

Environmental Protection Operations Directorate
Prairie & Northern Region
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Yellowknife, NT X1A 2P7

ECCC File: 6200 000 022/004
NWB File: 3BM-COR1521



July 19, 2021

via email at: licensing@nwb-oen.ca

Richard Dwyer,
Manager Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Richard Dwyer

RE: 3BM-COR1521 – Hamlet of Coral Harbour – Water License Renewal Application

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) regarding the above-mentioned Hamlet of Coral Harbour renewal application for water license 3BM-COR1521. You will find our Final Written Submission attached.

ECCC's specialist advice is based on our mandate pursuant to the *Canadian Environmental Protection Act* and the pollution prevention provisions of the *Fisheries Act*.

The following comments are provided:

1. Topic: Proposed water licence modification re: Waste records

Reference(s):

- Plan for Compliance License, No: 3BM-COR1521 (2021)
- Water licence, Plan For Compliance, Part B-1-d

Comment:

Under the current license conditions, the Licensee is required to report the daily, monthly and annual quantities of waste discharged at site. Due to funding limitations, the Licensee is requesting modifications to Water Licence condition Part B-1-d, to report monthly and annual sewage quantities, and annual solid waste quantities.

ECCC Recommendation(s):

ECCC is not opposed to the Licensee's request that water licence condition Part B-1-d be modified to monthly and annual sewage quantities, and annual solid waste quantities.



2. Topic: Sludge management

Reference(s):

- Plan for Compliance License, No: 3BM-COR1521 (2021)
- Water licence, Part H-7
- Operation and Maintenance Plan (O&M) for Sewage Disposal Facilities (SDF) (2021)

Comment:

The O&M Plan provides minimal information regarding sludge management.

ECCC Recommendation(s):

ECCC recommends that the Licensee provides the most recent sludge monitoring results and estimate when sludge removal may be required, based on sludge measurements to date.

3. Topic: Sewage Disposal Facilities; Wetland Assessment Study

Reference(s):

- Operation and Maintenance Plan for Sewage Disposal Facilities (2021)
- Water licence renewal application
- Plan for Compliance License, No: 3BM-COR1521 (2021)
- Water licence, Part H-14

Comment:

Per Section 25 (Proposed Term of Licence), the proposed renewal term is 10 years, expiring in 2031. Section 1.2 (SDF History) of the O&M Plan indicates that the design life of the SDF is to 2028. As the reported design life of the SDF (i.e., 2028) occurs within the requested licence term, the O&M Plan should discuss performance of the SDF beyond the reported design life (i.e., beyond 2028). ECCC notes that the pending Wetland Assessment Study may provide an opportunity to evaluate SDF performance and remaining design life.

ECCC Recommendation(s):

ECCC recommends that the O&M Plan include a discussion of SDF performance beyond the reported design life (i.e., beyond 2028), including whether and how/when SDF design life will be re-evaluated during the water licence term.

ECCC recommends that, in addition to meeting the requirements outlined in condition H-14 of the water licence, the Wetland Assessment Study also: (1) Evaluates the performance and remaining design life of the SDF, and (2) Identifies any opportunities to improve sewage treatment and extend SDF design life.

4. Topic: Reporting monitoring results

Reference(s):

- Water licence 3BM-COR1521

Comment:

ECCC is providing the following recommendation to strengthen the reporting/presentation of monitoring information.

ECCC Recommendation(s):

ECCC recommends that annual water licence reports be required to: (1) Indicate/highlight any water licence exceedances in the tabular summaries; and (2) Discuss monitoring results, including any exceedances, their potential cause(s) and response actions.

5. Topic: Field monitoring

Reference(s):

- Environmental Monitoring Program and Quality Assurance/Quality Control Plan (April 2021)

Comment:

ECCC notes that it is important to record ambient conditions as well as any notable conditions that occur at the time of sampling, in order to support the interpretation of SNP monitoring results.

ECCC Recommendation(s):

ECCC recommends measuring and recording the ambient conditions (including precipitation, wind speed and direction, air temperature, and pH and temperature of receiving waterbody) and any other notable conditions (such as algal growth) at the time of SNP sampling, and use this information to support the interpretation of monitoring data. Field measurements should be set out in the monitoring plan(s) and results provided in annual water licence reports.

6. Topic: Quality Control sampling

Reference(s):

- Environmental Monitoring Program and Quality Assurance/Quality Control (QA/QC) Plan (April 2021)

Comment:

Section 4.2 of the QA/QC Plan describes field blanks as samples used to identify any environmental impacts caused during sample collection or sample transportation. ECCC notes that this definition is not entirely accurate. Field blanks are quality control (QC) samples that monitor for contaminant sources related to the field sampling procedure; whereas travel/trip blanks are used to detect contaminant sources *enroute* between sampling site(s) and the laboratory. Incorporating both field blanks and travel/trip blanks into the QA/QC Plan would allow the Licensee to distinguish between sampling-related and travel-related contaminant sources. The following definitions available at <https://pubs.usgs.gov/wdr/2005/wdr-il-05/misc/qcofples.htm> may assist in updating the QA/QC Plan:

Field blank - a blank solution subjected to all aspects of sample collection, field-processing preservation, transportation, and laboratory handling as an environmental sample.

Trip blank - a blank solution put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

ECCC Recommendation(s):

ECCC recommends the QA/QC Plan be updated to: (1) Define field blanks and travel blanks, in consultation with the analytical laboratory; (2) Incorporate at least one travel blank per sampling event; and (3) Ensure that the QA/QC samples represent at least 10% of the total samples collected.

7. Topic: Drainage from Solid Waste Disposal Facilities (SWDF)

Reference(s):

- Operation and Maintenance Plan for Solid Waste Disposal Facilities (2021)

Comment:

Per Section 1.2 (SWDF History) of the SWDF O&M Plan, “the SWDF is unlined, and a culvert is located within the east berm of the facility allowing water to drain to the tundra wetland”. It is unclear whether SWDF drainage mixes with SDF effluent in the wetland treatment area. ECCC advises that drainage from solid waste disposal facilities may contain contaminants, such as metals, that could interfere with sewage treatment processes.

ECCC Recommendation(s):

ECCC recommends that SWDF drainage and SDF effluent be kept separate, to the extent possible.

8. Topic: Open burning of waste

Reference(s):

- Operation and Maintenance Plan for Solid Waste Disposal Facilities (2021)
- Technical Document for Batch Waste Incineration (Environment Canada, January 2010)
- Environmental Guideline for the Burning and Incineration of Solid Waste (Government of Nunavut – Department of Environment, 2012)

Comment:

Section 1.2 (SWDF History) of the SWDF O&M Plan indicates that open burning of municipal solid waste is practiced within the SWDF when approved in advance. ECCC discourages the practice of open burning because toxic substances (e.g., dioxins/furans, mercury, heavy metals) could be released to the environment. Instead, a controlled incineration that minimizes contaminant releases would be more protective of the environment. Relevant guidance documents are available from ECCC and the Government of Nunavut.

ECCC Recommendation(s):

If the Licensee decides to use a controlled incineration in order to minimize contaminant releases, ECCC recommends that the Licensee consult the following documents to support responsible solid waste management:

1. Technical Document for Batch Waste Incineration (Environment Canada, January 2010)

<https://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=F53EDE13-1#:~:text=Environment%20Canada%20has%20developed%20a,of%20the%20Canada-wide%20Standards>

2. Environmental Guideline for the Burning and Incineration of Solid Waste (Government of Nunavut – Department of Environment, 2012)

<https://www.gov.nu.ca/environment/documents/guideline-burning-and-incineration-solid-waste-2012>

9. Topic: Remaining disposal capacity at Solid Waste Disposal Facilities

Reference(s):

- Operation and Maintenance Plan for Solid Waste Disposal Facilities (2021)

Comment:

The SWDF O&M Plan does not appear to estimate the remaining disposal capacity available at the SWDF.

ECCC Recommendation(s):

ECCC recommends that the Licensee evaluate the remaining disposal capacity available at the Solid Waste Disposal Facilities in order to estimate whether sufficient disposal capacity is available for the duration of the licence term and discuss plans to manage any capacity issues.

10. Topic: General comment

Reference(s):

- Operation and Maintenance Plan for Solid Waste Disposal Facilities (2021)
- Solid Waste Management for Northern and Remote Communities (ECCC, March 2017)

Comment:

ECCC's document "Solid Waste Management for Northern and Remote Communities" provides guidance for managing municipal solid waste in Canada's northern, remote, and small communities.

ECCC Recommendation(s):

ECCC recommends that the Licensee consults ECCC's planning and technical guidance document "Solid Waste Management for Northern and Remote Communities" to support responsible solid waste management. A summary and a link to the full document are available on Environment and Climate Change Canada's website at:

<http://www.ec.gc.ca/gdd-mw/default.asp?lang=En&n=97182135-1>

If you need more information, please contact Jennifer Sabourin at Jennifer.Sabourin@ec.gc.ca.

Sincerely,



Jennifer Sabourin
Environmental Assessment Officer

cc: Jody Small, Acting Head, Environmental Assessment North (NT and NU)