October 25, 2006 EBA File: 1100060.004

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via email: DJohnson@Tahera.com

Attention: Dan Johnson

Subject: Jericho Diamond Mine
Reply to NWB
Review Comments to Jericho Divider Dyke
Construction Specifications

EBA Engineering Consultants Ltd.'s responses to questions and comments in NWB Letter dated September 12, 2006 regarding the Jericho Divider Dyke A Construction Specifications are presented below. The original NWB comments are in italics. EBA's reply follows each comment.

1. The construction specification title refers to Divider Dyke A construction, however, in select locations within the design report there is reference to both Divider Dyke A and B. Are the construction specifications reported in this document only applicable to Dyke A? Will another construction specification document be formed to address construction of Dyke B?

The specifications are for Divider Dyke A. Individual specifications and drawings will be submitted prior to the Divider Dyke B construction.

2. Throughout the construction specifications there have been commitments made to have the engineer on site judge/evaluate/approve certain provisions. The engineering body responsible for supervision should produce construction and engineering records that detail how each of these commitments were carried through. The Board requests a detailed report (partnered with as-built construction and engineering records) discussing how each of the following provisions within the listed specifications was carried through:

- *General (Item 2.0)*
- *Foundation Preparation (Items 2.0, 2.1, 3.4, 4.0)*
- *Fill Placement (Items 1.3, 3.1, 3.2, 4.2, 5.0, 5.2)*
- *Quality Assurance (Items 1.2, 2.1, 2.2)*

Many aspects of the construction require field judgment, inspection and approvals by field personal. Quality assurance testing will be carried out as specified. The as-built construction drawings and construction summary report will document the construction, and quality assurance testing. All of the topics listed above are normally described in our as-built reports. The as-built reports will be submitted upon final construction completion.

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3. (General Item 2.0 - Materials) The volumetric units are missing from the quantity of materials required for construction of Dyke A. The Board requests clarification is required to address this issue. Additionally, on page 2 within the "Notes" section, the Board requests clarification is required as to what "for Sections 2.1 and 2.2" refers to.

The units in the table are m^3. The notes refer to the volumes in the table.

4. (Foundation Preparation Item 3.0 – Key Trench) TDC stated that select materials for the dyke must be keyed into the foundation. The Board requests additional detail and discussion on what characteristics, specifications, and criteria will be used to determine the design, extent, and depth of key trench. This information may be communicated in another TDC document. If this is the case the NWB invites TDC to appropriately reference where this information may be found.

The purpose of the key trench is to provide a secure contact between the filter zone and soils or rock that contain material that will not allow flow of fine PK through the foundation. The key trench will be excavated to undisturbed competent rock, lacustrine sediments or well graded till. The base of the key trench will be inspected for fractures in the rock, or coarse material (boulders, cobbles or gravel). Unsuitable materials will be removed.

5. (Foundation Preparation Item 4.0 – Foundation Approval) TDC stated that the contractor shall list which foundation areas require inspection and approval by the Engineer. Why are inspection areas limited to the contractors list? The Board requests additional documentation outlining inspection details. Does TDC intend to include this information in the construction records they are to submit to the NWB as per Part D, Item 19 of water license 2AM-JER0410 (formerly NWB1JER0410)?

The specification states that the contractor shall not place any fill before the foundation is approved; therefore all foundations must be approved by the Engineer before dyke construction can proceed.

6. (Fill Materials Item 3.3 – Material Specifications) TDC stated that the mine run shell rockfill will have a wide variation in gradation, with a maximum particle size of 1,000 mm. Is there a minimum percent passing of fines that would be unacceptable as shell rockfill for piping or hydraulic considerations?

Based on our knowledge of the on site materials the Mine Run Rockfill is predominately cobble and boulder sizes with varying amounts of gravel and sand. The material is reasonably well graded and not susceptible to piping.

7. (Fill Placement Item 1.4 – General) A record of damage to the embankment during construction should be provided with remedial measures during construction to the Board.

Portions of the embankment that do not meet specifications, as interpreted by the Site Engineer, will be removed and reconstructed. These conditions, should they occur, will be documented with explanation and mitigation undertaken in the construction summary report

8. (Quality Assurance Item 1.2 – General) TDC stated that testing will be carried out by the Geotechnical Engineer or an independent testing firm engaged by the Owner. The Board requests clarification on whether the independent testing firm will require the services of a qualified engineer to complete the testing.

The testing will be carried out by Engineers, Certified Engineering Technicians, or technicians, under the direction of Professional Engineer.

9. (Fill Placement) Placement of dyke materials will partially be completed in open water. The Board requests additional detail and discussion on how monitoring, and frequency of monitoring, of the slopes will be conducted during construction to ensure the design slopes, lines, grades, and elevations for each material type shown on the drawings are achieved. Does TDC intend to include this information in the construction records they are to submit to the NWB as per Part D, Item 19 of water licence 2AM-JER0410 (formerly NWB1JER0410)?

The water depths during construction are anticipated to be shallow (less than 1 m). Surveyors will set grade stakes to guide the material placement and survey the as-built structures. The as-built information will be included in the documents submitted to the NWB.

10. (Quality Assurance) The material contained within this section suggests that a monitoring program will be installed in evaluating the QA. The Board requests a thorough report embodying all elements of this program that evaluate all components after construction. Does TDC intend to include this information in the construction records they are to submit to the NWB as per Part D, Item 19 of water licence 2AM-JER0410 (formerly NWB1JER0410)?

All quality Assurance Testing results will be submitted to the NWB in the construction summary report.

11. (Quality Assurance Item 2.1 – Testing Requirements) TDC stated that the shell, transition, and rip-rap materials will be tested for gradation to meet the specification. The Board requests clarification on the frequency of this measurement. Additionally, within the Fill Placement section of the construction specification, there is reference to compaction of these materials, which is associated with a maximum dry density. The Board requests additional detail on the value of the maximum dry density to be achieved during placement of the shell, transition, filter, and rip-rap materials, as well as, the method and frequency of testing in-situ density. Does TDC intend to include this information in the construction records they are to submit to the NWB as per Part D, Item 19 of water licence 2AMJER0410 (formerly NWB1JER0410)?

The transition and rip rap material shall be tested at a frequency of approximately one sample per 1000 $m^{3.}$ Visual evaluations of the shell material will be made. The information shall be included in the construction summary report.

12. (Quality Assurance Item 2.2 – Testing Requirements) Additional details and discussion is required to clarify the method that will be employed to obtain the moisture-density relationship and in-situ density of the filter material.

The moisture density of the filter material shall be determined according to ASTM D698. The in situ density shall be measured with a nuclear gauge.

13. Within Section 5.0 – Settlement section of the design report, TDC recommended to monitor dyke settlements following construction and when water levels rise. This issue has not been addressed in the construction specifications.

The Board requests additional detail and discussion on where, how, and when settlement monitoring will occur. Since sections of the dyke will be built on permafrost foundations with potential thaw settlements, should temperature monitoring completed?

A total of five settlement points will be placed on the dyke crest. Their elevation will be measured once every month. There is no intention to monitor ground temperatures in the dyke or foundation

14. Within Section 7.2 – Construction Requirements of the design report, TDC stated that filter placement and compaction should take place in above freezing temperatures. This requirement has not been addressed in the construction specifications. The Board requests details of this specification to be included in the construction specification. Additionally, are there any temperature requirements for the placement and compaction of other dyke materials? Does TDC intend to include this information in the construction records they are to submit to the NWB as per Part D, Item 19 of water licence 2AM-JER0410 (formerly NWB1JER0410)?

The fill quality will be monitored with the density testing as a performance based specification as opposed to a method based specification. Fill placement will be allowed under some freezing conditions if it is demonstrated that the fill densities can be achieved.

15. Within Section 8.0 – Long-term Monitoring section of the design report, TDC stated that a program should be developed to "monitor the effectiveness of filters by water quality testing of collected waters in the tailings disposal facility cells". This issue has not been addressed in the construction specifications. The Board request additional detail and discussion on monitoring water quality that is associated with characterizing the effectiveness of the filter. Will this be communicated through the annual geotechnical inspection to be filed with the Board as per Part G, Item 2 (g)?

The water quality of the PKCA is being monitored by Tahera and reported under the surveillance monitoring program. The water quality data collected over the year will be considered in the annual geotechnical inspection.

We trust this addresses the NWB questions and comments. We welcome the opportunity to discuss them further at the scheduled meeting between NWB, EBA and Tahera.

Regards,
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