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June 13, 2001

Rita Becker
Licensing Administrator
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0E 1J0

Dear Ms. Becker,

Re: Water Licence Renewal Application of Kimmirut**1.0 INTRODUCTION**

This submission, on the application for a Municipal Water Licence renewal by the Hamlet of Kimmirut, is submitted and presented on behalf of the Operations Branch of the Department of Indian and Northern Affairs Canada.

This submission will be based on the Water Licence renewal Application received by the Nunavut Water Board on May 17, 2001 and past visits by the Departmental Inspector.

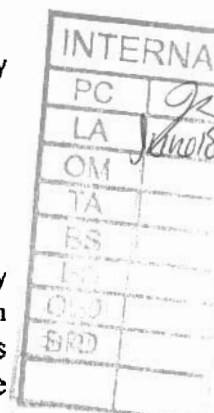
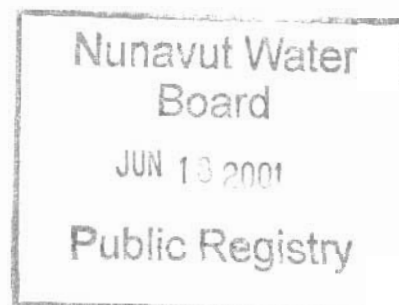
2.0 CONDITIONS APPLYING TO WATER USE

The Hamlet currently gets raw water from Lake Fundo which is situated approximately 1 km north of the community. There is a truckfill station by the lake. Water consumption was approximately 12,000 m³/year in 1998. The expected sewage generation in 2006 is 19,900 m³/year (according to the Dillon Consulting Limited report "Sewage & Solid Waste Site Selection, Kimmirut, NT" of February 1999). Water consumption will therefore likely be approximately the same.

INAC recommends that clauses be included in the Water Licence to once again identify the water supply source and the volume limits for all purposes. In this case the source is still Lake Fundo and the annual volume should not exceed 25,000 m³/year for the term of this licence assuming a term of five years. Consideration should also be made to determine the long term suitability of Lake Fundo as the water supply for the community. While it may not be necessary in the short term (i.e. a 5-year licence term), should the term of the licence be 10 years as the previous licence (N5L4-1441), it may be prudent for this assessment to take place.

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SNP Station 1441-1 should continue to be used to measure the volume of intake. Likewise, continued use of SNP Station 1441-2 to measure raw sewage volume from the pumpout truck is also recommended. It should be noted that no sampling is required from these stations on the part of the Hamlet, only the measurements of the volume of water intake and sewage outake.

3.0 CONDITIONS APPLYING TO WASTE DISPOSAL

The Hamlet is in the process of building a new lagoon in a location more suitable to the community to allow for the expansion of housing development. The current existing sewage lagoon is an unacceptable pit with an estimated capacity of 6 m³. The most visible area of flow from this sewage pit should be sampled annually, during periods of flow and analyzed for parameters based on the Northwest Territories Water Board's "Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories." (Or, alternatively, the Nunavut Water Board's Guidelines when finalized.)

The existing waste disposal site is located in the same area as the current sewage pit. There are no procedures in place for the proper operation and maintenance of the site to prevent contamination to surrounding waters. The procedures for the proper operation of the solid waste disposal site can be included with the Operation and Maintenance Plan. INAC recommends that all solid waste be deposited at the solid waste disposal facility or at a facility approved by the Board.

SNP Station 1441-4, which measures the runoff from the sewage disposal area prior to discharge into the ocean, can therefore be use to analyse the combined effects of both the sewage pit and the solid waste disposal runoffs. Samples should be collected annually during periods of discharge. Because this will deal with both sewage and solid waste runoff, we recommend that samples from SNP Station 1441-4 be analysed for the following parameters:

pH ✓	Suspended Solids ✓
Sodium ✓	Total Phosphate ✓
Magnesium ✓	Sulphate ✓
Potassium ✓	Oil and Grease ✓
Conductivity ✓	Nitrate and Nitrite ✓
Ammonia Nitrogen ✓	Calcium ✓
Total Arsenic ✓	Total Lead ✓
Total Nickel ✓	Total Chromium ✓
Total Cadmium ✓	Total Iron ✓
Total Mercury ✓	Total Copper ✓
Total Zinc ✓	BOD ✓
Faecal Coliform ✓	

Also, this effluent should meet the following effluent quality standards:

Total Suspended Solids	180 mg/L
BOD	120 mg/L
pH	6 - 9
Oil and Grease	No visible sheen

Although the current sewage pit is likely to be abandoned when the new one is operational, samples should continue to be taken at SNP Station 1441-4 for as long as the area still serves as a solid waste disposal site. Samples should also be collected beyond that point to monitor the effectiveness of the abandonment and restoration of the sewage pit.

A new SNP sampling site is recommended to analyse the effluent of the new sewage lagoon currently being built. This new SNP Station should receive a new station number rather than take a currently used station number. This will simplify keeping track of sample records over time since each location will have its own unique station number. The next unused station number should be 1441-6, which is therefore proposed as the SNP Station number at the new sewage lagoon effluent. The effluent at this new station should also be sampled annually during periods of flow. The parameters to be analysed are listed below, along with the standards they should meet:

Total Suspended Solids	180 mg/L
BOD	120 mg/L
pH	6 - 9
Oil and Grease	No visible sheen
Ammonia	monitor only

A proper fence should also be built around the solid waste facility to prevent windblown waste from leaving the perimeter of the facility.

INAC also recommends the placement of warning signs at the water supply and waste disposal facilities. These signs are to be maintained to the satisfaction of an Inspector.

4.0 CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

The Hamlet has indicated in their renewal application that they are currently building a new sewage lagoon. If the current waste lagoon, or any waste disposal or water use facilities, is to be abandoned for a new facility then the licensee should be required to provide the Board with an abandonment and restoration plan prior to abandoning the existing facility.

INAC recommends the requirement for an abandonment and restoration plan prior to abandoning any waste disposal or water use facility. The plan should also require the Board's

approval.

Also, the Nunavut Water Board should consider the role of the Community Government and Transportation (CG&T) in the development of an abandonment and restoration plan. It is usually CG&T that funds and operates such plans, and hence the Hamlet should not be the only party responsible for its completion.

5.0 CONDITIONS APPLYING TO OPERATION AND MAINTENANCE

Water Resources recommends a requirement for an operation and maintenance plan for the water use and waste disposal facilities be submitted to the Board for approval sometime after the issuance of the licence. In addition to the basic requirements, the plan should address the waste metal and the hazardous material disposal areas at the solid waste disposal site, identifying the designated areas and the handling procedures.

As with the abandonment and restoration plan, CG&T also controls the funding for developing an operation and maintenance plan. The Board should consider this when determining the deadline for the submission of the plan. However, once the plan is completed and accepted, it is solely the responsibility of the Hamlet to follow the operation and maintenance plan.

6.0 RECOMMENDED TERM OF LICENCE

INAC recommends a five year licence term to allow enough time for the Hamlet to establish a consistent compliance record. This should also give them time to resolve any initial problems that might occur with their new sewage lagoon.

INAC also recommends allowing the Hamlet and ourselves to review and comment on the draft licence prior to it being issued. This will allow them to express any reservations they may have at this point. Hopefully, any reservations can be resolved early in the process and minimize any non-compliance issues in the future.

If you would like to discuss any of the comments in further detail, please feel free to contact me at (867) 975-4555.

Sincerely,



Michael Roy
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