

July 27, 2007

EBA File: 1740149

Tamerlane Ventures Inc.
441 Peace Portal Drive
Blaine, WA 98230
USA

Attention: David Swisher
Vice President

Dear Mr. Swisher:

Subject: Pine Point Pilot Project – Technical Sessions – Ammonia Release Undertaking

As a follow-up to the Technical Sessions held on July 17-18, 2007 in Hay River, NWT, Tamerlane undertook to provide additional information on potential ammonia and nitrate losses and concentrations associated with the underground mining of the R-190 mineral deposit. The following is our response to this undertaking.

As indicated in the Technical Sessions, Tamerlane has committed to use emulsion explosives for the mining of the R-190 underground deposit. The use of emulsified forms of ANFO have been demonstrated to have improved detonation, combustion, and other operational and environmentally advantageous properties compared to the use of ANFO mixes. In particular, from an environmental perspective, the use of emulsion has been demonstrated to produce lower levels of residual ammonia and nitrates in mine water.

Emulsion explosives are made from small droplets of saturated ammonium nitrate solution surrounded by diesel fuel. The fuel coats the small uniform emulsion droplets, thereby providing improved water resistance properties while providing high detonation velocity and a rapid release of energy. The detonation velocities of emulsion products are higher than that of other older commercial explosive products. Ammonium nitrate is used as the primary oxidizer in the emulsion product.

As mentioned during the Technical Sessions, the upwelling of groundwater from below the freeze ring will be captured and pumped well below the active mine level. The bottom level of mine will be at 170 metres and the sump/shaft bottom will be at 185 metres. During initial development, before production mining proceeds, any water remaining inside the freeze ring above the 170 metre level will be drained and pumped out.

It is considered highly unlikely that any compartmentalized water will remain in the stopes to be mined since a top, bottom and slot raise will be completed before mining of the stopes. Thus the stope material to be mined is expected to contain moisture from the previous water exposure but will not contain any standing water in the blast holes. This drier condition, in combination with the diligent application of emulsion loading procedures to minimize the amount of time that the emulsion is in the ground prior to detonation will further reduce the amount of residual ammonia and nitrate produced.

Based on the use of emulsion explosives for the development and operating life of the PPPP, the projected emulsion usage has been re-calculated as follows:

- Stope blasting to encompass 800,000 tonnes at 0.80 lbs/tonne powder factor
- 640,000 lbs of emulsion = 290,300 kg of emulsion
- Face blasting to encompass 300,000 tonnes at 1.2 lbs/tonne powder factor
- 360,000 lbs of emulsion = 163,290 kg of emulsion
- TOTAL estimated emulsion usage = 453,590 kg
- At 1,100,000 tonnes this equates to 0.412 kg/tonne
- At 2,800 tpd this equates to 1,155 kg/day average usage
- Assuming a conservative estimate of 2% emulsion loss, this equate to 23 kg/day lost to surrounding environment which eventually gets mixed with outgoing pumped water
- Tamerlane's estimate of upwelling water was 55 m³/hr, however, the technical experts suggested that this may be on the order of one magnitude higher, which would be 550 m³/hr.
- At 550 m³/hr = 13,200 m³/day or 13,200,000 litres/day
- Ammonium Nitrate (AN) makes up approximately 77% of emulsion, therefore, 23 kg/day emulsion = 17.7 kg/day AN
- 17.7 kg/day AN equals 17,700,000 mg/day
- Total estimated daily AN exposure in outgoing pumped water = 1.34 mg/l

As a basis for comparison with other existing mine operations in the NWT, the following table provides information on ammonia limits for current NWT Mine Licenses. As can be noted, the projected concentration of ammonia in the PPPP effluent stream is lower than the authorized limits for the mines reviewed. It is also important to recognize that for all of these existing mines, the treated effluents are discharged directly to waters frequented by fish, whereas the current plan is to direct the PPPP effluent back into the deep groundwater of the Presquille Zone where most of it originated and will be subject to dilution.

COMPARISON OF AMMONIA LIMITS FOR CURRENT NWT MINE LICENSES						
Minesites	Ammonia Levels in Water License				Unit	Comments
	MAC ¹	MCAGS ¹	MAC (Previous) ²	MCAGS (Previous) ²		
EKATI Minesite	2	4			mg/L	This license encompasses the original minesite area.
EKATI - Sable/Pigeon /Beartooth	2	4			mg/L	This license encompasses the expanded mine area (Sable, Pigeon, Beartooth).
DIAVIK	8	16	n/a	20	mg/L	Ammonia effluent-quality criteria were revised by the WLWB in June 2007.
SNAP LAKE	n/a	20			mg/L	There was provision in the license for an Average Monthly Limit, but this was not applied to NH ₃ ; however, an Average Monthly limit was set for NO ₂ (28 mg/L).

n/a = Not Applicable

¹ MACS = Maximum Average Concentration; Maximum Concentration of Any Grab Sample

² "Previous" refers to the current licence prior to revision of the limit. (Applicable to Diavik only).

Specific Best Management Practices that are recommended for Tamerlane's consideration to minimize losses of ammonia and nitrate at the PPPP include:

- Ensure that all production blast holes are primed according to the explosive manufacturer's specifications and any specific Tamerlane Operating Procedures;
- Staff members have a significant role to play in reducing/controlling AN losses, through proper supervision of loading, emphasis on correct loading procedures and proper training/training updates of blasting personnel.
- A more viscous emulsion product (either an existing emulsion or new homogenized products that are becoming available) should be used to increase water resistance, due to the hygroscopic nature of AN.
- Minimize the time that explosives sit in the ground in wet areas prior to detonation.

EBA trusts that the assessment provided meets the needs of Tamerlane and the MVEIRB.

Yours truly,
 EBA Engineering Consultants Ltd.

Richard Hoos, M.Sc., R.P. Bio.
 Principal Consultant
 Direct Line: (604) 685-0275x239
 rhoos@eba.ca