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Mr. Dave Parker  
Project Officer  
Public Works and Services  
Government of the Northwest Territories  
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Dear Mr. Parker:

### Projected Design Life of Proposed Water Reservoir and Sewage Lagoon

Further to our conversation this morning, please find attached tables of the projected requirements for both the water reservoir and the sewage lagoon in the Hamlet of Igloolik. The per capita consumption rates and the calculated storage requirements are based on the MACA formula. The actual usage in 1996 (30,000 cubic metres) is used to predict the actual storage requirements. This is accomplished by calculating the percentage of the calculated water usage the actual usage represents (58.51%).

From our design report <sup>(usable volume)</sup> capacity of the existing water reservoir is 27,800 cubic metres. The proposed expansion is for 11,600 cubic metres for a total storage of 39,400 cubic metres. From the attached table, the proposed expansion does not provide sufficient storage for the existing population if the MACA formula our used to calculate consumption rates. However, based on the actual usage, the proposed expansion will provide storage until the year 2007.

Also from our design report capacity of the existing sewage lagoon is 28,000 cubic metres. The proposed expansion is for 14,850 cubic metres for a total storage of 42,850 cubic metres. From the attached table, the proposed expansion does not provide sufficient storage for the existing population if the MACA formula our used to calculate consumption rates. However, based on the actual usage, the proposed expansion will provide storage until the year 2001.

The storage requirements used in the report are larger than the volumes in the terms of reference due to the use of the MACA formula and MACA population projections. The number in the terms of reference was believed to be quoted for use in defining the scope of the expansions for use in estimated the required engineering. The MACA formulas are generally used for all calculations of consumption, unless otherwise instructed as they take into account increased per