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DIAND Nunavut District  
Box 100  
Iqaluit, NT  
XOA OHO

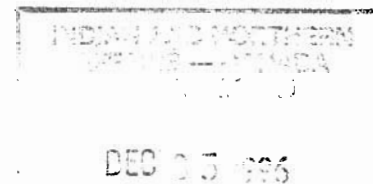
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November 18, 1996

B9545-5-N5L4-1447

Mr. Steven L. Burden, P. Eng.  
Oliver, Mangione, McCalla & Associates Ltd.  
Box 6  
Iqaluit, NT  
XOA OHO



Dear Mr. Burden,

Re: Proposed Pangnirtung Sewage Lagoon

1. Thank you for the opportunity to review the above mentioned report. This office has, for some time, felt that any improvement to the sewage disposal practices in the community of Pangnirtung would be most welcomed.
2. The following are comments generated as a result of reviewing the proposal:

**Page 4: 3.2 Per Capita Sewage Projections.** It is noted that the residential water use rate is 90 l/capita/day. Given the 1996 population provided in Table 3.1, this translates into a total daily water consumption of 115.7 m<sup>3</sup>. During the July, 1996 inspection, it was established that water consumption ranged between 80-100 m<sup>3</sup> per day. Similarly, the sewage generation rate, is about 30% higher than the water consumption rate used. Simplified, this may mean that the lagoon, based on present water consumption rates, may actually have a life span greater than projected within the proposal.

**Page 5: 3.3 Waste Water Characteristics.** The guidelines that are being referred to are not Government of the Northwest Territories guidelines. The guidelines were set out in a document entitled "*Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories*," 1992 and were published by the NWT Water Board, which is a federal government body as its existence is set out by the *NWT Waters Act*, which is federal legislation. It is noted that this error again appears on page 16 in section 7.3. Also note that DIAND is a federal agency and not a body of the Territorial Government. As an additional note, this document should be referenced. A copy is attached for your records.

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Page 16; 7.4 Lagoon Operation. It is noted that a yearly decant is planned for the month of September. While it is obviously better to release sewage effluent that has been treated, I wonder if it is practical that consideration be made that would allow the decanting process to be extended over as long a period as possible. While the current method is certainly unacceptable, subjecting the fiord environment to a single large 'slug' of effluent may not be the best situation either.

Pages 17&18; Conclusions. Rationale is provided for exceeding the maximum recommended depths for this type of lagoon. The fact that the average depth is below the maximum desired is irrelevant because this will be during the period when the lagoon is in an anaerobic state (covered with ice, cold and receiving little sunlight). Maximum depths are desirable in order to ensure that sunlight, during the summer, is able to penetrate to depth and allow a maximum amount of aerobic bacterial treatment in the shortest period of time. This lagoon, by design, does not facilitate this desired type of operation.

3. Another consideration that appears not to have been incorporated into the proposal is that of the current licence requirements (Part C, Item 4) which set out effluent quality standards which, as opposed to the above noted guidelines, unless changed by the Board, must be met. A copy of the present licence is also attached for your consideration.
4. I am available, at your convenience, to further discuss any of the above noted aspects. Please do not hesitate to give me a call or drop by the office.

Sincerely,



Paul Smith  
Water Resources Officer  
Nunavut District

- cc. - Nunavut Water Board, Gjoa Haven  
- DIAND Water Resources Division, YK