October 30, 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 East and Southeast Dam Construction Specifications

EBA Engineering Consultants Ltd.'s (EBA's) responses to questions and comments in NWB Letter dated May 11, 2006 regarding the Jericho Diamond Mine East and Southeast Dam Construction Specifications are presented below. The original NWB comments are in italics. EBA's reply follows each comment.

a. Throughout the construction specification document the Proponent has made commitments to have an Engineer on site to judge, evaluate, and approve certain provisions. The engineering body responsible for supervision of each of these commitments should produce construction and engineering records that detail how each of these provisions 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 were carried through:

- *General (Item 3.2)*
- *Foundation Preparation (Items 2.1, 2.2, 3.1, 3.2, 3.6, 4.5, and 5.0)*
- *Fill Materials (Items 2.8, 2.9, and 3.3c)*
- *Fill Placement (Items 1.3, 1.5, 2.1, 2.4, 2.7, 2.9, and 2.10)*
- *Liner System (Items 4.1a, 4.2a, 4.2h, 4.5a, and 4.5b)*
- *Instrumentation (Items 1.2, 1.3, 3.2, and 4.1)*
- *Quality Assurance (Items 2.1c, 3.1f, 3.1g, 3.2a, 3.2b, and 3.5a)*

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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b. The Board requests further discussion and detail outlining Quality Assurance and Quality Control measures and protocol involved in the ***Fill Placement*** *(Items 3.1, 4.1, 5.1, and 6.1) specification.*

Fill Placement - Items 3.1, 4.1 and 5.1 state that the bedding material, 200 mm minus material and run-of-mine material must not be placed in lifts thicker than 0.3 m, 0.5 m and 0.7 m respectively, and the placement method must not result in segregation or nesting of particles. The lift thickness will normally be controlled by visual means. Grade stakes will be used if deemed necessary. A visual inspection of the lift will be used to access obvious signs of particle segregation. Samples of the bedding and transition materials shall be collected for particle size analyses at the engineer's discretion.

*c. (**Specification - General 3.1**) The Proponent should appropriately reference the Sub-Arctic Survey or annex the document.*

The original ground contours shown on the drawings have been provided by Sub-Artic Surveys. The contour shown on the drawings are to be used as the basis for construction.

*d. (**Specification – Water Control 1.2**) The Proponent states that the key trench will be dewatered as required. The Proponent should clearly indicate the location where the water will be moved to (where within the PCKA area?) and how this will be achieved (what methods and practices?) in the construction specification.*

Water from the key trench will be pumped from the key trench to the PKCA area.

*e. (**Specification – Water Control 2.2**) Does the Proponent agree that further detail should be given to the construction contractor to ensure the discharge of water will not cause erosion or the decrease of water quality in the receiving water body? If not, what mechanisms are in place to ensure that this will not occur?*

The specification states that water discharge must not cause erosion. The engineer in charge of quality control will observe water discharge methods to verify that discharge is being done in a manner that will not cause erosion that could decrease water quality of the receiving water body. Higher discharges are normally directed to an area with coarse grained materials. Lower flows can be discharged in vegetated areas. The specification is written as a "performance" specification as opposed to a method specification.

*f. (**Specification – Water Control 3.0**) Does the Proponent agree that further detail should be given into how the construction contractor will ensure that backfill will be protected from erosion during freshet? If not, what mechanisms are in place to ensure that this will not occur?*

The measures to protect the dam backfill during freshet are a function of the dam construction stage when freshet occurs. The specification is written as performance specification as oppose to a method specification. The contractor will be responsible for repairing damage if he does not the meet the requirements of the specification.

*g. (**Specification – Liner System 2.1**) Commercial specifications should be provided with as-built drawings. Any signed manufactured certificates referenced should be annexed and provided with as-built construction and engineering records.*

The liner installers QC report will be included with the submission of construction summary report. It will include the liner specification manufacture certificates.

*h. (**Specification – Liner System 4.5**) A record of all defects noted (date, location, type of defect etc.) in the geomembrane and details on remedial measures implemented should be submitted with as-built construction and engineering records.*

This information shall be included in the liner installers QC report.

*i. (**Specification – Instrumentation 2.0**) All instrumentation specifications should be annexed and provided.*

The ground temperature cables shall consist of a 20 conductor water block cable with a urethane jacket. The thermistor beads within the ground temperature cable shall be Fenwall 44007. The thermistors shall be at 1.5 m spacing within the base of the key trench. The ground temperature cables shall be terminated with an amphenol connector. The connector shall be installed in a protective steel casing.

The settlement monitoring points shall consist of steel rod welded to a plate similar to shown in the Jericho West Dam Drawing WD-8. The plate shall be set approximately 0.2 m above the liner crest. A minimum of three settlement points shall be installed at each of the East and Southeast Dams.

*j. (**Specification – Quality Assurance**) The material contained within this section of the report suggests that a monitoring program will be installed to evaluate Quality Assurance. A thorough report embodying all elements of this program should be submitted evaluating all components after construction. The Board requests this material with the final as-built construction and engineering records.*

The construction summary report will be provided to the NWB. The report will contain quality assurance test results and a summary of the construction.

*k. The Board requests a full detailed response and revisions (where applicable) to all seven (7) bullets listed under the Construction Specifications Heading (**Page 5**) of INAC's November 14th, 2005 Intervention.*

1. The 2005 Intervention queried the possibility of ARD generating materials in the dam construction materials. Construction materials are derived from the open pit mining operations. The waste rock is regularly sampled and results of these tests are sent to the NWB as part of the Waste Rock Management Plan. Tahera has reported that to date there is no indication of acid generating material.
2. The 2005 Intervention requested that a statement be added to the specification requiring that all construction materials be free of roots, topsoil and deleterious materials. This is standard practice for earthworks construction of the type being carried out. EBA quality control personnel are familiar with this standard practice.

3. The 2005 Intervention is requesting additional information regarding the processing and placement of the till in the main dam. Till will be placed in the upstream portion of the dam. A portion of the till comes from the key trench excavation from the East and Southeast Dams. This material is predominately from the active layer; therefore, it contains little or no excess ice content. The remainder of the till will come from the till from the open pit operation. The till is variable in the open pit operation; however, observations to date indicate that the majority of the till has little excess ice. The till is generally well graded with varying proportions of boulders, cobbles gravel and sand. Much of the till on site has between 5 to 10% fines, whereas some of the tills from the pit have 15 to 20% fines. The material will be placed as specified in 0.3 m lifts or less. Care must be taken in the winter months to break up the frozen chunks and compact the material. Winter placed material may settle if it thaws. The settlement of the material is not anticipated to effect dam performance, and will not affect the dam freeboard. Settled areas will be topped up with additional till or coarse processed material.

4. The 2005 Intervention is requesting additional information about the design intent of the dam in regards to whether it is a frozen core dam. This question was addressed in EBA's letter of January 26 to Tahera. The primary water retaining element of the dam is geomembrane liner. The liner is keyed into frozen ground. The construction specifications specify how the fill below the liner is to be placed such that it is a nearly ice saturated material.

5. The 2005 Intervention is requesting additional information about the how the liner integrity will be verified after placement of the fill. The liner is protected by thick (540 g/m^2) non-woven geotextile. The liner integrity will be visual examined as fill is placed and quality assurance testing carried out. Personnel will observe the fill placement nearby to the liner. Equipment operators will be instructed to report any possible liner damage. The contractor is working on a time and materials basis and therefore has no motive to hide liner damage.

6. The 2005 Intervention is requesting a typographic error in the specification to be corrected to specify that the bedding material be placed in lifts no thicker than 0.3 m. Our site staff were made aware of this error

7. The 2005 Intervention is requesting additional information about how geomembrane liner integrity will be tested after fill is placed on the geomembrane. As discussed above, fill placement will be observed as the liner is covered. The dam will be inspected for seepage during the annual geotechnical inspections, as well as by the mine operations personnel on an ongoing basis.

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

Regards,
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