



## **Supplementary Information**

## **Renseignements supplémentaires**

### **Presentation from Carroll Chubb**

### **Présentation de Carroll Chubb**

In the Matter of the

À l'égard de

**Cameco Corporation, Beaverlodge Project**

**Cameco Corporation, le projet de  
Beaverlodge**

---

Application for the Licence Revocation and  
Transfer of Properties to Saskatchewan  
Institutional Control Program

---

Demande de révocation de permis et de  
transfert de propriétés au programme de  
contrôle institutionnel de la Saskatchewan

**Commission Public Hearing**

**Audience publique de la Commission**

**January 30, 2025**

**30 janvier 2025**

**Comments on Cameco's request to revoke the  
current CNSC licence and release Beaverlodge  
mine and mill site properties into Saskatchewan's  
Institutional Control Program**

**Prepared by Carroll Chubb, PhD**

Saskatoon, Saskatchewan

January 30, 2025

# Outline

- Need public access to environmental risk assessment document
- Lack of adequate sampling for toxic substances
- Safety of Beaverlodge properties
- Levels of toxic substances in the Beaverlodge area
- Need for better governance structure for future management of Beaverlodge area
- Summary of recommendations

# **Cameco's request for confidentiality of the environmental risk assessment document**

## **Recommendation:**

Make available to the public nearly all of the risk assessment document *Decommissioned Beaverlodge Mine Site: Model Update and Environmental Risk Assessment, July 2020*.

# Risk evaluation

- Hazardous properties of substances - Toxicity
- Exposure
- Effects of exposures to multiple substances

## For estimating exposure to toxic substances

- Need a more complete description of levels of toxic substances and radiation in soil and air, especially near the location of tailings ponds and down stream from them.
- Consideration of groundwater contamination is needed.
- Need evaluation of exposure of humans to toxic substances in Beaverlodge area. This includes data on levels of toxic substances in caribou.
- For estimating levels of toxic substances prior to mining, the choice of **reference areas** has not been justified. Fish from Lake Athabasca are used as references for background levels of contamination, although water from Beaverlodge Lake goes into Lake Athabasca.

# Safety of Beaverlodge properties - 1

- *Commission Member Document (CMD) 25-H3* states that for transfer of the properties to ICP, “The CNSC must be assured that the site is safe and expected to remain so in the long-term.”

- *The Final Closure Report: Beaverlodge Properties:*

Performance objectives for the decommissioned Beaverlodge site of “safe, secure, and stable/improving”

and

safe means “The site is safe for unrestricted public access. This objective is to ensure that the long- term safety is maintained.”

## Safety of Beaverlodge properties - 2

- Water quality criterion for transfer to Saskatchewan ICP:  
“water quality is expected to be stable and/or improve in the long term”

This is not an adequate criterion. Water that is highly contaminated is not appropriate for transfer to the Saskatchewan ICP.

- **Healthy Fish Consumption Guideline:** Recommends restriction on fish consumption for Beaverlodge, Martin, and Cinch Lakes due to high levels of selenium. The document also states that fish should not be consumed from Nero, Marie, Meadow, Minewater, and Greer Lakes and from lower Ace Creek. The document reminds people not to drink water from Beaverlodge, Fookes, Greer, Marie, Martin, Meadow, Minewater, and Nero Lakes, and from lower Ace Creek.



## Safety of Beaverlodge properties - 3

- CMD25-H3 (page 54) states: “‘Safe’ is one of the performance objectives for the site, but this performance objective is only in relation to the land and is not intended to cover any waterbodies.”
- If the objective is to have the site “safe for unrestricted public access,” then ignoring contamination in water bodies is not appropriate.
- **Recommendation:** Improve the way CNSC assesses safety.

# Levels of toxic substances in the Beaverlodge area

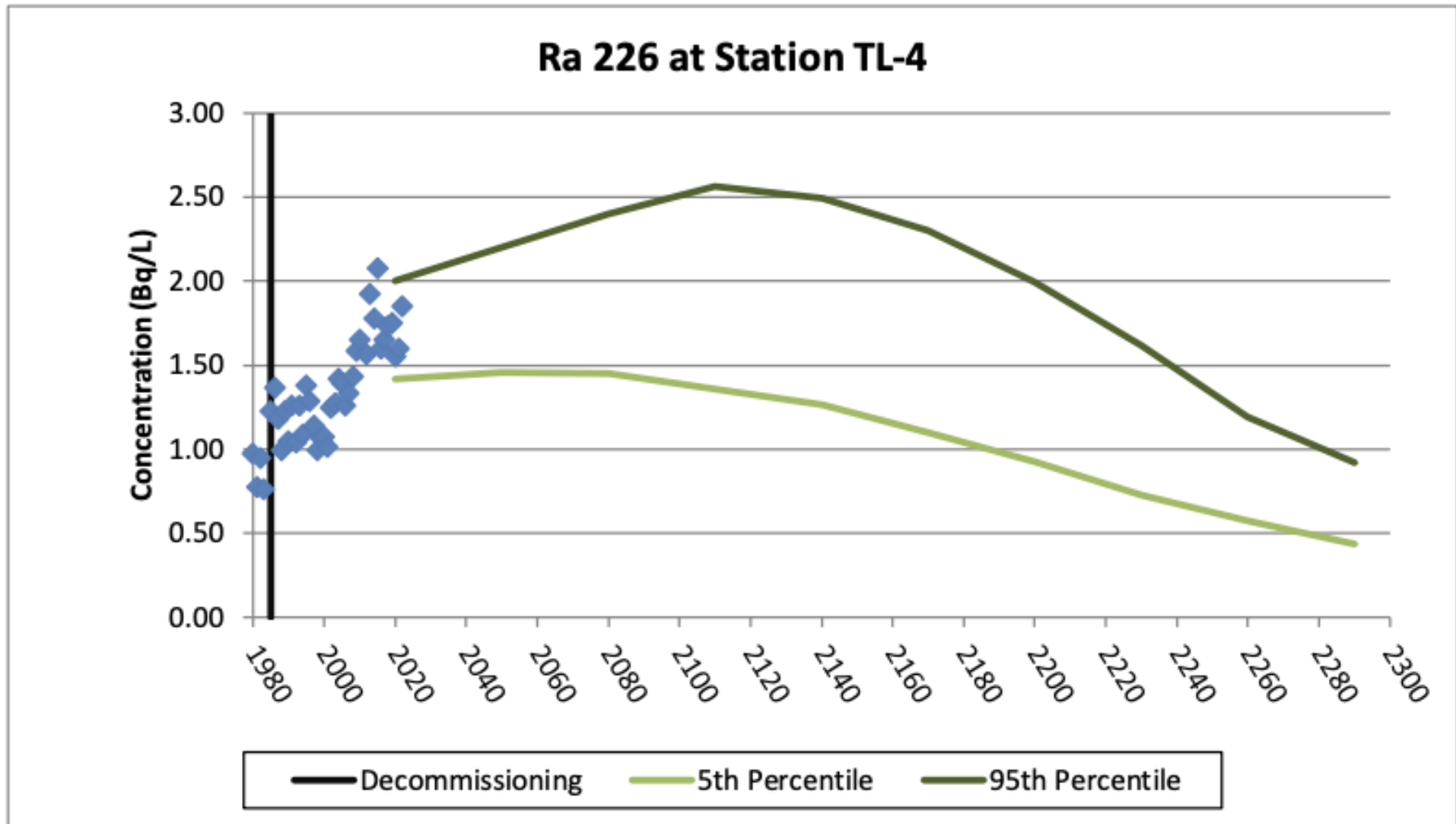
- High levels of contamination of the site and of local (country) foods with uranium, radium-226, and probably selenium and other substances
- Examples from CMD25-H3

Outlet of Verna Lake: Uranium concentrations about 16 times the upper limit in the Saskatchewan surface water quality guidelines for aquatic life

Beaverlodge Lake: Uranium concentrations about 7 times that limit

Outlet of Fookes Reservoir: Radium-226 concentrations about 14 times the concentration limit in Saskatchewan's drinking water guidelines

Outlet of Marie Reservoir: Radium-226 concentrations about 18 times that limit



**Figure 14: Ra-226 Performance Indicator at TL-4**

From: Final Closure Report Beaverlodge Properties

# Better governance structure for future management of Beaverlodge area

- Some continued oversight of the Beaverlodge properties by CNSC is needed.
- Consider oversight from combination of:
  - CNSC
  - Saskatchewan Government institution, such as ICP or SRC
  - Indigenous people
- The current CNSC licence for the Beaverlodge properties should not be revoked until a better future governance structure can be created.

## Some Recommendations

- Do **not** revoke Waste Facility Licence WFOL-W5-2150/2025
- Do **not** exempt the Government of Saskatchewan from licensing under the *Nuclear Safety and Control Act* for the 27 Beaverlodge
- Develop a plan for governance and future management and remediation that includes CNSC, Indigenous people, and an appropriate Saskatchewan government institution, possibly ICP or SRC
- Improve the way CNSC assesses safety
- Take steps to recommend and support research needed to better assess the risks to human health and the environment in and near the Beaverlodge area
- Make available to the public nearly all of the risk assessment document *Decommissioned Beaverlodge Mine Site: Model Update and Environmental Risk Assessment, July 2020*



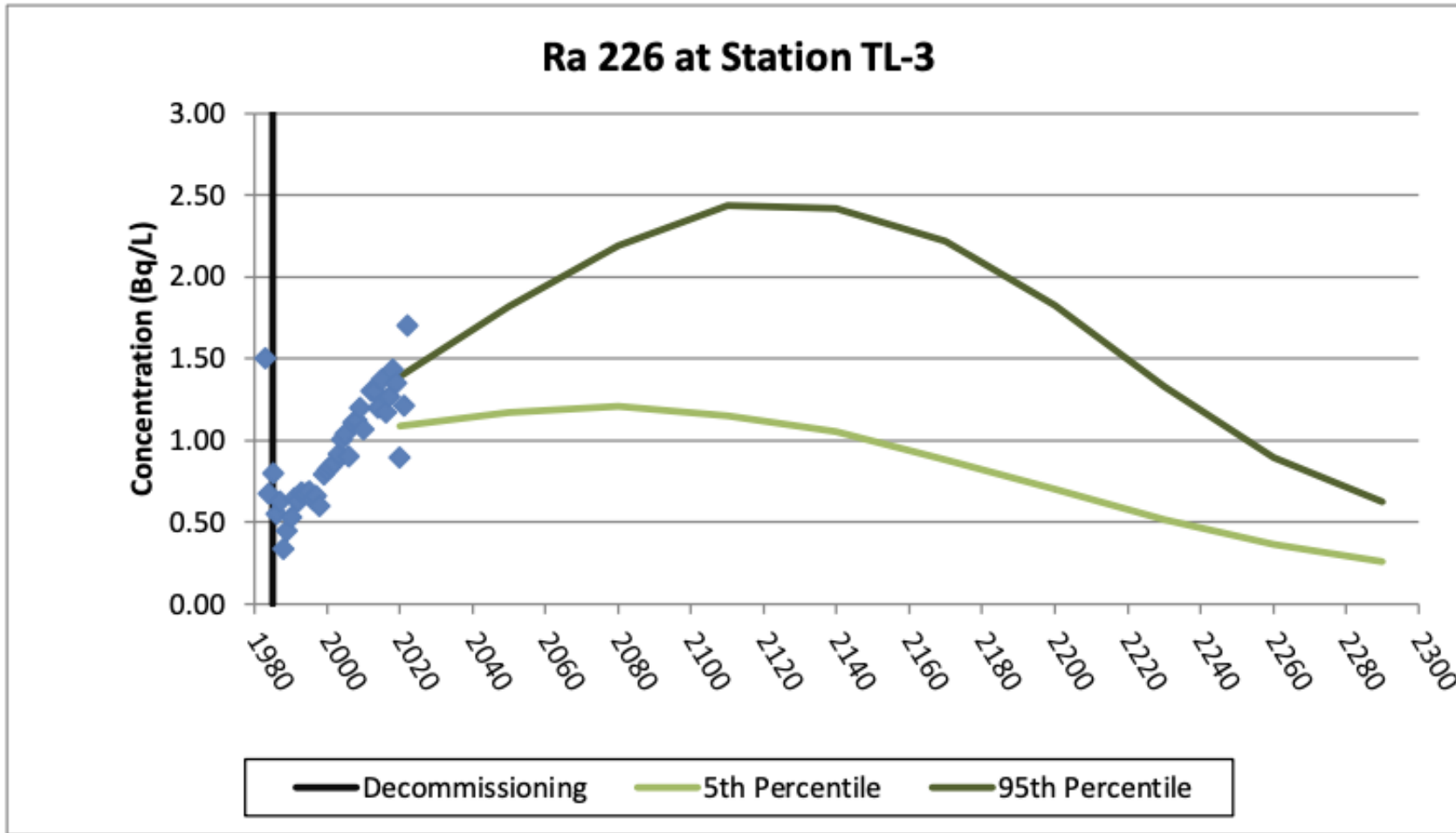
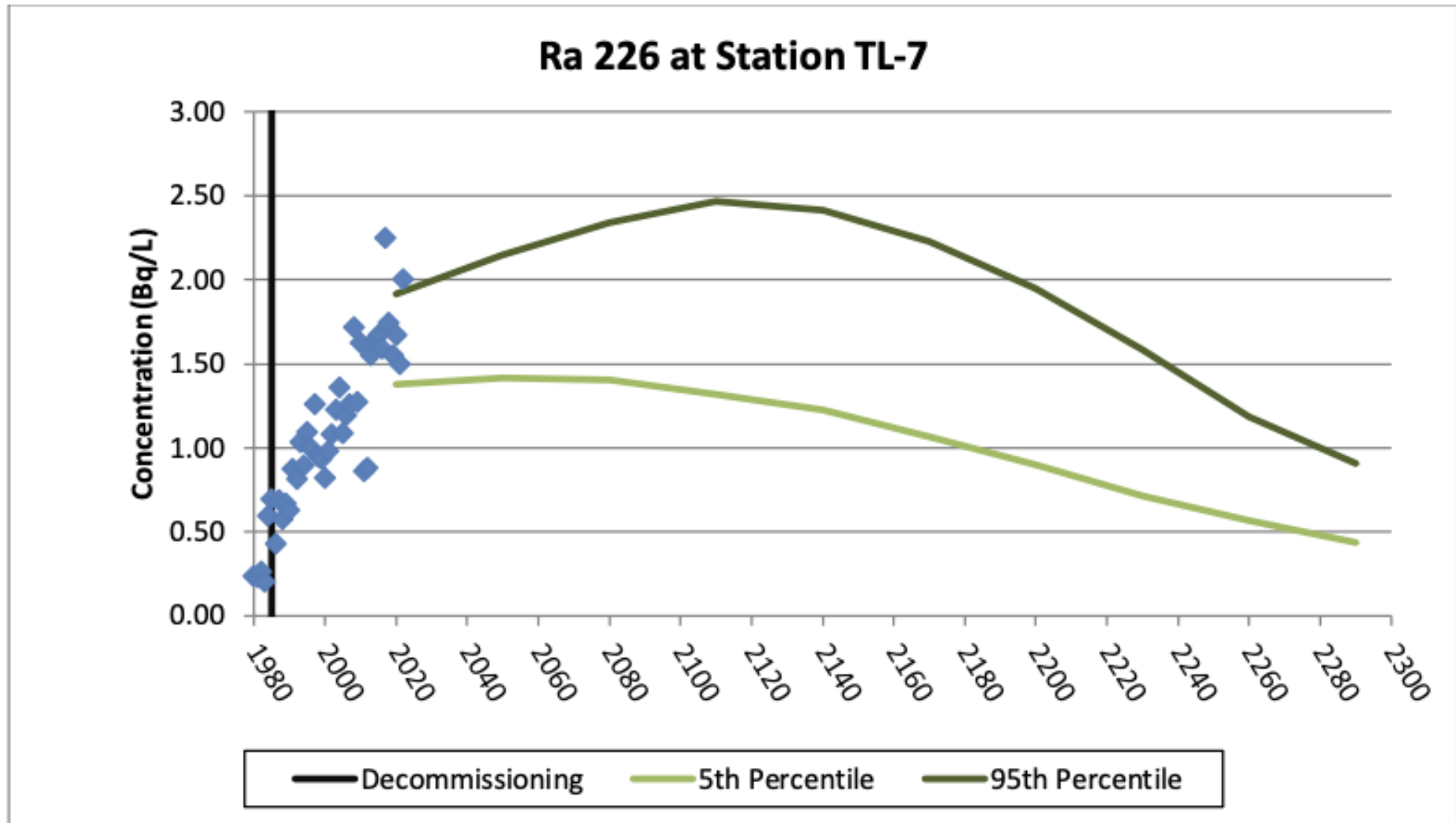


Figure 9: Ra-226 Performance Indicator at TL-3

From: Final Closure Report Beaverlodge Properties



**Figure 19: Ra-226 Performance Indicator at TL-7**

From: Final Closure Report Beaverlodge Properties