



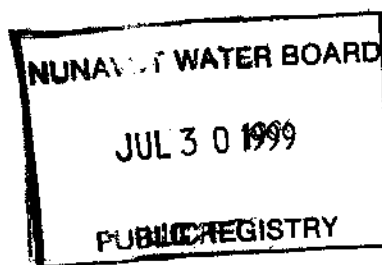
Department of Sustainable Development

Kivalliq Region

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Hamlet of Baker Lake Water Licence N6L3-1191 Application for renewal dated June 1, 99.

The following are my comments on the Hamlet's application for renewal.

1. On page 6 of the document, under Wetland, the statement about the holding cell is false. There is no holding cell at all. There should be a cell strong enough to withstand winter and erosion.
2. On page 7, under Sewage Discharge, the Airplane Lake is not part of the sewage system, and the water quality of its intake shall be appropriate to sustain water life.
3. On page 7 under General Condition of... there shall be a mention of the destroyed holding cell and the necessity to build a new one, bigger and more solid. This holding cell will help retain solids and reduce the BOD-5 at the intake to the wetland.
4. On page 9 under Animal Carcasses Pit: I visited the site in June 99 and acknowledge the presence of numerous unburned carcasses. Even if the garbage are burn, I doubt the animal carcasses, with their high content of water will burn. Best thing for these potentially corruptible carcasses is the immediate burial.
5. On page 10, item 2.c: by now, the oil pit should have been decommissioned.
6. On page 13, there is not enough analysis reported in order to assess the quality of both the Garbage Creek (exit of Airplane Lake) and the Airplane Lake intake. Only one analysis (4 parameters) has been done in September 98. There shall be a BOD test, at least, plus coliform (total and fecal) and much more samples.

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There is no mention that the barge fuel delivery pipeline is near the water intake bringing a high risk of petroleum contamination. As an example: subsequent to a barge delivery on 8 of August 94 a sample of the water at the intake show an elevation in phenol from <0.002 to .044. There was also an elevation in the level of sodium (from 1.0 to 24.7) chloride (from 1.5 to 50) and magnesium (from 0.9 to 4.0) [discharge of salt water from the barge?].

I am wondering what else a boat or barge might discharge in the Lake (toxic substances?).

As stated in the "Baker Lake Water Study" in 1995, the inlet of the Airplane Lake is the end of the wetland sewage treatment area. That lake shall therefore be protected from contamination. This will just give an additional level of security to Baker Lake residents and the natural lake ecosystem.

Other general concerns:

1. Turbulence and back flow in the Baker Lake might bring back the effluent of the Airplane Lake toward the water intake of the Hamlet especially during Thelon River high flow. The particular shape of the Baker Lake on the West Side, combined with the inflow of a big river (Thelon) suggests such likelihood. High spring flow in the Thelon River, together with a massive melt down of the "sewage ice cube" short-circuiting the wetland system, may result in a transport of untreated effluent directly to the potable water intake (due to an eventual whirlpool current in that corner of the Lake where is located the Hamlet. There is only 2 kilometers between the intake and the exit of the Airplane Lake. A study of the movement of surface water in the lake could be undertaken to examine that possibility.
2. The sewage holding cell is completely destroyed. Instead there should be a little enclosed artificial cell or lagoon similar to Arviat, where the solids can be trapped, and the seepage allowed to flow through the gravel sides toward the natural watercourse. This will give a real retention time both for the spring melt down of the "plug" and the usual truck downloads.
3. The old waste disposal site, around the Airplane Lake might bring PCBs and other toxic substances in the Baker Lake, has there ever been an analysis of PCB done at the end of Caribou Creek?
4. I suspect dilution to be the main treatment happening in the wetland system.

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