

Part 2 - Other Issues

The Review Board identified a number of areas where additional information would be helpful in assessing the likelihood of significant impacts on the environment. The Developer should provide any additional information that is available on the items listed below. The remainder of this section provides the relevant sections of the terms of reference and the Review Board's questions in relation to those sections.

IR Number: 1-2-3

Source: Mackenzie Valley Review Board
To: Tyhee
Issue: **Water Balance**

Terms of Reference - - 3.2.1 Existing Environment and Baseline Conditions

3. A water balance that incorporates inflows to and outflows from the mine site, with particular emphasis on the Winter Lake System (including Round Lake, Winter Lake and Narrow Lake) or other tailings facility alternatives, and that also accounts for seasonal variations and peak flow periods such as during the spring freshet...

Water balance for the main site is important since, in order to prevent tailings dam failure, the capacity of the tailings facility will determine the absolute timing of discharge from the tailings facility regardless of the status of effluent with respect to compliance. Tyhee has proposed a water balance and has conducted some work, but indicated that "...insufficient information is presently available to characterize the hydraulic connections between surface water features and shallow and deep fractures...the degree of connectivity between the area drilled and the nearby Winter Lake is presently unknown...additional testing will be required to better define the regional flow system and the area of groundwater flow contributing to the Ormsby pit....[page 150-151]

Request

- 1. Taking into account the above paragraph, please provide additional information on pit inflows in order for the Board to be able to determine the likelihood of potential effects to water quality.*

Tyhee NWT Corp Response

1) The paragraph referenced by the MVEIRB above represents an amalgamation of several citations taken out of context and drawn from Sections 2.10.4 and 2.10.5 of the DAR. Section 4.13.1 (Water Balance) discusses the anticipated rate of dewatering that will be required from the open pit during full build-out. Table 4.13-1 presented below indicated the computed dewatering rates for an average year, 10-year wet and 10-year dry

condition assuming an average observed hydraulic conductivity. These dewatering rates were incorporated into the water balance assumptions and outputs and were fully accounted for in the water balance computations.

TABLE 4.13-1: ORMSBY OPEN PIT FINAL BUILD-OUT MAXIMUM DEWATER RATE												
Dewater Rate (m ³ /month)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Year	31,000	28,000	31,000	30,000	58,486	45,738	17,229	15,434	33,289	31,000	30,000	31,000
10-Year Wet	31,000	28,000	31,000	30,000	70,406	64,756	25,041	18,424	37,295	31,000	30,000	31,000
10-Year Dry	31,000	28,000	31,000	30,000	48,204	29,335	10,491	12,855	29,833	31,000	30,000	31,000