

In accordance with the Terms of Reference, which instructed the developer to provide a comprehensive analysis of the key line inquiry, Tyhee should put more emphasis on the questions related to the key line of inquiry. To facilitate this, the information requests in part one contain short descriptions of the information gaps that the Review Board identified in the DAR.

IR Number: 1-1-5

<i>Source:</i>	<i>Mackenzie Valley Review Board</i>
<i>To:</i>	<i>Tyhee</i>
<i>Issue:</i>	<i>Water Quality Issues Related to Existing Impacts from Discovery Mine (Cumulative Effects)</i>

Background

Tyhee proposes to use the tailings cap at Discovery Mine as an airstrip for mine construction and operation on a long term basis. Tyhee also proposes to use Round Lake, which currently receives runoff water from Discovery mine, as a settling pond.

To properly assess the likelihood of significant cumulative impacts on water quality the Review Board requires additional information on the existing contaminants load in Round Lake and how Tyhee's development plans may add to it, as well as impacts that may result from damage to the tailings cap due to continued use as an airstrip.

Request

- 1. Please provide a discussion and analysis of potential impacts from a tailings cap failure.*
- 2. Provide more information on Tyhee's plans for Round Lake. With respect to water quality, please account for Round Lake inputs to the tailings facility. Also indicate how Tyhee may add to contaminant load in Round Lake.*

Tyhee NWT Corp Response

Request

- 1. Please provide a discussion and analysis of potential impacts from a tailings cap failure.*

Tyhee acknowledges the need to maintain the Discover Mine tailings cap and airstrip for long-term use to ensure access to the Yellowknife Gold Project. If the Discovery Mine tailings cap failed, there would be potential for the tailings to be exposed to oxygen and meteoric water. The Discovery Mine tailings cap failure could lead to mass loading in runoff water into Round Lake. The revised mine plan calls for Round Lake to be filled with waste rock. Runoff from a Discovery Mine tailings cap failure would be captured in the proposed waste rock storage facility at Round Lake. Waste rock storage facility seepage and runoff, if any, would be monitored and directed to either the mill or the TCA.

Request

2. *Provide more information on Tyhee's plans for Round Lake. With respect to water quality, please account for Round Lake inputs to the tailings facility. Also, indicate how Tyhee may add to contaminant load in Round Lake."*

Revised Plans for Round Lake

Based on the revised mine plan, Round Lake will be drained and used as a waste rock storage facility. This revision was proposed for two main reasons, first it would reduce the haulage costs for waste rock and second it would place the waste rock facility in a brownfield site that is already impacted by Discovery Mine tailings. The run-off and seepage from this waste rock storage facility will be directed to one of two areas depending on the quality, 1) the mill, 2) the TCA. Because of the location of this waste rock storage area no water would reach the receiving environment without being treated in the TCA.

Water Quality

Round Lake's input to TCA will be analyzed as part of the updated water balance and water quality modeling. Round Lake will be filled with waste rock so any input to the TCA will be from precipitation, run-off, and seepage.

Constituent load to Round Lake will not be an issue based on the revised mine plan.