

Mackenzie Valley Environmental Impact Review Board

Our file: EA0607-002

January 22, 2007

David Swisher, Senior Project Manager
Tamerlane Ventures Inc.
441 Peace Portal Drive
Blaine, WA, USA 98230

Dear Mr. Swisher

Re: Tamerlane Ventures Inc. Pine Point Project – Review Board Finding of Non-conformity of Developer's Assessment Report

On October 5, 2006, the Mackenzie Valley Environmental Impact Review Board (the Review Board) issued Final Terms of Reference (ToR) for EA0607-002. We received Tamerlane's Developer's Assessment Report (DAR) on January 4, 2007, and the Review Board began a conformity check on January 5, 2007.

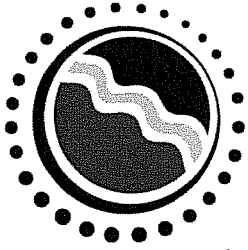
A conformity check determines whether the developer has responded to every item required by the ToR with enough information to address potential impacts on the environment. The overall purpose of a conformity check is to make sure that the large volume of materials that will need to be distributed to interested parties in the form of a completed DAR will adequately address the issues identified in the ToR. A properly completed DAR is essential to the efficient conduct of the remaining steps of an Environmental Assessment

The Review Board met on January 15, 2007 to perform a conformity check on the DAR. The Review Board found that for a number of items the DAR does not conform to the ToR, either by omission of required information or by not providing sufficiently detailed information to permit the Review Board to meaningfully consider the items requested.

The attached Deficiency Statement indicates where responses were deficient in providing the information required by the ToR. They are grouped in the order they appear in the ToR. Selected parts of ToR have been provided in this deficiency statement (and are indicated in italics), as well as specific questions and information requirements, to clarify what information was asked for and is still outstanding. We would encourage the developer to contact the Review Board for any further points of clarification.

The developer is advised that particular emphasis needs to be placed on providing adequate information in the following areas previously required in the ToR:

- **Estimated capital and operating costs associated with the development.** Without information that at least establishes a range of probable costs for the development, the required socio-economic impact assessment cannot be responsibly conducted.
- **The assessment of the human environment** in a variety of areas, but particularly in the assessment of the state of the human environment in the potentially-affected communities,



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employment and business opportunities likely to arise from the development, and the capacity of potentially-affected communities to take advantage of these opportunities. The DAR at present provides little evidence and analysis to support contentions of probable impacts (both beneficial and adverse) on the human environment

- **Cumulative impacts.** Both the potential impacts of the Mackenzie Gas Project and the reasonably foreseeable future expansion of Tamerlane's Pine Point mining activities are required elements in this analysis.

Once the Review Board has determined that the revised DAR is in conformity with the ToR, the DAR may be issued to interested parties and the EA process will proceed into the Information Request phase.

Please do not hesitate to contact me any time at (867) 766-7052 or amacdonald@mveirb.nt.ca, if it is unclear what is expected in the DAR or to discuss the process involved in this Environmental Assessment.

Sincerely,

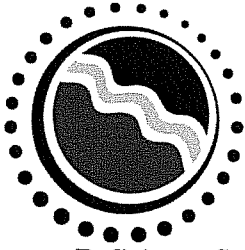
A handwritten signature in black ink, appearing to read 'Alistair MacDonald'.

Alistair MacDonald

Environmental Assessment Officer

By fax and email

attachment



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Deficiency Statement for EA0607-002: Tamerlane Pine Point Pilot Project – January 22, 2007

Selected parts of the ToR have been provided in this Deficiency Statement (and are indicated in italics), as well as specific questions and information requirements, to clarify what information was asked for and is still outstanding.

B Developer

c) *[Provide] a discussion of Tamerlane's capacity to provide financial security for reclamation liabilities in the event of bankruptcy or other unforeseen failure to complete and reclaim the project, as well as a description of who is ultimately legally responsible for the property in case such a failure occurs.*

The required information was not adequately addressed. Please provide the following information:

- A description of what party is legally responsible for the property in case of
 - Bankruptcy of the operator;
 - Unforeseen physical failure;
 - Abandonment of the development due to insufficient economics.

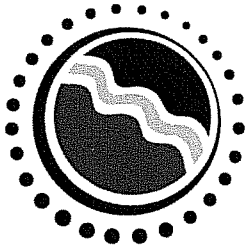
C Description of the Existing Environment

Preamble: The Developer will also identify and provide maps in the DAR of any areas of "special sensitivity" in the existing environment that merit special attention because of the presence of

- a. *The presence of SARA-listed species in the area;*
 - b. *Unique landforms, topography, or geological foundations;*
 - c. *Heritage resources or areas of high potential heritage resources;*
 - d. *Alternative recreational/aesthetic values; or*
 - e. *Traditional harvesting sites, trap lines and/or trails.*
- No effort is made in the DAR to identify, map, or refute the presence of "special sensitivity" based on any of the listed factors (alone or in combination). The developer is asked to clarify whether their impact assessment thus far has identified any areas of "special sensitivity" exist in the Local and/or Regional Study Areas that merit special attention during the Environmental Assessment.

C-12 [The description of the existing environment shall include] ... socio-economic conditions, including social services provision capacity among the communities identified in the scope of assessment;

- The assessment of the existing socio-economic environment is inadequate. The developer is advised to include in its Description of the Existing Socio-economic Environment the past, current and trend status of key indicators for all VC/VSECs considered in its subsequent impact assessment, and to discuss potential reasons behind positive and negative trends in these indicators using contextual knowledge of local and regional economics, society and cultural activities and forces.



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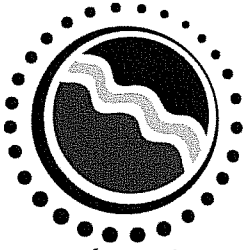
- To assist in this depiction of the existing socio-economic environment, the information requested in sections C-12 to C-14 of the ToR should be included in the Description of Existing Socio-Economic Environment, rather than only in the section on impact assessment.

D Development Description

- *D3 Ore handling route and storage:* Please provide a description and map of the location and status of the roads to the proposed ore storage and handling facility in Hay River, as well as a description and diagram of the storage location and handling procedures. More information about the ore storage and handling facility at the railhead is required, including a discussion of any potential contaminants from the storage of ore on site and management plans. If negotiations for the use of one site are not finalized, descriptions of both a preferred and alternative site should be used. The discussion of impacts and mitigation at this location should be included in the impact assessment section 7.0.
- *D-7 Ore and other materials storage on site:* Please provide specific details on water runoff expectations, management and treatment considerations for each identified materials storage location.
- *D-17 Additional onsite infrastructure:* Please provide maps and a description of perimeter fencing plans.
- *D-20 Expected capital costs associated with constructing the PPPP:* The developer will report an estimate of capital costs for the development in order to establish a sense of the economic scale/importance of this development in the local and regional context and to provide evidence of the potential economic impact this development will have on the communities and regions in question. Recognizing that a feasibility study has not been completed, a range of costs (with a maximum 10% divergence between low and high estimates) can be used in place of a fixed number. Without this information, the Review Board can have no confidence in any of the economic impact estimations or assertions made by the developer.
- *D-21 Estimated operating costs during the life of the PPPP:* The developer will report an estimate of operating costs for the development per annum in order to establish a general sense of the economic scale/importance of this development in the local and regional context and to provide evidence of the potential economic impact this development will have on the communities and regions in question. Recognizing that a feasibility study has not been completed, a range of costs (with a maximum 10% low-high divergence) can be used in place of a fixed number. Without this information, the Review Board can have no confidence in any of the economic impact estimations or assertions made by the developer.
- *D-23 Estimated number of person years of work:* Please provide an estimate of the direct employee and subcontractor employment by years of work, including the method used to measure “person years”.

E Alternatives

As part of this section, the developer was asked to “Indicate where, in the course of community consultation, the PPPP design has been altered to incorporate community values or concerns. Where



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alternatives to the current approach have been requested but not acted upon, indicate who made the suggestion and why it was not considered the preferable option.”

- Please amend the discussion of alternatives to include the above requested information.

F Public Consultation

- Please include a discussion in the section on public consultation listing any areas where discussions with government officials, community members, and/or traditional knowledge holders have influenced the developer’s project design, impact assessment and mitigation measures. E.g., Did the traditional knowledge study provide the developer with new information? This discussion can be in the form of a table or bulleted list.

H Human Environment

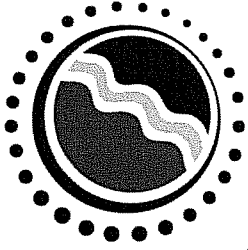
- The Review Board has determined the Section 8.0 of the DAR is generally out of conformity with the ToR. A DAR is out of conformity when there is not enough information provided to assess the potential impacts on the environment. The developer is advised to reconsider all of its responses to the information required in the ToR. The Review Board has provided specific questions here to assist in this re-analysis. These questions are meant to clarify and assist the developer, not replace the original requirements stated in the ToR. Please reconsider all of the requested information from the original ToR when completing your additional assessment.
- In addition to not adequately addressing the specific items requested, the developer does not identify any valued social, economic or cultural components (VCs or VSECs), as requested in the ToR, nor are the steps of a typical SEIA (as described on page 16 of the ToR) followed. As with the DAR section on the biophysical environmental impact assessment, please provide a description of the selected VC/VSECs.
- The developer is reminded that the Review Board expects the socio-economic impact assessment (SEIA) to show similar rigor to work done on the physical environment. The utilization of expert experience in conducting this type of assessment is encouraged. In addition, several levels of government have valuable expertise and data that can be tapped while conducting this SEIA, and community input is also valuable. For more information on Review Board expectations in SEIA, consult the Review Board’s recently released *Socio-economic Impact Assessment Guidelines*.

H-1 Economy

Direct and Indirect Employment

3) *Conduct an assessment of the available labour pool, at varying geographic scales, to meet the direct mine labour requirements, including: Fort Resolution, Fort Smith, Hay River (town and Hay River Reserve), the South Slave region, territorial, and extra-territorial;*

- No assessment is made of what proportion of the workforce might feasibly be available from the local communities and the South Slave region. The statement “Tamerlane anticipates that a considerable proportion of the workforce... can be filled by residents of the South Slave area” needs to have evidentiary backing. Numerical assessments of the local available labour pool is



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essential to this, as is a matching of available skill and education sets to the jobs on offer from this development.

- The developer will identify other developments (local, regional, territorial, national) that may represent hurdles to finding an adequate workforce, and gauge any “labour drain” effect they may have on the target labour pool.

4) *Provide information on any identified barriers to employment, advancement and retention for Northern workers (with particular emphasis on residents of smaller potentially-affected communities and aboriginals), including minimum skill requirements, hiring policies related to criminal records or substance addictions, availability of willing employees, and lack of training opportunities for community members;*

- Please provide the information requested above
- The developer makes several allusions to the existence of a Human Resources Management Plan but does not include a finished Plan. Please provide a copy of the Plan, or if it is not yet completed, an outline of what the Plan will cover and a commitment to when such a plan will be produced.

Business Opportunities

1) *Provide an estimate of required contractor and subcontractor goods and services required through the different stages of the project life cycle, and associated direct and indirect economic effects (e.g., local and regional income multipliers);*

- Please provide the information requested above.

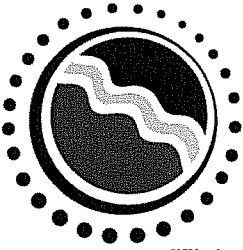
2) *Identify and assess the opportunities for - and capacities of - local, regional and territorial businesses to compete for the right to supply required goods and services, both directly to the proposed PPPP, as well as to meet new demand created by economic growth spurred by the PPPP. Include estimates of what percentage of goods and services might feasibly be provided by northern businesses, and discuss any plans, commitments or strategies Tamerlane has for maximizing this percentage;*

- Please provide the information requested above.
- In addition, more specific information is required on current training initiatives, access of the people of the South Slave to these initiatives, where gaps in training lie, and what specific training initiatives Tamerlane will commit to engaging in if the development goes ahead, and when training needs to start in order for community members to “skill up” effectively to take part in the proposed development.

Distribution of Beneficial and Adverse Impacts

1) *The Developer shall describe the estimated number of trips per day, the type of loads, the costs of increased road maintenance and responsibility for same (if applicable), the current and likely traffic loads during different times of day on the Highway...*

- Provide estimates of numbers of additional vehicle trips per day attributable to PPPP activities (not just ore truckloads), and likely traffic loads during different times of the day, as well as a determination in percentage terms of what increase this represents to the amount of traffic on



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Highway 5.

2) Tamerlane shall list estimates of all predicted economic impacts, both beneficial and adverse, stemming from the PPPP, including but not necessarily limited to impacts caused by:

- a. Increased employment numbers, including a prediction of employment multipliers, and the PPPP's estimated effects on employment levels in potentially-impacted communities;
- b. Predicted increases in local income and disposable income levels (identify income multipliers where possible);

3) Estimating, for each of the items listed above, how the economic effects identified will be distributed among potentially-affected communities. An estimate is required of how much of the economic benefit of the PPPP will accrue to aboriginal groups, individual South Slave communities, the South Slave as a region, other areas of the NWT, and other Canadian jurisdictions;

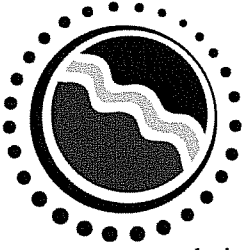
In its submitted DAR, the developer states that "Detailed discussion of potential economic opportunities and benefits and the possible distribution of such opportunities with the key stakeholder groups will occur pending receipt of positive recommendations arising from the Review Board".

The above statement is inadequate and the overall response to this section insufficient. Tamerlane provided only very general material on the overall beneficial and adverse impacts. More detail is required in order for the Review Board to evaluate the distribution of beneficial and adverse impacts. Estimates of predicted impacts are required during the EA process, not subsequent to it. The Review Board has not asked for specifics of what groups will receive what benefits, but rather estimates of the amount of impact likely to occur and the capacity of different communities to access the likely beneficial impacts. When conducting this assessment:

- Please provide a prediction of employment multipliers likely to accrue from this development (e.g., from direct mine employment, increased business opportunities, and spinoff effects).
- Please provide a prediction of income multipliers likely to accrue from this development.
- Given the required estimate of what direct and indirect income and employment is likely to accrue from this development, provide an estimate of what proportional role this development will play in the economies of the affected communities. It may be useful to add context by stating this role using a couple of different scenarios involving the presence or absence of other developments currently proposed going ahead (e.g., the Mackenzie Gas Project).
- Given an understanding of the probable labour and business pools to be tapped from each of the potentially affected communities, please provide an estimate of how much of the economic benefit will likely accrue to individual communities, the South Slave region, and the NWT, versus other Canadian jurisdictions.

The developer was also asked in this section of the ToR to "describe how the PPPP will contribute to local, regional and territorial sustainable development", and was previously asked in Section 7 of Direct and Indirect Employment to discuss the transition of employees into other areas if the development does not proceed into a full scale mine.

- The developer shall examine the potential impacts on local society and economies if there is no further development after the PPPP, using knowledge of other situations where short term,



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relatively labour and capital intensive developments have abruptly ended in the natural resources sector. This discussion shall include an examination of employee transition requirements, available and required government employee transition initiatives, developer training commitments and transitional support in the event of a shutdown after the PPPP.

H-2 Society and Culture

In the ToR, it was advised that *“Tamerlane will use recognized social science methods, community input and Traditional Knowledge to undertake this assessment.”*

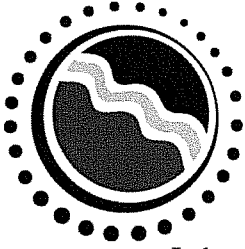
- Tamerlane provided no detailed predictions of impacts in communities related to any of the indicators included in Section 1 of H-2. The impact assessment process described on page 16 of the ToR should be followed for each VC/VSEC.
- The developer is advised that the recently issued *Socio-Economic Impact Assessment Guidelines* of the Review Board provide guidance on sources and means to undertake this type of work.
- Tamerlane will revise its assessment of impacts on community/population health to also reflect additional work done on in-migration scenarios with or without the MGP going ahead (NOTE: the “MGP go” scenario can be discussed in Section K). Least in-migration (best case), most likely case, and highest in-migration (worst case) scenarios would be of value in this analysis. The most likely case scenario needs to be linked by supporting evidence to the likely ability of South Slave communities to provide employees to the PPPP.

3) *[Specific consideration shall be given to] Existing and required social service networks to support community health and wellness.*

- This assessment should give a sense of what programs to promote community health and wellness are currently available (public, private, communal) to the residents and families of potentially-affected communities, the levels of current demand on those services, and gaps between demand and supply at present.
- This assessment should also include a description of potential direct and indirect impacts of the development on social infrastructure, e.g., medical services and policing. Describe detailed mitigations required to minimize or avoid those impacts, what organizations other than the developer would be responsible for mitigation, and an educated assessment of whether the capacity exists to provide adequate resources to mitigate adverse impacts.

6) *[Identify] lessons learned from social and cultural impacts of previous mine developments in the NWT and the North, and how they have been incorporated into the impact identification, prediction and mitigation for the PPPP.*

- The developer provides no analysis of how previous Northern and NWT mine developments, including recent developments, have beneficially or adversely impacted local or regional economies, society and/or culture, although a great deal of information on this subject is available for inclusion in this impact assessment.
- The developer will consider lessons learned from the impact assessments on and actual outcomes of, at minimum, from the following developments: the Ekati mine, the Diavik mine, the currently under construction Snap Lake mine, and the historic Pine Point mine. Other relevant similar developments have occurred in the Yukon, Nunavut, northern Saskatchewan, Nunavik and



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Labrador.

- For greater clarity, the following parameters, at minimum, should be considered in this “lessons learned” exercise:
 - Accuracy of predicted versus actual costing, employment numbers, and business opportunities;
 - The capacity of potentially-affected communities to take advantage of employment and business opportunities, what hurdles were encountered, and how and to what degree these hurdles have been overcome;
 - Impacts of economic development on any of the social or cultural indicators identified in Section H-2 of the ToR or other indicators identified as being impacted by these specific developments.
- The developer will show how any lessons learned have been incorporated into the impact identification, prediction and mitigation for the PPPP.

I Physical Environment

NOTE: The DAR as submitted generally provides a solid description of the status of the existing physical environment, as well as a solid assessment of potential impacts from the PPPP. This portion of the impact assessment alone would not have required the issuance of a deficiency statement. However, in light of shortcomings in other sections of the DAR, the developer is invited to use the time allotted to providing the following information that would otherwise require later Information Requests.

I-1: Water Resources

1) A listing of all applicable water resource permits, licenses, and authorizations that will be required from federal, territorial regulatory authorities, as well as all water quality requirements;

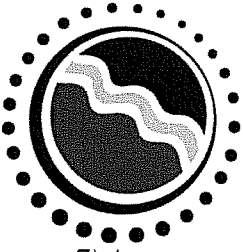
- Tamerlane will identify water quality requirements likely to be imposed on the development, given an understanding of prior license criteria in other MVLWB water licences. In addition, relevant NWT or Canadian Standards for process minewater release should be identified for later comparison to probable PPPP minewater quality.

4) An assessment of the likelihood of success of the freezeway technology, considering the karst environment and the level of salts and solids in groundwater, as well as a prediction of inflows of water into the mine works in both the success and failure case;

- Please provide an examination of water inflows in the failure case.

5)(h) The predicted levels and potential effects from the discharge of nutrients (i.e. ammonia, nitrates & sewage) to the receiving environment, which shall include possible trophic changes in downstream water bodies;

- Please provide an estimate of the predicted level of discharge of nutrients to the receiving environment that includes any discharges from explosives. Required in this is an estimate of the amount of explosives being used, and what amounts of nutrient loading will likely accrue from this.



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7) *An assessment of the potential effects of PPPP operations on promoting erosion and sedimentation via the Infiltration Basin and the potential impacts of sedimentation on the ability of the basin to absorb effluents and contingency plans to deal with sedimentation in the event it becomes a concern;*

- Please provide the above requested information including a contingency plan.

J Closure and Reclamation

The ToR required a conceptual Closure and Reclamation Plan for the purpose of this environmental assessment. The following were not included in the DAR:

2b) A consideration of various reclamation scenarios for the site, including methods and timelines for the completion of mine reclamation based upon the current Development Description;

c) The rationale for the selection of proposed activities versus alternatives that have been dismissed;

e) A visual and written depiction of the entire work site at several stages of post-mining regeneration under the closure and reclamation plan proposed:

- immediate post-closure;*
- one year later;*
- five years later; and*
- 15 years later.*

4) A discussion concerning the feasibility of establishing a self-sustaining vegetation community on the mine site after closure, if re-vegetation is to be considered, which shall include but not be limited to the following:

- Proposed re-vegetation techniques including a discussion on what species will be considered for this activity; and*
- Predicted vegetation re-growth rates.*

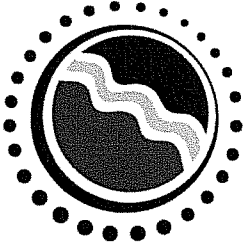
- Please provide the information requested above.

K Cumulative Effects

As mentioned in the ToR, during the scoping sessions, major concerns were identified in relation to, among other issues, potential local cumulative effects of rapid population growth and increased traffic in the Town of Hay River and on Territorial Highway 5, especially if the Mackenzie Gas Project goes ahead.

Therefore, the ToR required the inclusion of the following developments, at minimum, in the examination of the cumulative effects:

- The proposed Mackenzie Gas Project, focusing only on its identifiable impacts on the Town of Hay River and the Hay River Reserve;*
- The reasonably foreseeable expansion of the Tamerlane mining development to other easterly trending identified ore bodies*



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- Please revise the cumulative effects assessment accordingly, to include scenarios involving either and both of the required developments along with the PPPP. Obviously, cumulative effects from the latter need to be considered as a temporal extension of the PPPP, while the former should be considered as potentially occurring at the same time as the PPPP.

L Accidents and Malfunctions

2) Predict the risks and effects of accidents and malfunctions, with particular consideration to a structural failure of the underground mining works; failure (breach) of refrigerant distribution pipes; failure of the freezwall technology to contain water inflows to the mine and associated pressures on the Infiltration Basin, especially considering the karst geology and groundwater quality and quantity; major seismic activity impacts; major fuel spills at the site or on transportation routes; accidents involving the transportation and handling of any hazardous materials.

- Please provide a risk assessment related to a structural failure of the underground mining works.
- Please provide a risk assessment related to the failure of the Infiltration Basin to handle the mine wastewater inflows in the case of freezwall malfunction.
- Please consider whether an adequate risk assessment related to the freezwall technology's ability to keep water inflows to the mine has been completed; if not, provide additional analysis.