FAX

To: Alistair MacDonald
Mackenzie Valley Environmental Impact Review Board

Fax: 766-7074

Date: September 6, 2006

Pages: 6, including this one

From: Lorraine Seale, DIAND

Attached are DIAND's comments following up from the scoping sessions for the Tamerlane Pine Point Pilot Project.

Regards,
Lorraine

RECEIVED
3:05 pm
SEP 0 6 2006
MACKENZIE VALLEY
ENVIRONMENTAL IMPACT
REVIEW BOARD

FROM THE DESK OF:

Lorraine Seale
Environmental Scientist
Environmental Assessment and
Agreements Section

ENVIRONMENT AND CONSERVATION
INDIAN AND NORTHERN AFFAIRS
CANADA
BOX 1500
YELLOWKNIFE, NT X1A 2R3
TELEPHONE: (867) 669-2590
FACSIMILE: (867) 669-2701
Email: sealel@inac-ainc.gc.ca

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

P.O. Box 1500
Yellowknife, NT X1A 2R3

September 1, 2006

Mr. Alistair MacDonald
Environmental Assessment Officer
Mackenzie Valley Environmental Impact Review Board
Box 938, 5102-50th Ave
YELLOWKNIFE, NT X1A 2N7

Dear Mr. MacDonald:

Re: Tamerlane Ventures Inc., Pine Point Pilot Project (MVEIRB EA #0607-002)

Indian and Northern Affairs Canada (INAC) was pleased to attend the scoping sessions in Hay River and Fort Resolution on August 16 & 17, 2006. The presentations by Tamerlane Ventures and open discussion by the respective communities and Aboriginal parties at the scoping sessions highlighted numerous concerns and issues in relation to this development.

INAC has previously provided the following technical comments in this development:

- June 21, 2006 preliminary screening comments from Wayne Starling, South Mackenzie District to Mackenzie Valley Land and Water Board (MVLWB)
- June 21, 2006 log of telephone conversation between Malcolm Robb and MVLWB staff
- June 27, 2006 preliminary screening comments from David Livingstone, Renewable Resources and Environment, to MVLWB
- Summary notes from July 12, 2006 meeting between regulators and Tamerlane Ventures.

All of these documents are already on the Review Board's public registry for this assessment. We strongly recommend that the Review Board incorporate the concerns expressed in these documents into the Terms of Reference and Workplan for this environmental assessment.

.../2

Additional comments from the Mineral Development Division, the Water Resources Division and the Environment and Conservation Division are attached as Annex 1. The comments fall into six categories: the infiltration basin, groundwater, the freeze curtain, the DMS circuit, the mineral resource estimates and closure and reclamation planning.

Thank you for the opportunity to comment. If you have any questions regarding these comments please contact Lorraine Seale at 669-2590 or sealel@inac.gc.ca.

Sincerely,

F. Jackson

David Livingstone
Director
Renewable Resources and Environment

c.c. INAC EA Working Group

Annex 1: Additional INAC comments for consideration in developing the draft terms of reference for the environmental assessment of the Tamerlane Ventures Pine Point Pilot Project

Infiltration Basin

It appears from the presentation by Tamerlane that no treatment or monitoring of water pumped from the mine will be done. Any water present in the mine during the production phase will likely contain hydrocarbons (diesel, hydraulic fluid, grease) from underground machinery, sediment from crushed and blasted waste rock, lead and zinc in particulate or possibly dissolved state, plus ammonium nitrate from blasting. Releasing water from the mine directly into the environment without monitoring or treatment is unacceptable and prohibited by the *Metal Mining Effluent Regulations* (MMER's). Tamerlane has stated that it will not have an above ground "tailings" pond. Tamerlane should consider some type of polishing pond or sump, either above ground or underground, to store mine water for testing and treatment before release to the environment.

Tamerlane stated that no geotechnical drilling has been done in the area of the infiltration basin. Ground composition as well as predicted infiltration rates should be calculated. Monitoring around the infiltration basin as well as the inflows into the basin should be included, as well as contingency plans in the event high discharge quantities or unsatisfactory discharge quality occurs. Geotechnical information should also be collected for the waste rock storage area.

Groundwater

Tamerlane should conduct groundwater studies to determine the levels of dissolved salts and solids in the groundwater. Dissolved salts may depress the freezing temperature of the groundwater sufficiently to make the establishment of the freeze curtain more difficult.

Groundwater information in the proposed area is very limited. The proposed monitoring as described in the project description is insufficient. More detail should be provided. The only information presented at the scoping sessions was data from one drill hole completed by Westmin in the 1980's. Tamerlane should measure seasonal groundwater flows to determine the range of recharge.

A detailed water balance table and water recycling management plan are required for this project.

Freeze Curtain

A more thorough assessment of possible problems which may occur in attempting to establish the freeze curtain is needed. Potential effects of groundwater movement causing thermal erosion of the freeze curtain should be considered in more detail.

Tamerlane indicated in the scoping sessions that a liquid nitrogen freezing system was being considered. If liquid nitrogen were used, how would it be piped into the ground and what operating criteria are available?

The karstic nature of the limestone and dolomite in the area creates the potential for large cavities in the rock. What would be the impact on the freeze curtain if it intersects one of these cavities?

Tamerlane stated that dolomitic sandstone below the estimated level of the freeze curtain is supposed to be "less porous" than the overlying limestone and dolomite. Have any geotechnical studies been conducted to determine how much "less porous" the rock is or what the groundwater flow rates in this geological unit may be? Will groundwater seepage from below the freeze curtain occur?

The consultant's feasibility studies for the freeze curtain involve results from soil, not rock. How similar are the thermal properties? As well, the example provided by the company relating to ground freezing at Pine Point Mines was for a raise bore ventilation shaft at Y-65 pit in 1985, where the ground was frozen to 23 metres and the shaft went to 58 metres. The company did not mention that in 1985 the ground water level at Y-65 had been drawn down to approximately 200 ft. below surface to permit dry mining. It would appear the purpose of the freezing was simply to stabilize the overburden from slumping into the shaft, and is not a valid comparison to the Tamerlane proposed freeze curtain. There are several uranium and potash mines in Saskatchewan which employ underground freezing technologies in their mine operations. A comparison with these might be more germane to Tamerlane's project.

Consultant reports in Appendix A of the project description indicated that seepage to the freeze curtain could be controlled by grouting. The *Report on the Great Slave Reef Lead-Zinc Deposits, Pine Point, N.W.T.*, prepared for Tamerlane by Giroux Consultants Ltd. and Ian McCartney, P. Eng. in 2001 (amended 2004) stated grouting techniques had previously been tried at Pine Point as a method of controlling groundwater flow (pg 18) but were not successful. The report is publicly available via www.sedar.com.

DMS Circuit
Initial presentations by Tamerlane indicate that the efficacy of the DMS process decreased with the increase in waste rock to ore. A review of the data from INAC Mineral Industry Reports indicates the grade varies widely among the deposits in the area. If the plan is to mine the other deposits in the area, and the pilot project is aimed at proving the feasibility of the mining and mineral separation methods as presented, why is there a need to "bulk sample" the entire R190 deposit? Metallurgical results from the R190 deposit will have no bearing on the performance of the DMS circuit with ore from the other surrounding deposits where the waste rock/ore percentage is higher and the DMS circuit may not be viable.

Resource Estimates
Estimates presented by Tamerlane in its project description are based on a 1982 ore reserve estimate done by Westmin. Will Tamerlane provide the original data as well as original drill hole locations and drill logs?

Historical information from Westmin in the 1970's-80's indicates that pre-feasibility studies were done on the R-190 and several other deposits in the area. These studies would have presumably included metallurgical data and should be part of the project description.

Closure and Reclamation
Detailed reclamation and mitigation plans were not included in the initial project description and are a requirement for a comprehensive environmental assessment. For further details, please refer to the *Mine Site Reclamation Guidelines for the Northwest Territories*, January 2006 Version. A copy of this document was provided to the Review Board earlier this year, and additional copies are available from Rebecca Chouinard in the Water Resources Division at (867) 669-2664 or chouinardr@inac.gc.ca.