Stantec

October 10, 2014
File: 144901612

Attention: Damien Cote
Nunavut Water Board

Dear Mr. Cote,

Reference: Rankin Inlet Water License Amendment #3AM-GRA1015

On behalf of the Government of Nunavut's (GN's) Department of Community and Government Services (CGS), Stantec Consulting Ltd. (Stantec) has reviewed the presentation made by Fisheries and Oceans Canada (DFO) to the Nunavut Water Board (NWB) concerning the Water License Amendment application #3AM-GRA1015.

We have the following response:

DFO Slide 3: We note and agree with DFO's conclusion that provided our proposed avoidance and mitigation measures are fully developed and effectively carried out that there is a low probability of detectable impacts to the Char River in terms of its ability to support commercial, recreational and Aboriginal fisheries.

DFO Slide 4: We note that it is incorrect to refer to the flows and volumes referred to on this slide as something that is required "each year". Those maximum pumping volumes would not occur until 2030. The expected volumes in 2015 and in the near-term are expected to be much lower but as we stated at the hearing the important point to remember is that pumping will not occur unless it is safe to do so according to the mitigation measures that we will have in place.

DFO Slide 6: This recommendation was addressed at the hearing but our response is repeated below.

We provided calculations based upon an assumption of 24 hour per day pumping but whether or not the pumping occurs 8 hours, 16 hours or 24 hours each day is not relevant. The relevant point to remember is that pumping will not occur unless it is safe to do so according to the mitigation measures that we will have in place.

The procedure for determining the daily instantaneous flow rates are a 6 part process as follows:

1. In the fall of 2014 the Char River will be surveyed at various cross-sections;
2. In the fall of 2014 the survey data will be used to develop a theoretical rating curve for the Char River;

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3. In the fall of 2014 desktop assessment of flow condition in the area will be carried out based on available hydrological data;
4. During the open water season of 2015, 3 hydrological field visits (pre-freshet, July and August) will be conducted to gather actual field flow data to calibrate the rating curve. The curve will gain accuracy with each field visit.
5. A water level gauge will be installed on the Char River;
6. Staff will record the water depth and use the flow curve to calculate the instantaneous river flow.

The water level and flow will be recorded and calculated as required during the pumping season. During periods of steadier flow, it will be recorded at least daily with increased frequency during periods of rapidly changing flows. Staff will reduce the pump flow rate as required to maintain the pumping rate to within the 10% maximum withdrawal limit.

During this period, the river water depth will also be monitored at the shallowest point along its length. For now we are proposing to use a minimum depth of 0.5 m but that might change based upon additional work. Pumping will stop if the minimum depth cannot be maintained.

During the fall of 2014, a fisheries literature review study will be conducted to determine if the minimum proposed 0.5 m depth can/should be adjusted. The 0.5 m we have proposed was based upon juvenile rearing requirements for Arctic Char. If the literature review determines that another fish species and/or life stage is more sensitive, then the minimum depth will be based upon whatever that fish species and/or life stage turns out to be.

DFO Slide 7: This was addressed at the hearing and also in the above response to Slide 6.

DFO Slide 8: The water depth at the pump location is not relevant. The commitment to maintain a 0.5 m depth was not at the pump location but at the shallowest cross-sectional depth along the river.

Annual discharge will be determined during the proposed hydrological study so at this time, we cannot propose a lower limit based on mean annual discharge. If that is the preferred approach then we can look at implementing that upon completion of the hydrological study but in the interim we can safely move forward using the minimum depth approach as we have described.

DFO Slide 9: The fish intake screen will be compliant with DFO requirements.

DFO Slide 12: At this time we do not know how many days pumping could be feasible, but the important point to remember is that pumping will not occur unless it is safe to do so according to the mitigation measures that we will have in place.

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If there are any questions concerning this letter, please let me know

Regards,

Stantec Consulting Ltd.

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