

نے کا ۱۹۹۶ Qikiqtaaluk

Dr, NOSZB Arctic Bay SPPSPC5495P Qikiqtarjuaq P<sup>∞</sup>U∆<sup>c</sup> Cape Dorset ᠙᠘ᠨᢗᢦ᠈᠘ᡀ Clyde River 45C2QYQD Grise Fiord <del>ኒ</del> ታሪያት Hall Beach D-5-Igloolik محده ک Iqaluit **PLTP**c Kimmirut (°595)96 Pangnirtung Lcurc-Pond Inlet PDYQC28P

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Resolute Bay

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## °P∩°T⊅° Kitikmeot

November 21, 2005

George Hakongak Nunavut Tunngavik Inc. Cambridge Bay, NU

Thank you for the opportunity to review the submission from EBA Consultants Ltd. entitled "Jericho Project East Dam and Southeast Dam Design Drawings", submitted by Tahera Diamond Corporation on August 30, 2005 to the Nunavut Water Board as a requirement of their water license. NTI retained the services of a consultant to review the submission and the following is the outcome of the review.

The purpose of the submission was to provide design information for the proposed east and southeast dams of the "Processed Kimberlite Containment Area (PKCA)", a component of the Jericho mine operations. The report and supporting documents submitted to the Nunavut Water Board present the geotechnical and structural design details of the dams.

- The dams were designed with the intent to retain fine particulate, to pond water during seasonal high runoff periods and to remain physically stable throughout the life of the mine. The retention of fine particulate, with the intent to protect aquatic resources, is generally the most significant water quality issue associated with an operating diamond mine. When compared with ferrous metal mines, where acid rock drainage, metals leaching and process chemicals are often a problem with tailings containment, diamond mining is relatively low impact. The proponent has indicated their commitment to particle retention.
- The dams were designed in accordance with Canadian Dam Association Guidelines therefore one can expect the design to meet or exceed minimum standards. Worst-case scenarios (i.e. catastrophic failure) were modeled and figured into the design.
- Similar dams of this design (ie. Frozen core) have been successful at other mining operations in the arctic (eg. Ekati). This design is common, however it is imperative that the work be undertaken by contractors with experience working with the material in Arctic conditions and that the on-site geotechnical engineers have extensive experience overseeing this type of dam construction.
- Monitoring the dams is essential to establish the long-term effectiveness of the design. Monitoring would likely include aquatic effects to ascertain particle retention capability, thermal monitoring to calculate rate of core freeze-back and visual monitoring as well as surveying to assess settling.



## نې ۱۹۶۰ Qikiqtaaluk

SPS-PC-4Q-P Arctic Bay

Qikiqtarjuaq P∾l∆<sup>c</sup>

Cape Dorset

Clyde River ⟨D⟩⟨∆°⊃°ь

Grise Fiord

Hall Beach

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Depour

Iqaluit

brL5c

Kimmirut 〈ᠳ⁵⁵ᠫ⁵⁵

Pangnirtung Γ<sup>c</sup>ΩLC<sub>C</sub><sup>b</sup>

Pond Inlet

%δ∂/Δ°Ͻ% Resolute Bay

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Sanikiluaq

## Pペとい Kivalliq

9.8VQc

Arviat %L&CDQSb

Baker Lake

12-678

Chesterfield Inlet

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Coral Harbour

Rankin Inlet

ملاله

Repulse Bay

NPS'KO'S Whale Cove

## 'PN'TD' Kitikmeot

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Cambridge Bay

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Gjoa Haven

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