Rankin Inlet
Water Licence Amendment

Presentation to the Nunavut Water Board Hearing

September 25, 2014

Fisheries and Oceans Canada Interest

- Providing for the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries under the *Fisheries Act*
- Consideration of the annual replenishment of Nipissar Lake from the Char River

Determination

- Provided proposed avoidance and mitigation measures are fully developed and effectively carried out
  - There is a low probability of detectable impacts to the Char River in terms of its ability to support commercial, recreational and Aboriginal fisheries
  - A *Fisheries Act* Authorization is not required
- Monitoring and adaptive management important
- Uncertainty re: ability of Char River to meet water use needs

Assessment of Mitigation

- Based on annual natural recharge of Nipissar Lake of approx. 314,000 m3
- Estimated use of water per year from the lake of approx. 600,000m3
- Approx. difference of 286,000m3 of water to be pumped from the Char River to the lake each year
- Anticipated max. pumping rate of 0.04m3/s or 40L/s, to take approx. 80 days of pumping from the Char River to replenish Nipissar Lake each year.

Assessment of Mitigation, cont'd

- No more than 10% of the of the instantaneous flow in the Char River would be withdrawn at any time
- Instantaneous flows would be monitored in a way to ensure withdrawal does not exceed 10% of the flow
- An appropriately developed and located low flow cut-off criteria would be used to ensure minimum water depths were maintained
- A compliant fish screen on the intake

Outstanding Concerns and Recommendations

- 10% withdrawal limit
  - What constitutes a pumping “day”?
  - Assumption that pumped volumes are based on 24h/day
- Recommendation: Clarification of whether monitoring of instantaneous flows is continuous. Clarification as to the procedures for determining daily river flow rates and pumping rates, timing of calculations, and how adjustments to rates will be implemented

Outstanding Concerns and Recommendations

- Monitor flows and cease pumping if 10% withdrawal is exceeded
  - mitigation measure to address “potential for loss of habitat and impedance of fish movement”
  - Expect rapid decline in spring freshet flow that may not be adequately captured by daily flow calculations

Recommendation: Clarification of procedure for adjusting pumping rates in response to rapidly changing river flows at spring freshet

Outstanding Concerns and Recommendations

- Inclusion of "cut-off" limit, water depth below which pumping would cease
  - average water depths 0.5m to 0.3m from spring to summer, with some areas up to 1.0m in depth
  - DFO "Ecological Flows Requirements" document referenced – "cut-off limit" is when the instantaneous natural flow drops below 30% of the mean annual discharge for the river

Recommendation: Provide water depth at pump location. Determine appropriateness of 0.5m criteria to manage withdrawal related impacts. Determine annual discharge.

Outstanding Concerns and Recommendations

- Provision of an acceptable fish screen on the intake to avoid entrainment of fish
  - Clarification of screen size and design approach velocity provided

Recommendation: Ensure that the intake fish screen is compliant with Fisheries and Oceans fish screen guideline, which requires attention to all of the compliant fish screen design criteria

Applicant's Obligations

- The Applicant's due diligence is to comply with the *Fisheries Act*
- The Applicant has the *Duty to Notify* the Department if they have caused, or about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery

Habitat Compensation in Char River

- There are no fish habitat compensation works constructed, being monitored, or being planned, in the Char River
- Water withdrawal from the Char River would not affect an existing fish habitat compensation agreement

Comments and Recommendations

- Flow in the Char River may only be available during spring freshet in June
- The desired pumping period of 43 to 79 days may not be available with the application of appropriate environmental flow protection measures in the Char River

Comments and Recommendations

- Support for AANDC recommendations for:
  - multi-year flow monitoring and assessment of viability of the Char River as a water source
  - adaptive management for when flows in the Char River were insufficient
  - a robust alternatives assessment of supplementary water sources

Thank You!