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

ECCC File: 6100 000 196/002
NWB File: 2BE-YAT-250129

February 27, 2025

via email at: licensing@nwb-oen.ca

Robert Hunter
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Dear Robert Hunter:

RE: 2BE-YAT-250129 – Generation Uranium Inc. – Yath Project – Type B Water Licence Application

Environment and Climate Change Canada (ECCC) has reviewed the information submitted to the Nunavut Water Board (NWB) by Generation Uranium Inc. regarding the above-mentioned type B water licence application.

ECCC provides expert information and knowledge to project assessments on subjects within the department's mandate, including climate change, air quality, water quality, biodiversity, environmental emergencies preparedness and responses. This work includes reviewing proponent characterization of environmental effects and proposed mitigation measures. We provide advice to decision-makers regarding a proponent's characterization of environmental effects, the efficacy of their proposed mitigation activities, and may suggest additional mitigation measures. Any comments received from ECCC in this context does not relieve the proponent of its obligations to respect all applicable federal legislation

The following comments are provided:

1. **Topic: Radiation Hazard Control**

   Reference(s)

   - Radiation Hazard, Section 12.1 Drilling

   Comment

   Section 12.1 Drilling states that a suitable natural depression will be used as a "sump" to store benign drill cuttings, sludge and return water. The three measures stated for protecting surface water resources are minimum distance of 31m from ordinary high marks of any adjacent water bodies and where direct water flow into a water body is possible and no

additional impacts are created. Additionally, the only parameter specified for determining "benign" cuttings is U3O8 concentrations. It should be noted that although "benign" drill cuttings do not contain radionuclides, it may at minimum cause suspended solids to be deposited into surface waters. There are also likely to be other heavy metals in the cuttings/sludge and return water. Furthermore, depending on the porosity of the substrate in the natural depression, there may be flow to a water body through groundwater pathway.

ECCC Recommendation(s)

ECCC recommends:

- Drill cuttings and sludge/return water should be analyzed for non-radiological contaminants as well and the potential adverse effects on the environment including surface water resources should be assessed. If significant contaminants of potential concern (COPC) are identified, mitigation measures to prevent the deposit of COPCs into surface water resources should be implemented.
- While U3O8 is generally appropriate as an indicator of radioactivity, it is recommended that a verification analysis for other naturally occurring radioactive materials such as Radium 226 is conducted on the "benign" drill cuttings to validate that radioactive cuttings are not being placed in the natural depression.
- Additional measures such as silt curtains to reduce the potential for suspended solids from flowing out of the natural depression in the event of severe precipitation and flooding should be considered.
- It is recommended that any natural depression that's used is also lined with geosynthetic impermeable material to minimize the potential for groundwater connection to surface water/water bodies.

If you need more information, please contact Maja Crawley at Maja.Crawley@ec.gc.ca.

Sincerely,

Crawley, Maja

Digitally signed by Crawley, Maja
Date: 2025.02.28 07:53:39 -06'00'

Maja Crawley
Environmental Assessment Officer

Attachment(s):

cc: Eva Walker, Head, Environmental Assessment North (NT and NU)