



Mackenzie Valley

Environmental Impact Review Board

***Work Plan
for the
Environmental Assessment
of
Tamerlane Ventures Inc.'s
Pine Point Pilot Project
EA 0607-002***

October 5, 2006

Mackenzie Valley Environmental Impact Review Board

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I INTRODUCTION

On June 1, 2006, Tamerlane Ventures Inc. (“Tamerlane” or “the Developer”) applied to the Mackenzie Valley Land and Water Board for a Type B Water License (MV2006L2-0003) and Land Use Permit (MV2006C0014) for the purpose of constructing an underground mining operation to extract and initially process a 1,000,000 tonne ore deposit at a rate of 2800 tonnes per day from their R-190 property in the Pine Point area, 48 km east of Hay River. A *Project Description Report* and supporting appendices for this Pine Point Pilot Project (PPPP) were filed by Tamerlane as part of its application¹. The Mackenzie Valley Land and Water Board initiated a preliminary screening of the PPPP according to Section 124 of the *Mackenzie Valley Resource Management Act (MVRMA)*.

Environment Canada referred the PPPP to Environmental Assessment (EA) on June 27, 2006, citing that the PPPP “might have significant adverse impacts on the environment”. Their specific concerns included, but were not limited to:

- the use of new technology to establish a frozen core perimeter around the underground works,
- potential for groundwater contamination, and
- the existence of SARA-listed species in the area that merit consideration.

The Review Board notified Tamerlane on June 28, 2006, that the PPPP had been referred to EA.

2. ENVIRONMENTAL ASSESSMENT PROCESS

Section Three of the Review Board's *Environmental Impact Assessment Guidelines* describes the Environmental Assessment process in detail. This work plan describes roles, milestones and deliverables for the environmental assessment of Tamerlane Venture Inc's Pine Point Pilot Project.

3. SCOPE

3.1 Scope of Development

Tamerlane has applied to develop a test underground mine approximately 48 kilometers east of Hay River on its R-190 property in the Pine Point area, west of the Buffalo River. Pursuant to section 117(1) of the *MVRMA*, the Review Board determined that the Scope of Development is that described in the *Project Description Report* submitted by Tamerlane to the Mackenzie Valley Land and Water Board, unless otherwise specified in this document. It consists of all the physical works and activities required to extract, initially concentrate, and ship the economically valuable portion of a 1,000,000 tonne ore deposit. Development activities associated with other potential deposits requiring future licenses and permits are not under consideration in this EA, except where specifically noted. Alternatives identified in the ToR are also to be included as part of the Scope of Development and must be considered by the Developer. The Review Board

¹ Copies of the *Project Description Report* have been distributed to all parties who requested them. Electronic copies are available; contact the Review Board for more information.

may amend the Scope of Development at any time during the EA if the Development Description changes.

The MVEIRB has defined the Scope of Development to consist, at minimum, of the following physical works or activities that will occur during the construction, operation and closure phases:

Mining Process

- Construction and maintenance of a frozen perimeter around the mine shaft and R-190 orebody, using “freezewayall” technology and an active refrigeration unit;
- Development of underground workings, portals, adits, raises, drifts, stopes and all other mine workings, including a main vertical shaft and a main ventilation shaft;
- Extraction and crushing of ore-bearing rock;
- Management of waste rock and aggregate stockpiles, including associated water treatment and management;
- Management of ore stockpiles, including associated water treatment and management;
- Transport, storage and use of explosives;
- Mine dewatering and the management and treatment of mine water; and
- Mining equipment operation, including the vertical conveyance system.

Milling Process

- Construction and operation of a Dense Media Separation (DMS) circuit;
- Consumption of water extracted from the mine workings by the DMS circuit and other on-site activities;
- Storage, handling, use and disposal of DMS process additives and chemicals;
- Construction and operation of an Infiltration Basin; and
- Transport, recycling and disposal of process water, as well as its treatment and discharge to the receiving environment.

Support/Ancillary Facilities and Activities

- “Direct ship” transport of ore from the R-190 site to the railhead at Hay River, temporary storage, and rail transportation south to a lead-zinc refinery;
- Transportation activities that support the PPPP’s operation, including transportation of goods, contractors and employees from nearby communities;
- Any required structural and/or geometric upgrades to Territorial Highway 5 for the specific purpose of supporting PPPP operations;
- Construction and/or upgrading of spur and connecting roads between project components on the R-190 property, including any potential stream crossings;
- Construction and use of drainage control structures and process/waste water pipelines from the mine to the surface, and from the DMS circuit to the Infiltration Basin, including pumping systems;
- Development and use of borrow sources for aggregate production, or contracting out of same;
- Construction and operation of power plant, substation and power transmission infrastructure;
- Construction and operation of the change house, compressor house, refrigeration unit, offices, lunchrooms, warehouses, storage yards, maintenance shops, laboratory and all support buildings;

- Construction and operation of hydrocarbon storage and handling facilities;
- Treatment facilities (and/or transportation to another site for treatment) for wastewater; and
- Solid and hazardous waste management and construction and operation of containment areas.

Closure and Reclamation Activities

- Removal of structures and equipment;
- Reclamation of the Infiltration Basin;
- Reclamation of the road network;
- Reclamation of infrastructure foundations;
- Re-vegetation of areas affected by mining or support activities;
- Reclamation of waste rock and aggregate stockpile locations; and
- Backfilling and capping of the underground works, including backfilling during the operating phase.

3.2 Scope of Assessment

The Scope of Assessment is the determination of which issues and items will be examined in the EA as described in the ToR. The Review Board, after having reviewed Tamerlane's *Project Description Report* and supporting appendices, consultation of the Public Records of the Preliminary Screening and ongoing EA, and hosting scoping sessions, has determined that it requires more information on the potential social, economic, cultural and biophysical effects of the PPPP. Material from the *Project Description Report* can be used where applicable in the required *Developer's Assessment Report (DAR)*, but must be in the format required in these *Terms of Reference* and include any supplementary material analyses and evaluations set out herein. The DAR should be submitted as a separate and complete document. Referring the reader back to sections of the *Project Description Report* is not acceptable.

The Review Board has determined the minimum geographical scope of this EA to include Tamerlane's mineral leases, mining claims, the "Local Study Area"², and all of the lands west of the Buffalo River that are considered as part of the "Tamerlane Study Area"³. It will also consider project effects on all areas that may be affected in some identifiable way by the PPPP, including the Buffalo River downstream of the PPPP, nearshore Great Slave Lake wherever groundwater or runoff potentially impacted by the PPPP enters it. The ranges of wildlife using the area, and the areas potentially-affected by transportation activities, particularly the Territorial Highway 5 and municipal truck routes to the Hay River railhead are also to be considered. All of these areas together will be considered the "EA Study Area". The geographical scope for assessing effects to the human environment shall include, but not necessarily be limited to, the communities of Hay River (including the Hay River Reserve), Fort Resolution, Fort Smith and Enterprise. The concerns of culturally-defined communities who use the land in the Study Area also merit consideration.

The scope of this EA will also include an examination of the cumulative impacts of past, present and reasonably foreseeable future developments. The Review Board recognizes that the determination of

2 The Local Study Area as identified in Figure 4.5-1 (Page 45) of the *Project Description Report*.

3 The Tamerlane Study Area is identified by the shaded area in Figure 1 of Appendix B of the *Project Description Report*.

baseline conditions for this EA is complicated by the history of heavy industrial activity in the Tamerlane Study Area, especially the Pine Point lead-zinc mine run by Cominco Ltd. from 1964 to 1987. The R-190 area has seen fewer disturbances from past industrial activity, but nonetheless may also have been affected in a quantifiable way by exploration, railroad, highway and quarrying activities. The Review Board recognizes that it may be difficult to use quantitative methods to assess the effects of developments or activities that occurred in the distant past, particularly as it applies to establishing “baseline conditions”. Older developments, for which insufficient data are available, may be treated in a more qualitative fashion where best professional judgment or expert opinion is used, from either traditional knowledge or scientific sources. Such cumulative impacts will be assessed at a geographic and temporal scale appropriate to the particular environmental component under consideration. Further instructions are included in Section K, Cumulative Effects.

Temporal boundaries for this EA must be set according to potential long-term effects, rather than just the duration of PPPP operations. Therefore the temporal scope is determined to include all phases of the PPPP, from construction to post-closure, until such time that no potential significant adverse impacts, attributable to the PPPP, are predicted to occur. The Developer is responsible for determining appropriate timelines to address this requirement and must report and justify them in the DAR (see Section G for specific geographic and temporal reporting requirements).

While in this part the Review Board has established the general extent of the assessment boundaries, the Developer in Section G of the ToR will have the opportunity to define the specific spatial and temporal boundaries that will be used to examine the potential impacts on each of the various VCs considered in the EA.

The scope of assessment set out in these terms of reference may be re-examined at any time by the Review Board and amended based on new information deemed to be important to the determination of whether significant adverse impacts on the environment or significant public concern will be likely to occur.

4 ROLES AND RESPONSIBILITIES

The roles and responsibilities of the Review Board and its staff, government bodies, Tamerlane and other parties in the EA are explained in this section. Further information regarding the structure of the EA process is available in the Review Board's *Environmental Impact Assessment Guidelines* and the *Rules of Procedures*.

All submissions received from all sources will be considered during the Review Board's decision-making. Usually such submissions will be public documents and will be posted on the Public Registry. However, the Review Board may accept documents on a confidential basis if requested to and given reasons. Submissions should be in a format that is easily available to all stakeholders and should follow any templates provided by the Review Board.

4.1 Review Board

The Review Board, assisted by its staff, is required to undertake the following in relation to this EA:

- Conduct the EA in accordance with Section 126(3) of the *MVRMA*;
- Take into account any previous screening or assessment report made in relation to the development, in accordance with Section 127 of the *MVRMA*;
- Determine the Scope of Development, in accordance with Section 117(1) of the *MVRMA*;
- Consider a variety of required factors, in accordance with Section 117(2) of the *MVRMA*;
- Make a determination regarding whether the proposed development will likely cause significant adverse environmental impacts or significant public concern, in accordance with Section 128(1) of the *MVRMA*, and make a recommendation on whether the development should proceed and under what conditions based on these findings;
- Identify areas and extent of impacts in or outside the Mackenzie Valley in which the development is likely to have a significant adverse impact or be a cause of significant public concern, in accordance with Section 128(4) of the *MVRMA*, and;
- Report to the Federal Minister in accordance with Section 128(2) of the *MVRMA*.

The Review Board's Environmental Assessment Officer (EAO) is the primary point of contact between the Review Board and the Developer, government bodies (federal, territorial and municipal), non-government organizations (NGOs), aboriginal groups, expert advisors (expert consultants contracted directly by the Review Board), the public and other interested parties. This does not limit or preclude the Developer's contact with other parties during the EA process – the Review Board actively encourages dialogue between parties in parallel forums.

Alistair MacDonald, Environmental Assessment Officer, will coordinate this Environmental Assessment. He can be reached at

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4.2 Developer

Tamerlane is expected to respond in a suitable and timely manner to directions and requests issued by the Review Board. Tamerlane may present additional information at any time to the Review Board beyond what was requested during the EA process. The Review Board encourages Tamerlane to continue consulting all potentially-impacted communities and organizations throughout the EA process.

4.3 Government Bodies

Government bodies may be involved in the EA process as:

- A Regulatory Authority as defined in the *MVRMA*;
- A Responsible Minister as defined in the *MVRMA*;
- A Federal Minister as defined in the *MVRMA*; or
- Advisor to the Review Board.

4.4 Other Parties

First Nations, aboriginal groups, NGOs, the public and other interested parties may request and be granted party standing by the Review Board, as per the *MVEIRB Rules of Procedure*. Parties may provide the Review Board with information relevant to the EA of their own volition, or they may be asked by the Review Board to provide any relevant information they may have. Parties are expected to participate and respond to directions and requests issued by the Review Board in a suitable and timely manner.

In addition to the expertise available from parties, the Review Board may also choose to hire expert advisors to provide technical expertise on specific aspects of the EA.

5 MILESTONES

Table 1 summarizes the milestones and responsibilities in the EA process.

Table 1 - Milestones + Responsibilities in the EA Process

Milestone	Developer	Government Bodies	Other Parties	Review Board and Staff
EA start-up				✓
Scoping Sessions	✓	✓	✓	✓
Draft Terms of Reference and Work Plan				✓
Review and comment on draft ToR and WP	✓	✓	✓	
Final ToR				✓
Work Plan				✓
Developer's Assessment Report	✓			
Conformity Check and Deficiency Statement (if required)				✓
Deficiency Statement Response	✓			

Information Requests (if required)		✓	✓	✓
Information Request Responses or Roundtable technical meeting (if required)	✓	✓	✓	✓
Technical Analysis		✓	✓	✓
Public/Community Hearings (at Board's discretion)	✓	✓	✓	✓
Review Board Report of EA and Reasons for Decision				✓
Response from the Minister of Indian Affairs and Northern Development (if required)		✓		
Consultation - throughout / as required	✓	✓	✓	✓

The following section lists and explains the various deliverables to be produced during the EA process. They are listed in the order they will be produced.

EA Start-up:: The Review Board initiates the notification measures required by the *MVRMA*. The Review Board opens the Public Registry on the EA – all documents related to this EA are available at the Review Board offices or on the web at www.mveirb.nt.ca. The Public Registry is updated regularly. The Review Board will identify expert advisors if and as required. Please refer to Section 3.7 of the *Environmental Impact Assessment Guidelines* for further detail.

Terms of Reference: A final Terms of Reference and Work Plan will be developed by incorporating written comments on the draft document received from parties, as well as comments and conclusions drawn from scoping sessions and previous documents on the Public Record. This document contains the scope of the development, the scope of the assessment, directions to the Developer, a description of the EA process and an EA work plan. Please refer to Section 3.10 of the *Environmental Impact Assessment Guidelines* for further information.

Work Plan: The Review Board will provide an EA Work Plan, which will be subject to modification throughout the duration of the assessment.

Developer's Assessment Report: Tamerlane will be responsible for submitting to the Review Board a DAR that will provide the information listed in Section 4 of these Terms of Reference. The EA will not proceed further until Tamerlane has issued this DAR and it is determined to conform with the *Terms of Reference*. Tamerlane should use diagrams, charts and maps for clarifying information presented in the text where appropriate and should consider the use of a glossary for technical or uncommon terms.

Conformity Check, Review Board Deficiency Statement and Developer's Response: The Review

Board will review the DAR to ensure that Tamerlane has provided the information required. If needed, the Review Board will issue a deficiency statement identifying those areas in which Tamerlane has not provided sufficient information to address an item listed in the Terms of Reference. Tamerlane will be asked to submit information to the Review Board to fill the information gaps identified by the deficiency statement. If the Review Board is not satisfied with the information received, it will halt the EA until it has received an adequate response. Please refer to Section 3.12 of the *Environmental Impact Assessment Guidelines* for details.

Requests for Party Status, Information Requests and Responses to Information Requests: After the DAR has been distributed, the Review Board will issue a call for groups to self-identify their interest in being an official Party to the EA. Party status confers certain rights to groups, such as the ability to submit Information Requests, engage in Technical Meetings, issue Technical Reports and make presentations and ask questions of other Parties at Hearings. Information Requests (IRs) are very specific and focused requests for clarification or additional information. They may be required for the Review Board to complete its analysis and reach a conclusion about the information provided by Tamerlane. The first round of IRs issued will be developed by the Review Board. The second round will be open to all EA participants, although the Review Board retains the right to not issue questions that have already been answered to its satisfaction or are beyond the scope of assessment.

IRs can be issued by any party in the EA and can be directed to any other party. However, all IRs must be submitted to the Review Board for approval and they must also be submitted in the form required by the Review Board. If approved, the Review Board will then issue the IR under its authority to the intended IR recipient. The IRs and the responses will be included in the Public Registry and be used as evidence for the consideration of the Review Board. See Section 3.14 of the *Environmental Impact Assessment Guidelines* for details.

Roundtable Technical Meeting(s) : The Review Board, in lieu of, or in addition to the above-mentioned IR process, may choose to hold a roundtable technical meeting (or meetings) to permit a face-to-face question and answer sessions between interested parties, Tamerlane and Review Board staff. In advance of a roundtable technical meeting, parties will submit their questions/comments to Tamerlane, or to other parties, by way of the Review Board, to allow Tamerlane or parties sufficient time to develop a response. To ensure a fair process, the Review Board exercises discretionary control over what issues may be brought forward in the meeting. Review Board staff will ensure that a record of the meeting is made. Following the meeting, the Review Board will issue a report that details the nature of the proceedings and any technical issues that were identified, discussed, resolved or left outstanding.

Technical Reports from EA parties: The Review Board staff will undertake the analysis of the EA with the assistance of federal and territorial governments, aboriginal groups, the public, and other interested parties. A thorough analysis of the PPPP is essential to assist the Review Board to make the best EA decision. This is a critical stage in the EA process where the key issues and impacts are identified and evaluated. Tamerlane can formally provide and present its views on the information brought to the

Review Board's attention including any proposed amendments, additions or refinements to the development description or the environmental assessment documents. The technical reports from EA parties are to clearly state the reviewer's conclusions, recommendations and supporting rationales. See Section 3.13 of the *Environmental Impact Assessment Guidelines* for details.

Public Hearing: If it believes that it will help in its determinations, the Review Board may choose to hold a public hearing to address outstanding issues that have been raised as part of the EA. The public hearing will offer an opportunity for the Developer, aboriginal groups, the public and government parties to directly address the Review Board with evidence regarding the potential impacts of the proposed project. Following the hearing, the public record for the environmental assessment may be closed and the Review Board will begin its final deliberations, culminating in a Report of Environmental Assessment.

Review Board's Report of Environmental Assessment (EA Decision): The Review Board will provide the Minister of Indian and Northern Affairs Canada (INAC) with its Report of Environmental Assessment as per Section 128(2) of the MVRMA. The Minister of INAC will distribute the report to every responsible minister as per Section 128(2)(a) of the MVRMA. The Developer and the other EA parties will also receive copies of the Review Board's Report of EA. See Section 3.16 of the *Environmental Impact Assessment Guidelines* for details.

6 WRITTEN SUBMISSIONS

All parties, as well as the public, are invited to submit evidence that, in their opinion, will assist the Board in conducting this environmental assessment. Written submissions will be placed on the public record. Upon special request the Board may consider confidential submissions. Parties who do not wish to have their submission put on the public record must contact board staff prior to making a submission. The Board will decide on a case by case basis on the merits of a request for confidentiality and if it will receive and consider such a submission as per its Rules of Procedure.

Submissions should be in a format that is easily accessible to all EA participants. The Review Board prefers documents to be submitted digitally in either Word or PDF format. However, hardcopy, hand delivered or via courier, as well as fax transmission is acceptable as long as the documents can be reproduced via photocopier in a clearly legible manner. For regular mail the date the document is received at the Review Board's office is considered to be the submission date. The Board will not consider any submission after the closing of the public record.

Oversized items or items that are difficult to reproduce, such as colour maps, should be submitted digitally, and/or hardcopy in sufficient quantities to be distributed to those parties with limited access to computer technology. Please contact the Review Board's staff for the quantities required.

7 ESTIMATED SCHEDULE

Table 2 provides an estimate of the timelines required for the major milestones in this EA. These are estimated times and this table will be updated throughout the EA process.

Table 2 – Estimated EA Schedule for Tamerlane PPPP

MILESTONE	Duration
	WORKING DAYS
Referral and start-up of the EA	3 days
Scoping Sessions Prep	32 days
Scoping Sessions (Hay River, Ft. Resolution)	3 days
Preparing draft Terms of Reference and Work Plan	13 days
Comments on draft ToR and WP	10 days
Final Terms of Reference	6 days
Developer's Assessment Report (approximate)⁴	90 days
Review Board Conformity Check and Deficiency Statement (if required)	9 days
Developer's response to the Deficiency Statement (if required)	13 days
First Round IRs	11 days
Developer's response to First Round IRs	20 days
Preparation of Roundtable technical meetings (as necessary)	23 days
Roundtable technical meeting	1 day
Second Round of IRs	13 days
Pre-hearing conference	1 day
Responses to Second Round of IRs	15 days
Parties' technical reports	15 days
Preparation for Public and/or Community Hearing(s)	20 days
Conduct of Public (HR) and/or Community Hearing (FR)	3 days
Closure of Public Registry	2 days
Review Board Requests for Clarification (if necessary)	8 days
Review Board EA decision and Report of Environmental Assessment	50 days
Review Board's Report of EA to the Minister of INAC	1 day
Federal Minister's response to the Review Board's Report of EA	---

⁴ This is a minimum estimate based on prior experience in Environmental Assessments.