 975-3876 or by e-mail at sarah.forte@canada.ca.

Sincerely,



Sarah Forté
Water management specialist