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November 6, 2012
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**Attention: Karen Kharatyan – Technical Advisor**
Nunavut Water Board
PO Box 119
Gjoa Haven, NU X0B 1J0

**Reference: Licence No 3AM-GRA1015 – Amendment Application Denial**

Dear Karen,

I write to you on behalf of the Government of Nunavut – Community and Government Services (GN-CGS) to continue discussions regarding the Amendment Application for Licence No 3AM-GRA1015. It was disappointing to receive your letter regarding the Rankin Inlet Water Licence Amendment Application for the Nipissar Lake Resupply Line project dated September 14, 2012. Your letter stated deficiencies with the submitted Application and concluded that the NWB is not considering the application further. The deficiencies stated in the letter are as follows:

1) The GN-CGS is in non-compliance with the existing Water Licence (3AM-GRA1015) due to outstanding items Part C, Item 8, Points a, b, and c which are:
    a. Findings of the water use audit and leak detection survey;
    b. Detailed assessment of current and projected water volumes to be withdrawn from Nipissar Lake against total annual recharge (i.e. Water Balance); and
    c. Evaluation of impacts on Nipissar Lake due to current water use and future needs.

2) Clarification on the design calculations utilized to determine the projected water uses and resulting resupply pumping requirements.

3) Additional information is required to evaluate the impacts that water withdrawal from Lower Landing Lake will have on the source and downstream environments.

On behalf of the GN-CGS, we have reviewed your letter and offer the following comments in regards to the deficiencies summarized above:

1) We believe that the GN-CGS has completed the following in regards to items Part C, Item 8, Points a, b, and c as follows:
    a. Attached is a report, *Water Supply Capacity, Consumption & Conservation Study, Rankin Inlet, NU* prepared by RMSi and FSC, April 20, 2010. This study addresses the water use audit and leak detection survey that was previously completed.

b. Attached is a report, *Water Supply Capacity, Consumption & Conservation Study, Rankin Inlet, NU* prepared by RMSi and FSC, April 20, 2010. This study includes a *Nipissar Lake Volume Study and Environmental Variable Study* prepared by FSC as Appendix E of the study. The *Nipissar Lake Volume Study and Environmental Variable Study* includes a water balance detailing the current and projected volumes to be withdrawn from Nipissar Lake against annual recharge.

c. Attached is a report, *Water Supply Capacity, Consumption & Conservation Study, Rankin Inlet, NU* prepared by RMSi and FSC, April 20, 2010. This study includes a *Nipissar Lake Volume Study and Environmental Variable Study* prepared by FSC as Appendix E of the study. The *Nipissar Lake Volume Study and Environmental Variable Study* evaluates current and project withdrawals from Nipissar Lake and the impacts it has on remaining storage and viability of the Lake itself.

2) To Clarify Section 3.1 Design Calculations in the report titled *Design of Pipeline System to Augment Natural Replenishment of Nipissar Lake, Rankin Inlet, Nunavut* we offer the following comments:

a. From the Section 8.0 of the RMSI / FSC *Water Consumption and Conservation Study*, the total annual volume of water Rankin Inlet consumed was **427,770 cu.m.** for an estimated population of **2499** resulting in **469 LPCD**.

b. Using MACA's pre-developed calculation for community growth, we calculated a population of **4649** in 2030 using a growth rate of 3%.

c. Therefore, if we are to use the current water usage rate (469 LCPD) and the projected 2030 population (4649), we calculate an annual usage of **795,840 cu.m.** which requires a pumping requirement of **484,029 cu.m.** for the 2030 year.

d. In order to pump the required 484,029 cu.m. in year 2030, a resupply pump system should be designed at **700 USGPM** for approximately **125 days** annually.

e. We understand that **925,340 cu.m**. of water was reported in the 2011 Annual Report, however we believe that this usage was calculated in error. A thorough review of the water usage has been completed and we believe that the volume was incorrectly tabulated from errors in water meters, inclusion of Williams Lake water usage, recirculation water usage, and human error.

We have therefore recalculated the annual water usage for Rankin Inlet and arrive at **604,519 cu.m**. of annual usage. With the Nipissar Lake replenishment of **311,789 cu.m**. previously determined in the *Nipissar Lake Volume Study and Environmental Variable Study*, we believe that the shortfall of water at Nipissar Lake is **292,730 cu.m.**

f. Therefore, the designed pipeline system to augment natural replenishment of Nipissar Lake is correct and can provide the necessary resupply.

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3) To date, minimal information has been developed evaluating the impacts on Lower Landing Lake and its downstream environments. In order to properly address the concerns held by the NWB, we request a more specific scope of work from the NWB. We suggest that that the NWB compile a list of specific information required to be submitted to the Board. We can then accurately determine how to address the concerns to the Board's satisfaction.

We anticipate the information in this letter will have addressed most of the concerns held by the NWB. We look forward to continuing positive discussions with the NWB, and thank you for your time and effort in resolving this matter.

Regards,

**STANTEC ARCHITECTURE LTD.**

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Attachment: Design of Pipeline System to Augment Natural Replenishment of Nipissar Lake, Rankin Inlet, Nunavut, FSC Project # 2010-0570, December 15, 2010 - FSC

Water Supply Capacity, Consumption & Conservation Study, Rankin Inlet, NU, FSC Project 2009-1310, April 20, 2010 – RMSI / FSC.

c. Brian Duguay, GN-CGS, Acting Regional Projects Manager
Bryan Purdy, GN-CGS, Regional Municipal Planning Engineer
Walter Orr, Stantec
Kevin Hodgins, Stantec