

Environmental Protection Operations Directorate
Prairie & Northern Region
5019 52nd Street, 4th Floor
P.O. Box 2310
Yellowknife, NT X1A 2P7

ECCC File: 6100 000 001/004
NWB File: 1AR-NAN1419



August 16, 2019

via email at: licensing@nwb-oen.ca

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

Dear Richard Dwyer:

RE: 1AR-NAN1419 – Canzinc Mines Ltd. – Nanisivik Mine Project – Type A Water Licence Amendment and Renewal Application

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) regarding the above-mentioned application. This letter provides ECCC's specialist advice based on our mandate, in the context of the *Canadian Environmental Protection Act* and the pollution prevention provisions of the *Fisheries Act*.

The following comment is provided:

1. Monitoring Frequency

Reference(s)

- Canzinc Mines Ltd. 2019. Type A Water Licence Amendment and Renewal Application, Appendix I: Water Quality Monitoring Beyond 2019, Table 3.1: Proposed Water Quality Monitoring Stations and Schedule for Post Closure Period, 2020 to 2025.
- Canzinc Mines Ltd.. 2018. Water Licence 1AR-NAN1419 - 2017 Annual Report, Appendix B: 2017 Water Quality Monitoring Report.
- Canzinc Mines Ltd. 2019. Water Licence 1AR-NAN1419 – 2018 Annual Report, Appendix B: 2018 Water Quality Monitoring Report.



Comment

Canzinc Mines Ltd. (the Proponent) has currently been monitoring water quality at key locations three times per year under the expiring licence, and has proposed to reduce to once per year from 2020 to 2025. Sampling stations ELO and 159-6 Temp have also been proposed to be dropped during this time. The analytical group scans to be measured at the remaining stations include NAN-1 and NAN-2, with the NAN-4 ICP scan for trace metals proposed to be dropped.

Parameters for NAN-1 include: metals analysis (total cadmium, lead and zinc), major cations (calcium, magnesium, sodium, potassium, ammonia, and hardness), major anions (chloride, sulphate, bicarbonate, carbonate, nitrate and nitrite, and alkalinity), total suspended solids (TSS), and field-measured parameters (specific conductivity, temperature, pH and visual observation for hydrocarbon sheen). Parameters for NAN-2 include: petroleum hydrocarbon analysis of F2 to F4 hydrocarbons. The proposed analytical reductions would result in dropping the parameters arsenic, copper and nickel from the monthly analyses currently being reported. These parameters are not currently being measured at levels above laboratory detection limits and ECCC has no objection to discontinuing monitoring of these parameters.

The 2017 Annual Water Quality Monitoring Report showed minor variability in reported concentrations of parameters over the three sampling dates (June 29, August 10 and September 13, 2017). There was no consistent date across the various sampling stations which had the highest zinc levels measured; TSS tended to be higher in the June (freshest) samples.

In 2018, three rounds of sampling were completed on July 9, August 10, and August 29, 2018. The 2018 Annual Water Quality Monitoring Report showed similar minor variability to the 2017 report, noting these samples were collected over a seven to eight week period whereas the 2017 samples spanned approximately 11 weeks. Appendix C: Temporal Trend Figures (of Appendix I: Water Quality Monitoring Beyond 2019) plots the concentrations of the parameters from 1996 to 2018 and shows that levels of several parameters have stabilized, while others are still variable at different sites.

ECCC does not object to the proposed reduction in sampling stations and parameters, but with respect to reducing frequency, requests clarification on the timing of sampling each year and the frequency after 2025.

ECCC Recommendation(s)

ECCC recommends that the Proponent:

- Clarify the intent for monitoring for the period 2025 to licence expiry (anticipated 2029).
- Provide proposed timing for annual sample collection, including a rationale for the selected month/timing.

Please contact Emily Nichol at (867) 669-4732 or Emily.Nichol@Canada.ca if you require more information.

Sincerely,


Andrea McLandress
Regional Director

cc: Georgina Williston, Head, EA North, EPOD, ECCC
Emily Nichol, EA Coordinator, EPOD, ECCC
ECCC Review Team