

## MEMORANDUM

To:	Mr. David Swisher	Date:	January 6, 2011
Copy To:	Bill Mercer, Rick Hoos	File No.:	NB101-390/2-A.01
From:	Matthew Parfitt	Cont. No.:	NB11-00008
Re:	Thor Lake Project – Pine Point Hydrometallurgical Site Clarification		

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David:

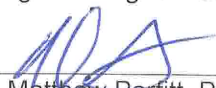
This memo provides clarification regarding naming of historic open pits at the Pine Point Site and a proposed change to the Hydrometallurgical Tailings Management Facility (HTMF) layout as proposed in our previous memo Re: Pine Point Hydrometallurgical Site Tailings Review dated November 3, 2010 (Cont. No. NB10-0488). The clarification and change is the result of recently receiving Traditional Knowledge information from the community of Fort Resolution in conjunction with a clarification email brought to our attention on December 23<sup>rd</sup> by Mr. Wayne Starling regarding historic operations at the site from Avalon.

As per our previous memo NB10-0488, the concept for the HTMF is to discharge tailings within one of the existing open pits. Once the solids have settled, excess water will be pumped for infiltration into the Pr'esquile Aquifer at an adjacent pit. The concept as described in Memo NB10-0488 indicates that the tailings will be deposited within the N-38 Pit and excess water would be discharged to the N-33 Pit. Based on the recent information, the following clarifications and changes are required:

- The pit selected for tailings deposition is not the N-38 Pit as earlier thought, but the L-37 Pit as shown on Figure 1. The N-38 Pit is a smaller pit located southwest of the L-37 Pit which is now infilled with waste rock as shown on Figure 1. Therefore, the tailings solids receptor location proposed is actually the L-37 Pit. As reported by Hannigan, the L-37 Pit was mined to exploit a 3.4 million tonne tabular ore deposit about 900 m long by 375 m wide by 4 to 12 m deep, to produce 34,000 tonnes of Lead and 116,000 tonnes of zinc.
- What was earlier thought to be the N-33 Pit is actually the N-32 Pit as shown on Figure 1. Based on the recently received historical information (email from Wayne Starling dated December 23, 2010), it is understood that the N-32 Pit was used as a long-term solid waste disposal site for the previous Pine Point Mine operations. Based on this new information, it is not recommended that excess water be discharged into the N-32 Pit due to the potential for mobilizing contaminants from the solid waste. It is now proposed to discharge excess water from tailings deposition to the N-42 Pit located southwest of the L-37 Pit. The N-42 Pit was mined to exploit a 3.0 million tonne normal prismatic ore deposit about 490 m long by 180 m wide by up to 28 m deep, to produce 157,000 tonnes of Lead and 281,000 tonnes of zinc as reported by Hannigan.

A revised general arrangement has been developed for the Pine Point Hydrometallurgical Site layout as shown on Figure 2 as well as a revised preliminary water balance flow sheet (Figure 3) based on the clarification and changes noted above. This layout arrangement will be used for development of the project design moving forward.

Signed:



Matthew Parfitt, P.Eng.  
Specialist Engineer/Project Manager

Approved:



Ken D. Embree, P.Eng.  
Managing Director

Attachments:

Figure 1 Pine Point Site Localized Existing Plan  
Figure 2 Hydrometallurgical Site General Arrangement  
Figure 3 Preliminary Water Balance Flow Sheet

References:

Hannigan, P, 2007 Metallogeny of the Pine Point Mississippi Valley-Type Zinc-Lead District, Southern Northwest Territories, Geological Survey of Canada

/mrp

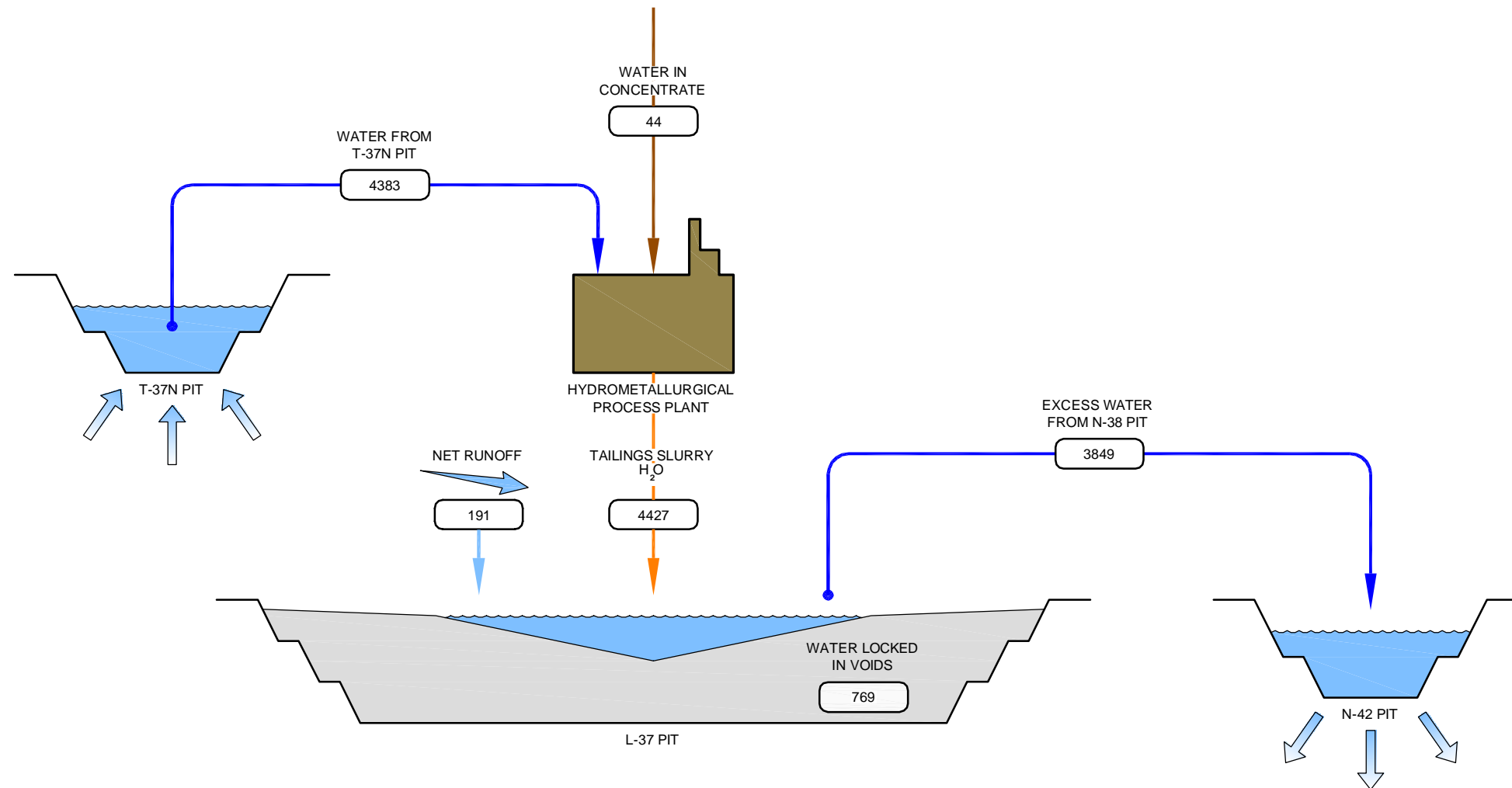












**LEGEND:**

1000 ESTIMATED AVERAGE FLOW (m³/DAY)

**NOTES:**

1. ESTIMATES ARE FOR AVERAGE PRECIPITATION CONDITIONS AND DO NOT INCLUDE EXTREME PRECIPITATION EVENTS.

AVALON RARE METALS INC.

THOR LAKE PROJECT

**PINE POINT AREA  
PRELIMINARY WATER BALANCE FLOW SHEET**

**Knight Piesold**  
CONSULTING

P/A NO. NB101-390/2	REF NO. NB11-00008
FIGURE 3	
REV 0	

0	07JAN'11	ISSUED WITH MEMO	MRP	SIR	DMMD	MRP
REV	DATE	DESCRIPTION	DESIGNED	DRAWN	CHK'D	APP'D