



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
8BC-ERK1621
Our file - Notre référence
GCDOCS#98093838

October 12, 2021

Sylvia Ekelik
Licensing Administrator Assistant
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's Review of the
Licence Renewal Application for Canadian Forces Station Eureka, Ellesmere
Island, Department of National Defence, Type B Water Licence No. 8BC-
ERK1621**

Dear Ms. Ekelik,

Thank you for the September 20, 2021 invitation to review the referenced licence renewal application, submitted by the Department of National Defence, for Type B Water Licence No. 8BC-ERK1621.

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Please find CIRNAC comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me at david.zhong@rcaanc-cirnac.gc.ca or Andrew Keim at andrew.keim@rcaanc-cirnac.gc.ca.

Sincerely,

David Zhong,
Regulatory & Science Advisor



Technical Review Memorandum

Date: October 12, 2021

To: Sylvia Ekelik, Licensing Administrator Assistant, Nunavut Water Board

From: David Zhong, Regulatory & Science Advisor, CIRNAC

Subject: **Crown-Indigenous Relations and Northern Affairs Canada's Review of the Licence Renewal Application for Canadian Forces Station Eureka, Ellesmere Island, Department of National Defence, Type B Water Licence No. 8BC-ERK1621**

Region: Qikiqtani

A. BACKGROUND

Eureka is located approximately 0.8 km north of Slidre Fiord on the west coast of Ellesmere Island within the Qikiqtani Region of Nunavut (Latitude 79°59'20"N/ Longitude 85°56'30"W). The nearest communities to Eureka are Grise Fiord, CFS Alert and Resolute Bay, and are located approximately 450 km, 475 km and 600 km from the station. Eureka has been operational since 1947 and was originally established as a High Arctic Weather Station, and is currently a remote camp maintained by the Department of National Defence (DND) as a military detachment and training area. Eureka is located approximately 2 km from the Eureka High Arctic Weather Station (HAWS) operated by Environment and Climate Change Canada (ECCC).

Eureka is only seasonally active during the summer months, which include June, July and August, and is used by DND, ECCC and arctic research projects (Polar Continental Shelf Project and the Polar Environment Atmospheric Research Laboratory). During the summer months the peak population is 35 people, and on average ranges between 20 to 25 people. People visiting the station can include DND personnel, consultants, contractors, and researchers.

The community at Eureka obtains its drinking water from the ECCC weather station located adjacent to the station. The ECCC's source of freshwater is Station Creek which begins to flow in early June. Water is transported by truck from the ECCC reservoir and stored in a cistern at the station. Water reservoirs in the main building and Weather Heaven supply water to these buildings; there is no water supply (i.e., piping) between buildings.

Waste facilities at Eureka include a Sewage Lagoon and the following three landfills/dumps: landfill, Battery Dump and Barrel Dump. These facilities have been operated under Water Licence 8BC-ERK1621.



On September 9, 2021, DND submitted to the Nunavut Water Board (NWB) its application for the renewal of the Water Licence 8BC-ERK1621 for 5-10 years term. DND has indicated that *“there are no proposed amendments for the NWB to consider in this renewal application. The Operation and Maintenance Plan was reviewed and updated as the only change was that DND retained a new accredited laboratory for analytical services; therefore, the Quality Assurance and Quality Control Plan of the Operation and Maintenance Plan was revised.”*

CIRNAC provides the following comments and recommendations pertaining to the application package. A summary of the subjects of recommendations can be found in Table 1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments can be found in Section C.



Table 1: Summary of Recommendations

| Recommendation Number | Subject |
|-----------------------|--|
| R-01 | In-situ measurements of pH, temperature and conductivity |
| R-02 | Sample duplicates and blanks |
| R-03 | Water usage licence |

B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) provides a list of the documents reviewed under the submission and reference during the review.

Table 2: Documents Reviewed and Referenced

| Document Title | Author, File No., Rev., Date |
|---|--------------------------------------|
| Cover E-mail No Changes to Previous Licence | Nathan Koutroulides, DND, 2021-09-09 |
| Application-for-Water-Licence-Renewal | Donald Henley, DND, 2021-08-26 |
| AR-Plan-Eureka-FINAL | DND, Version 2, 2021-08 |
| Compliance Plan | DND, 2021-06-10 |
| Cover Letter | Nathan Koutroulides, DND, 2021-07 |
| Executive-Summary English | DND, 2021-06-10 |
| Operation and Maintenance Plan | DND, Version 2021, 2021-06 |
| QAQC Plan | DND, Version 3, 2021-08 |
| Renew-Title Page | DND, 2021-09 |
| Spill Contingency Plan | DND, Version 3.2, 2021-06 |



C. RESULTS OF REVIEW

1. In-situ measurements of pH, temperature and conductivity

Comment:

CIRNAC notes that in the QAQC Plan, there is no in-situ measurements of effluent and drainages for sensitive parameters such as pH, temperature and conductivity. Such parameters are important in interpreting the behaviors and assessing the impacts of certain potential contaminants. They are routinely measured in-situ using portable instruments, while conducting water sampling.

Recommendation:

(R-01) CIRNAC recommends that in-situ measurements of parameters such as pH, temperature and conductivity be included in the sampling program.

2. Sample duplicates and blanks

Comment:

On page ten(10) of the QAQC Plan, it is stated: *“(D)uplicate samples and blanks shall be submitted to and analysed by the accredited laboratory to provide an internal (i.e., laboratory) and external (i.e., at time of sampling, shipping) QA/QC check to verify the reliability of the sample results. Duplicates samples shall be collected for approximately 10 percent of the samples.”* Given that the Surveillance Network Program consists of only five(5) water monitoring stations (i.e., a maximum of five(5) samples), it is not clear if any duplicate sample will need to be collected.

Recommendation:

(R-02) CIRNAC recommends that a duplicate sample, a field blank and a travel blank be collected in each sampling event.

3. Water usage licence

Comment:

On page four(4) of the Operation and Maintenance Plan, it is stated: *“(A)ll water used at Eureka is regulated under separate licence issued to EC (Licence 3BC-EUR1116).”* CIRNAC notes that the referred water licence (i.e., 3BC-EUR1116) was expired in 2016.

Recommendation:

(R-03) CIRNAC recommends that a valid water licence be used for water usage.