



## Appendix A QIA Technical Review Comments

<b>Comment Number</b>	<b>QIA-1</b>
<b>Issue</b>	Stream Water Withdrawals
<b>Reference</b>	Environmental Management Plan, pg. 4, PDF pg. 8 of 45
<b>Discussion</b>	<p>“Aston Bay will ensure that water withdrawal rates remain &lt;10% of actual (instantaneous) flow and does not result in flows &lt;30% of mean annual discharge”</p> <p>This statement appears to be sourced from Fisheries and Oceans Canada (DFO) Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada (DFO 2013). These flow withdrawal limits should provide protection to aquatic habitat and fish in the Aston River. To ensure operational withdrawals are protective of the environmental flow needs of Aston River, an understanding of the streamflow is required to measure the pumping rates compared to instantaneous flow and/or long term mean annual discharge (MAD). Have streamflow measurements been captured during a variety of flow conditions to ensure that instantaneous withdrawals will be &lt;10% of streamflow?</p>
<b>Recommendation</b>	<p>QIA recommends that streamflow measurements in Aston River be conducted to ensure that proposed withdrawal rates remain will remain within the proposed limits.</p> <p>Measurements during low-flow conditions of the stream will be sufficient if the withdrawal rates are &lt;10% of instantaneous flow during the low-flow period.</p>

<b>Comment Number</b>	<b>QIA-2</b>
<b>Issue</b>	Water Withdrawals from lake north of Storm Camp in winter
<b>Reference</b>	Environmental Management Plan, pg. 4, PDF pg. 8 of 45
<b>Discussion</b>	<p>Winter withdrawals in the lake north of Storm Camp is described to have screens over water intakes to reduce fish entrapment and follow the DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut (DFO 2010). This is good use of cautious policies to minimize potential harm to fish and fish habitat from water withdrawals.</p> <p>A critical requirement of the DFO policy is to withdraw water &gt; 2 metres below the bottom of any ice cover. This requires an understanding of ice depth during the winter and lake depth where the intake pipe is placed.</p>
<b>Recommendation</b>	Please clarify details for how the DFO Protocol for Winter Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut (DFO 2010) will be

	followed and documented with respect to the depth of intake pipe installation during winter months and how the under-ice water volumes are calculated/validated to ensure that <10% of that volume is withdrawn each winter.
--	--

<b>Comment Number</b>	<b>QIA-3</b>
<b>Issue</b>	Greywater treatment
<b>Reference</b>	Waste Management Plan, pg. 8, PDF pg. 11 of 12
<b>Discussion</b>	Greywater is described as being stored and treated in an excavated sump. It is not clear what type of treatment is being applied (chemical, physical, biological?).
<b>Recommendation</b>	Please describe the treatment applied to greywater as described in Waste Management Plan section 4.2.1.

<b>Comment Number</b>	<b>QIA-4</b>
<b>Issue</b>	Aquatic ecological effects of water intake pipes
<b>Reference</b>	Revised NIRB Application, Identification of Environmental Impacts table, PDF pg. 17 of 18
<b>Discussion</b>	Potential biological impacts to aquatic species, including habitat and migration/spawning from water withdrawals associated with camp, staging areas and mineral exploration ought to be considered and acknowledged. Withdrawals can present impacts to environmental flow needs, and the physical pipe location can entrain fish and potentially cause damage to fish habitat.
<b>Recommendation</b>	Please adjust the Identification of Environmental Impacts table and associated application accordingly.

<b>Comment Number</b>	<b>QIA-5</b>
<b>Issue</b>	Drilling Greywater Sump Sizing
<b>Reference</b>	Revised NIRB Application, Waste Management table, PDF pg. 10 of 18
<b>Discussion</b>	Sumps for residual drilling fluids (greywater) are discussed in detail in the table. Further clarification is necessary on how the sizing of the sumps will be determined to prevent excess runoff being conveyed beyond the drill site extents.

<b>Recommendation</b>	Please provide details for how sump volumes will be determined. A reasonable safety precaution may be to size the sumps to hold a water volume 20% higher than the water that is planned to be used to support the drilling operations for the day.
-----------------------	---