

**From:** [Steve Lines](#)  
**To:** ["Paul Clow"](#)  
**Cc:** ["Phyllis Beaulieu"](#)  
**Subject:** RE: Water License  
**Date:** Wednesday, May 19, 2010 1:17:12 PM

---

Hi Paul,

I would agree that the document appears to address the condition from a conformity standpoint. However, it is possible that deficiencies could be identified upon technical review. Having said that, the document is somewhat dated at this point being 6 years old, and parties may want an update based on current data and trends. This is one of those situations where you might want to consult with INAC, EC, DFO. Often, getting their input beforehand can be helpful.

I'm wondering if you know whether the document was available during the previous licence application review? I notice the document is dated April 2004, so it would have been around in 2005-2006 during review of documents supporting licence 3AM-IQA0611. But I don't see it on file at the time.

Also, if the city is planning to submit the report as part of an upcoming application, a non-scanned electronic copy of the report would be most appreciated if available. Is there a timeframe for submission of an application?

Steve

Stephen Lines M.Sc., P.Biol., DEIA  
Tunaley, Lines & Associates

---

**From:** Paul Clow [mailto:[p.clow@city.iqaluit.nu.ca](mailto:p.clow@city.iqaluit.nu.ca)]  
**Sent:** Wednesday, May 19, 2010 11:36 AM  
**To:** 'Steve Lines'  
**Subject:** RE: Water License

Hi Steve,

I have attached a document (second part of the document will follow due to the size of the file) that was prepared by Trow Associates in 2004. It is called Raw Water Supply and Storage Review. Is there anything that this report doesn't cover that you would require?

Paul Clow  
Project Officer  
Engineering Department

City of Iqaluit  
Box 460, Iqaluit, NU  
X0A 0H0

Phone: 867-979-6363 ext. 233  
Cell: 867-222-2968  
Email: [p.clow@city.iqaluit.nu.ca](mailto:p.clow@city.iqaluit.nu.ca)

---

**From:** Steve Lines [mailto:slines@tlaconsultants.ca]  
**Sent:** May-19-10 11:27 AM  
**To:** 'Phyllis Beaulieu'; 'Paul Clow'  
**Subject:** RE: Water License

Hi Paul:

You are referring to condition of Part 3, Item B.

The Licensee shall file an application for Licence renewal one (1) year prior to the expiry of this Licence. In addition to the application, the Licensee shall include:

- a. Complete water balance for Lake Geraldine prepared by an Engineer; and
- b. Assessment of recharge needs for long term water demands.

For background on this condition, I've looked at the NWB's decision (Pg 11-12):

The December 31, 1999 license issued by the Board required the applicant to submit a detailed hydrological assessment on the Lake Geraldine watershed. **The licensee failed to meet this requirement.** At the hearing, the Town of Iqaluit told the Board that it was planning to retain a consultant in March 2001 to assess the ability of Lake Geraldine to meet Iqaluit's needs, to identify alternative water sources and, if Lake Geraldine's capacity was adequate, to plan for additional storage facility at the current water treatment plant. At the hearing, the Town said that it was prepared to submit such report to the Board, by no later than December 31, 2001.

In their joint submission, DFO, DIAND and EC again recommended the inclusion of this study as a water licence condition, and recommended that it include the hydrological assessment of Lake Geraldine and realistic predictions of future growth and water use as well as an assessment of the potential effects of water drawdown on fish populations in Lake Geraldine. Health noted that at this time the source and quality of the water was acceptable, but it also supported DFO, DIAND and EC's recommendation.

I've spoken with my engineer partner, Karlette Tunaley, and generally the expectation for water balance/hydrological assessment is a full analysis of inputs and outputs that affect the water level data that you have. The water level data can be used to calculate lake volumes if you know the lake's bathymetry.

However, an assessment of the kind requested would normally include consideration of the drainage area feeding into the Lake, stream flows into the lake, precipitation, evaporation, evapotranspiration.

Typically, this requires knowledge of factors such as climate data, topography, soils, ground cover, permafrost.

Comparing the hydrological assessment with the projected demand for water in the community, parties will be able to assess whether Lake Geraldine is able to support the demand while keeping environmental impacts to acceptable levels.

I hope this helps. Let me know if there's anything else we can clarify.

Regards  
Steve Lines

Stephen Lines M.Sc., P.Biol., DEIA  
Tunaley, Lines & Associates

---

**From:** Phyllis Beaulieu [mailto:licensing@nunavutwaterboard.org]  
**Sent:** Tuesday, May 18, 2010 1:04 PM

**To:** Paul Clow  
**Cc:** Steve Lines  
**Subject:** RE: Water License

Hi Paul – nice to see that your email is working again. I am forwarding your query over to Steve for a response, as he's the technical advisor assigned to this file.

Regards,

---

**From:** Paul Clow [mailto:p.clow@city.iqaluit.nu.ca]  
**Sent:** Tuesday, May 18, 2010 12:56 PM  
**To:** Phyllis Beaulieu  
**Subject:** Water License

Hi Phyllis,

Under General Conditions of the Water License it states that the Licensee should submit a renewal application one year prior to expiry of the current water license along with a complete water balance for Lake Geraldine prepared by an engineer and an assessment of recharge needs for long term demand. I have found on the Environment Canada website the level of water at the dam for everyday since 2007. Would this data be sufficient for the water balance of Lake Geraldine? Also, what exactly is the NWB looking for, for the assessment of recharge needs for long term demand.

Thank you,

Paul Clow  
Project Officer  
Engineering Department

City of Iqaluit  
Box 460, Iqaluit, NU  
X0A 0H0

Phone: 867-979-6363 ext. 233  
Cell: 867-222-2968  
Email: p.clow@city.iqaluit.nu.ca