

February 20, 2009

VIA EMAIL

Paul Mercredi
Environmental Assessment Assistant
Mackenzie Valley Environmental Impact Review Board
200 Scotia Centre
Box 938, 5102-50th Ave
Yellowknife, NT X1A 2N7

Re: Draft Terms of Reference and Workplan for the Environmental Assessment of Tyhee NWT Corp.'s Yellowknife Gold Project (EA0809-003)

Dear Mr. Mercredi,

The Government of the Northwest Territories (GNWT) is pleased to provide comments on the draft Terms of Reference for the Tyhee NWT Corp. Environmental Assessment.

We do not have any comments regarding the Workplan nor have we identified any additional information requirements regarding the designation of Winter Lake as a Tailings Impoundment Area, under Schedule 2 of the *Metal Mining Effluent Regulations*, at this time.

Our comments, organized by topic, are provided below.

If you have any questions or concerns please contact me at (867) 920-6593 or by email at loretta_ransom@gov.nt.ca.

Sincerely,



Loretta Ransom
Environmental Assessment Analyst
Environmental Assessment and Monitoring

GNWT Comments on MVEIRB Draft Terms of Reference for Tyhee NWT Corp.'s Yellowknife Gold Project (EA0809-003)

Page #	TOR Section Reference	Comments
Environmental Protection		
15	6) Further depictions of typical surface and sub-surface geology	Include seismicity, permafrost, soils and lake sediments
16	B. 1a) A fully-detailed description of the impoundment facilities, including an explanation of how such a design will contain any toxic compounds regardless of source	Not necessary to include ‘including an explanation of how such a design will contain any toxic compounds’, as this will be evident in the description of the design for an impoundment facility. The use of ‘regardless of source’ is unclear.
16	B. 1c) Geological and geothermal analyses	Include geotechnical.
16	B. 2) Full engineering designs and specifications for any tailings containment area dam	Include dykes. Identify future schedule for dam/dyke inspections (i.e. visual inspections, Dam Safety Review).
16	B. 3) Further details about any modifications to the existing airstrip, with geotechnical engineering plans that verify the stability of such changes	In addition to ‘modifications to existing airstrip’ include considerations of potential impact due to increased use, with respect to mine life and type and frequency of aircraft to support YGP activities.
16	B. 5) A full characterization of any natural resident rock or aggregate that Tyhee intends to utilize for any project phase or purpose, including the source for any materials and specific probabilities for acid rock drainage/metal-leaching (or any other impacts). The description will include an estimate of the volumes that the Developer will need for all project phases, with particular focus on the Developer’s need for use of esker aggregate	Define ‘characterization’ to include ‘geochemical characterization’. Define practices employed to differentiate potentially ARD/ML materials from benign construction aggregate materials. Include management of this material in (B.6). Include details on the size of esker, volumes of material required, and extractable quantities.
16	B. 6) A description of ore, waste rock, soil and overburden storage facilities with focus on the precise locations where the Developer will place any acid-producing or metal-leaching material, as well as the projected volumes for such material	As stated above, ‘aggregate material’ should be included in (6). Include description of water management systems and/or mitigative measures employed to prevent ARD/ML potential and limit seepage.
16	B. 7) In conceptual Waste Management and Hazardous Waste Management Plans, the locations, designs and descriptions of any and all other solid and hazardous waste facilities, including destinations for each waste type and an explanation as to how such configurations will prevent impacts to the environment, with particular attention to the volume of material that Tyhee will process in these facilities	-In addition to descriptions, location and designs of the waste ‘facilities’, include: <ul style="list-style-type: none"> • the identification of non-hazardous, hazardous, combustible and non-combustible wastes, • plans for waste segregation, storage and the strategy for its implementation • identification of mitigative measures to prevent wildlife attraction • listing of expected waste types and quantities to be transported off-site and

		<p>identify the respective final disposal locations both inside and outside the NWT.</p> <p>-Include details on treatment, testing in addition to ‘destinations for each waste type’,</p> <p>-Identify risks and potential impacts associated with handling, storing, using and disposing of hazardous materials</p> <p>-Identify all sources and related pathways to receiving environment</p> <p>-pg 27 of ToR makes reference to incineration activities proposed on site, however incineration details are not requested. Therefore, provide details on incineration practices (i.e. description of waste streams intended for incineration, selected incineration technology and rationale for selection, operator training and qualifications, procedures for operation and maintenance)</p>
16	B. 8) The locations, designs and descriptions for any other water management and treatment structures, including a prediction for the volume of water that such structures will manage	“any other” is misleading as prior to (8) there has been no mention of water management structures . The description of treatment would include information on the intended treatment levels or standards.
16	B. 9) A description of and schedule for dewatering (or drawing down) any waterbody for any aspect of the Yellowknife Gold Project	Include considerations for impacts on hydrology, chemistry and fish and aquatic habitat.
16	B. 10) A full account of every chemical or other reagent that Tyhee will need during the milling process, with particular attention to cyanide, and the designs for the destruct circuits that may convert these compounds to less toxic forms	This would be a component of (7). Is the intention for a focus on primarily the <u>mill process</u> ? ‘Full account’ should read identification, volumes, storage and disposal.
16	B. 12) Designs, description and location of water intake infrastructure at Giaugue Lake, as well as for the overland pipeline for such water, with particular focus on how the Developer will maintain the integrity of any tailings in the area and also meet any <i>Fisheries Act</i> regulations for intake structures and docks	Include ‘historic’ to provide clarity with respect to tailings associated with Giaugue Lake. Include information on contingency measures to address potential resuspension of tailings and its subsequent impacts.
16	B. 13) Design, description and location of the process plant, milling facility and any support infrastructures	(13) and (14) could be combined to read “design, description and location of all infrastructure associated with YGP activities”.
16	B. 14) Design, descriptions and locations for any other structures that Tyhee will have to either construct or manipulate for the overall project	(13) and (14) could be combined to read “design, description and location of all infrastructure associated with YGP activities”.

16	B. 15) A description of the types of explosive(s) Tyhee will use, including their storage, handling and application procedures, and a description for how Tyhee will prevent the contamination problems that other mines have experienced with	Considerations and description of the impacts of blasting and its associated residues, in particular, nitrogen, nitrate, nitrite and ammonia.
26	H.1)Tyhee’s prediction for the type, extent and reach of impacts to vegetation in the project area	‘Vegetation’ be replaced with ‘local plant communities and rare or highly valued species’. Include considerations for long-term, direct and indirect habitat loss or alteration
26	I.1) Quantify how each project component, such as open pits, esker quarries, or waste rock piles, will impact the surrounding environment	Replace “project component, such as open pits, esker quarries, or waste rock piles” with “when any surficial geology, bedrock or soils are disturbed or used”.
26	I.2) An adaptive management plan to monitor and mitigate against adverse effects on local terrain, including: a) a quarry management plan b) a waste management plan c) a geotechnical monitoring plan	-The requirement of these plans under this section is slightly unclear. -A quarry management plan would fall under the requirements listed under B.5 -A waste management plan would fall under the requirements listed under B.7 -Would the geotechnical monitoring plan be for the whole project area, Tailing Containment Facilities, locations for various site infrastructure? -Adaptive Management should be a consideration for all Management Strategies and Plans developed for the YGP.
34	L. 1g) A description of the measures for preventing, responding to and mitigating any accident or malfunction in a through environmental emergency response plan, which will include spill response and contingency plans	Refer to <i>GNWT’s Guide to the Spill Contingency Planning and Reporting Regulations</i> and <i>INAC’s Guidelines for Spill Contingency Planning</i> to develop a concise and complete Plan (refer to ENR comments made on Tyhee’s December 4 th Spill Plan submission). Plan should also detail disposal options and methods associated with Spill Response.
36	N. 2) A conceptual Closure and Reclamation Plan, which will include:	Document how initial site design includes considerations for Closure and Reclamation. Follow an “objectives-based” approach that defines clear statements of objectives and subsequent closure criteria (refer to <i>INAC’s Mine Site Reclamation Guidelines for the Northwest Territories</i>). Identify what standards mine components will be reclaimed to.
37	N.2a) A list of Closure and Reclamation components and activities including a rationale for why Tyhee chose a particular option and how it best meets the goals for responsible reclamation	Provide discussion on all options considered, in addition to rationale why one was chosen.

37	N.2b) A depiction of the project area after closure and reclamation of the mine in relation to its present condition, which will include various reclamation scenarios for the site that include structural demolition and equipment removal and with particular attention to how Tyhee will reclaim the open pits	Particular attention should be applied to all mine components rather than focusing on merely the open pits.
37	N.2d) A conceptual post-closure monitoring plan that assures protection for the surrounding environment, including a schedule for reporting	In addition to a schedule for reporting, adaptive management/triggers/contingencies should be considered.
37	N.5 Conceptual management and monitoring programs for waste rock, overburden or other material that may cause an acid rock drainage effect	The management and post-closure monitoring of ARD potential material should include considerations for ML potential as well. This information should be included in N.2d) Post-Closure Monitoring Plan.
37	N.7 A history of consultations, since October 2008, that Tyhee has had with local communities and Aboriginal groups for the identification of various Closure and Reclamation issues, as well as a record that shows how Tyhee has adapted plans to alleviate such concerns	Include information on plans for the development of a Reclamation Research Plan, in addition to describing process for future community meetings to discuss and evaluate Closure Options.
37	8a) Re-vegetation techniques including a discussion on what species Tyhee will consider for this activity	Information on 'techniques' should include details on maintenance (i.e. fertilizer applications) and monitoring and evaluating success.
Wildlife		
14, 15	<p><i>The Review Board notes several parties raised concerns that the 2008 Project Description Report, while adequate for preliminary screening purposes, did not provide sufficient detail for environmental assessment....The Description of the Existing Environment will include, but not be limited to the following:</i></p> <p>8) Wildlife and respective habitat;</p>	<p>ENR requests that the proponent collect adequate baseline data for wildlife and respective habitat in consultation with ENR biologists so as to ensure the quality and accuracy of data.</p> <p>In the Project Description, the Proponent stated the intent to remove of materials from eskers for building of infrastructure. ENR would like to reiterate a concern regarding the loss of potential for denning habitat in the eskers.</p> <p>To reiterate points put forward in the scoping section ENR recommends that in addition to providing updated baseline data for all VC's (and federally and territorially listed species) in the project area:</p> <ul style="list-style-type: none"> • the Proponent complete another survey of the eskers to determine if they have

		<p>been used as denning sites since the 2005 survey.</p> <ul style="list-style-type: none"> The Proponent complete surveys for short-eared owls be later in the spring and/or summer (previous survey was completed over one day in April).
25	<p>4) A YGP Wildlife Management Plan for any aspect of the Yellowknife Gold Project that incorporates furbearers, migratory birds, waterfowl, large ruminants, and large carnivores, in regards to activities occurring at the mine site and in the transportation corridor, including but not limited to:</p> <p>a. wildlife monitoring plans for any wildlife in the vicinity of the YGP that especially outline what effects the mine causes and what effects are part of the natural environment, with specific attention to how Tyhee will accommodate any rare, threatened or endangered species that the <i>Committee on the Status of Endangered Wildlife in Canada</i> defines;</p> <p>b. adaptive management measures to avoid, minimize, and mitigate effects to wildlife when Tyhee detects problems for wildlife that the development has caused.</p>	<ol style="list-style-type: none"> ENR requests that the ToR also specify that the Wildlife Management Plan (WMP) be drafted, and reviewed by ENR Wildlife specialists prior to the start up of development activities. In an effort to contribute to regional monitoring programs and cumulative effects data, ENR requests that wildlife reporting procedures be included in the WMP, these should include (but not be limited to): <ul style="list-style-type: none"> - description of wildlife sighted (species) - description of what the animal(s) is doing - gps of location of sighting - record of human interaction (if any) <p>In addition, Wildlife log data should be submitted to ENR regional biologists at regular intervals</p>
25	<ol style="list-style-type: none"> A list of all species that the Yellowknife Gold Project will impact, including a reasonable rationale for excluding a species from consideration (if the Developer has a strong case for that exclusion); For each species in (1), predict the mode of that impact, be it through effects to air quality, water quality, soil quality, or combinations thereof as well as against the impact prediction criteria in the <i>General Considerations</i> section; For each project component that the Developer identifies in the <i>Development Description</i> section, predict impacts to those species in (1) using the impact 	<p>To guide the Proponent in the description of the potential impacts , ENR recommends that the analysis of the development should include (but not be limited to):</p> <ul style="list-style-type: none"> Impact of loss of terrestrial habitat, and the quality of lost habitat for relevant species; Disturbance of feeding, nesting, denning or breeding habitats; Physical barriers to wildlife; Wet-land habitat alteration; Disruption, blockage, impediment and sensory disturbance of daily or seasonal wildlife movements; Rare, vulnerable, threatened or endangered species as outlined by

	prediction criteria in the <i>General Considerations</i> section;	<p>COSEWIC and SARA;</p> <ul style="list-style-type: none"> • Direct wildlife mortality; • Reduction in wildlife productivity; and • Implications of the proposed development acting as an attractant for particular species.
Energy		
8	Table 1: Current Project Components, Support / Ancillary Facilities and Activities	To ensure consistency on this issue throughout the TOR, the Board may wish to consider also including the following point: <ul style="list-style-type: none"> • power generation.
15	Development Description, Section B	To ensure consistency on this issue throughout the TOR, the Board may wish to consider also including the following point: <ul style="list-style-type: none"> • energy use.
19	9) Evaluate alternatives to diesel power generation, with particular consideration to utilizing hydro-electric power, as well as possibilities for co-generation.	We are pleased to see that the Board is asking the Developer to evaluate alternatives to diesel power generation.
Health		
31	<p><u>Subjects of Note</u></p> <p>1) Community/population health and associated indicators such as, but not limited to: a. Population in- and out-migration; b. Alcohol and drug access and use; c. Access to health care; and so forth...</p>	The alphabetical list should also include STI rates . This indicator has been included in other documents, as increases in prevalence are a health concern in communities affected by mining activities.
Education and Employment		
28	<p><i>As part of this assessment, the Developer will use rely on its statistically defensible labour pool information characterization from the Description of the Existing Environment section.</i></p> <p><i>This that will support the any Developer's assertions that the available regarding the Mackenzie Valley NWT labour pool. is at its maximum capacity due to the presence of larger mines.</i></p>	<p>The intention of this paragraph is unclear and inconsistent with DRAFT ToR, Section 5.1 Approach, paragraph 2.</p> <p>The revised wording takes into consideration DRAFT ToR, Section 6A, # 13, p.15 and Section 6B, #20, p.17.</p>
29	A thorough description of any barriers to direct employment, advancement and retention for Mackenzie Valley residents, with particular emphasis on Aboriginal people and residents of smaller communities. This description must also include minimum skill requirements, employee availability,	<p>The paragraph suggests a lack of training available in the North, which is a subjective statement. Please see suggested revisions.</p> <p>The focus of the EA for training should be on identifying skills gaps and training requirements to ensure the Proponents and its partners provide maximum benefit to Northern and</p>

	and a discussion on the lack of training training opportunities available through each phase of the project. opportunities for community members. Tyhee must also list identify any skill gaps that would require additional training to maximize current training or education gaps that may inhibit maximal direct project employment benefits of for Mackenzie Valley-NWT residents and/or Aboriginal persons. at the Yellowknife Gold Project;	Aboriginal people in the NWT.
30	Employment numbers, including a prediction of employment multipliers for the development, and estimated effect impact on employment levels in Mackenzie Valley the affected NWT communities;	Qualitative and quantitative estimates for all possible beneficial and adverse economic impacts should focus on the affected NWT communities.
31	Community/population health and associated indicators such as, but not limited to: i. Educational access and education completion rates and levels j. Participation in and results of training activities k. Employment rates and levels	Specific consideration to indicators “i”, “j” and “f” would be useful for analysis of the Project’s impacts on the social environment of the affected NWT communities.
8	Table 1, Current Project Components – Support/Ancillary Facilities and Activities	“Transportation activities that support YGP’s operation, including workforce movement and use of the winter road for YGP specific support activities;”
Geographic Scope – Socio-economic Environment		
9	The geographical scope for assessing effects to the human environment will include, but not necessarily be limited to, the communities of Yellowknife, Dettah, N’Dilo, Rae-Edzo, Gameti, Wekweti and Wha Ti. Since the North Slave Metis Alliance (NSMA) is an organization representing the interests of Metis people in the North Slave region, the developer will include the NSMA and its constituents in any consideration that affects Aboriginal persons, communities or organizations.	The Developer is directed to examine socio-economic effects on Yellowknife and on those communities that have traditional ties to the immediate area. However, any community on a transportation route may be directly affected. In addition, NWT mining operations are currently finding that there are available workers throughout the NWT. In addition to the communities in the immediate area, NWT mines currently draw some employees from the Sahtu and Beaufort-Delta regions and rely heavily on the corridor of communities near the highway system from Yellowknife to Fort Smith. Lastly, economic effects (employment, business and taxation effects) typically extend beyond the NWT. The draft TOR refers to this The following wording change is suggested:

		<p>The geographical scope for assessing effects to the human environment will encompass all NWT communities, and regions outside the NWT, that the project may affect, including NWT communities affected by road activities. This includes, but is not necessarily limited to, the communities of Yellowknife, Dettah, N'Dilo, Rae-Edzo, Gameti, Wekweti and Wha Ti. Since the North Slave Metis Alliance (NSMA) is an organization representing the interests of Metis people in the North Slave region, the developer will include the NSMA and its constituents in any consideration that affects Aboriginal persons, communities or organizations.</p> <p>Alternately, the Board may wish to require the Developer to provide “a reasonable rationale for excluding an NWT community from consideration.”</p>
Socio-economic Components		
16, 30	<p>K-2(1)b Federal, territorial and municipal taxes that Tyhee may remit, as well as from linked economic development; K-2 (1)f All possible increases in physical and social service infrastructure that will occur as a result of the YGP (i.e. medical care or family social services etc.); and</p> <p>7) In conceptual Waste Management and Hazardous Waste Management Plans, The locations, designs and descriptions of any and all other solid and hazardous waste facilities including destinations for each waste type, and an explanation as to how such configurations will prevent impacts to the environment, with particular attention to the volume of material that Tyhee will process in these facilities; 8) The locations, designs and descriptions for any other water management and treatment structures, including a prediction for the volume of water that such structures will manage;</p>	<p>The GNWT examines effects on the socio-economic environment using a 5-point framework:</p> <ol style="list-style-type: none"> 1. Non-traditional economy (business and employment opportunities); 2. Traditional economy and cultural well being; 3. Community, family and individual well being; 4. Net effects on government; 5. Sustainable development. <p>We are comfortable the draft TOR, after incorporating the suggested changes regarding business opportunities, will all the assessment to adequately address these five points with one exception. Net effects on government may not be adequately addressed. The Board has asked the Developer to discuss changes in public services arising as the result of indirect impacts (Section K-2 (1)f.). The Board also asks for an assessment of the allocation of taxes (Section K-2(1)b.). Lastly, points (7) and (8) on page 16 ask the developer to identify the locations of water treatment structure, water volume, waste volume and waste facilities. However, the TOR requirements may be clearer if an additional point were added to Section K-2 (1): (h) A prediction of the direct impacts that the YGP</p>

		may have on public infrastructure or services (e.g., waste or water treatment sites, emergency services) .
Socio-economic Follow-up Plans		
30	K-2 Distribution of Beneficial and Adverse Economic Impacts	The TOR could be strengthened with a specific reference to follow-up and reporting, We suggest this be inserted into Section K-2 as either a Subject of Note or an Other consideration. Asking Tyhee to submit a plan for the monitoring, management and reporting of Project effects and commitments would be sufficient.
Business Opportunities and Effects		
15	13) A robust characterization of the Mackenzie Valley labour pool at varying geographic scales, including: local small communities, Yellowknife, the North Slave and Tlicho regions, as well as territory-wide. To assist in the assessment of impacts on the human environment, the Developer must focus on determining the labour pool that is available for employment at the Yellowknife Gold Project;	Baseline data -- The TOR should include a business corollary for item 13. We suggest adding the following: A robust characterization of the Mackenzie Valley business community at varying geographic scales, including: local small communities, Yellowknife, the North Slave and Tlicho regions, as well as territory-wide. To assist in the assessment of impacts on the human environment, the Developer must focus on determining the pool of NWT businesses that are available to provide goods and / or services to the Yellowknife Gold Project;
18, 19	5) Evaluate alternative mine development schedules that consider prolonging the Tyhee – Yellowknife Gold Project Draft Terms of Reference 19 opportunity that Tyhee has to leave a positive socio-economic legacy for Northerners beyond short term employment;	Key Lines of Inquiry – we suggest changing item 5, as follows: “Evaluate alternative mine development schedules that consider prolonging the opportunity that Tyhee has to leave a positive socio-economic legacy for Northerners beyond short term employment and business opportunities;
Cumulative Effects		
31	5) The effect of the YGP and other developments (either past, present or pending) on the political development, social development, cultural values, traditions and language among Mackenzie Valley communities;	The Board may wish to consider moving point (5), Section K-3, to the cumulative effects section of the TOR.
Editorial Comments		
34	2) In light of similar problems that other mines have had with tailings facilities, a full	Should likely read: “The Developer will also include thorough management plans for such a

	<p>investigation into the possibility that ‘ice-lensing’ in the sediment and ground underneath any Tailings Containment Area will decrease the volume of the facility and thus increase any chance for a malfunction to occur. The Developer will also include a thorough management plans for such a possibility;</p>	<p>possibility:”</p>
<p>23</p>	<p>Preamble: <i>In the executive summary for the 2008 Project Description Report (PDR), Tyhee reported not catching any fish from Winter Lake. However, further in the executive summary and in the main body of the PDR, Tyhee reported catching several fish in Winter Lake. In light of such contradictory evidence, the Review Board more detailed analysis in the Developer’s Assessment Report of the value of Winter Lake as habitat for fish and other aquatic species.</i></p>	<p>Section F, Preamble – “<i>the Review Board requires more detailed analysis in the Developer’s Assessment Report of the value of Winter Lake</i>”</p>