

**BREAKWATER RESOURCES LIMITED**

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November 7, 2002

Mr. Philippe diPizzo  
Executive Director  
Nunavut Water Board  
P.O. Box 119  
Gjoa Haven, NU X0E-1J0

Dear Mr. diPizzo:

**Re: Water License No: NWB1NAN0208 - Nanisivik Mine**

Acting on behalf of CanZinco Ltd., a wholly owned subsidiary of Breakwater Resources Ltd., I am in receipt of the above captioned Water License issued October 10, 2002 and the subsequent supporting documentation dated October 23, 2002 (*Nunavut Water Board - Reasons For Decision for License Application for the Closure and Reclamation of the Nanisivik Mine filed by CanZinco Ltd.*).

As you are aware Part G, Item 2 of the License requires a submission within 30 days of issuance, providing a "*detailed timetable for the submission of plans, appendices, studies, and/or reports referred to in this Licence*". On reviewing the License however, we have identified several issues we would like to discuss prior to making a detailed submission, and that is the purpose of this letter.

We would first like to take this opportunity to reiterate our suggestion that the NWB reconsider its former practice of circulating a draft license for comment prior to issuing the "final" (as was practiced with the 1997 issuance). In this way, any changes to the License (which can be expected considering the License has 415 separate conditions) may be incorporated without the additional "process of amendment". We have also participated in similar permitting processes in other jurisdictions (i.e. NWT, Quebec and New Brunswick) where draft circulation is practiced, and we believe this makes the process more efficient for all parties.

As prefaced above, the specific items we would like to discuss follow. They are referenced in italics and are presented in the order in which they appear in the License.

- ❑ **Part D, Item 12(vi).** *The Licensee shall operate and maintain the West Twin Disposal Area such that Inspections of the West Twin Disposal Area and tailings lines are carried out weekly and records kept of these inspections for review upon the request of an Inspector.*

We would request that you consider modifying this to reflect similar conditions to Part 11, Item 1 [East Adit] in which weekly inspections must be carried out "*during periods of open water*". Moreover, since deposition activity has been terminated at the WTDA and the "*tailings lines*" are no longer in use. Weekly inspections during the ice cover period are believed to be an unnecessarily

onerous task for the work force assigned to winter care and maintenance at Nanisivik.

- **Part E, Item 1.** *The Licensee shall submit to the Board for approval within thirty (30) days of issuance of this Licence, a revised **Emergency Response Plan**. This plan shall be prepared in accordance with the Nunavut Water Board's, "Guidelines for Contingency Planning" (1987) and shall also include the standard operating procedures for the decontamination and disposal of fuel containment infrastructure and equipment [emphasis added].*

We would suggest that the underlined portion of the above clause be removed and included among the conditions of Part G, Item 16 [Underground Mine Solid Waste Disposal Plan]. Given that the site disposal location for any equipment or infrastructure will be underground and that Part G, Item 16 already contains clauses requiring the development of "standard operating procedures for the decontamination and disposal of equipment", this would seem more efficient.

- **Part E, Item 2.** *A back-up pump system (stand-by power) and/or other contingency measures shall be maintained at the East Adit Treatment Facility to prevent the release of untreated Effluent to the environment.*

As per our Reclamation Plan, the East Adit Treatment Facility will be dismantled when water treatment is no longer required. This would include all associated infrastructure and equipment. We suggest you consider prefacing this condition with the following wording. "While water treatment continues at the EATF .....".

- **Part F, Item 4.** *The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.*

The current wording here would require us to provide stamped engineered drawings for all reclamation activities related to the "Water Supply Facilities and Waste Disposal Facilities". Clearly activities such as pipe retrieval, valve shack removal, electrical services removal, etc. would not require this level of documentation. Please consider rewording this to read, "The Board may at their discretion request the submission of as-built plans and drawings of the Modifications referred to ....." . Considering that 60-day advance notice is currently required of the Licensee prior to any Modifications (Part 2, Item 2(i)) sufficient control in this regard is maintained by the Board.

- **Part G, Item 4.** *The Licensee shall submit to the Board for approval a report assessing the proposed covers which shall include but not be limited to:*

- iv. *An assessment of cover performance under 1000 year return period (warm year) and global warming scenarios*

We are requesting rationale for 1000 year return period modeling. We have completed 100 year modeling as presented at both the July 22, 2002 Public Hearing and at the technical meeting which occurred in Calgary on August 20, 2002. The Board's technical advisors attended both of these sessions and at no time was this new parameter raised in the presentations or discussions. Further, all technical advisors at the Calgary meeting agreed upon the parameters for climate modeling and a copy of this (signed by the Board's advisors) was forwarded to the Board.

- **Part G, Item 4.** *The Licensee shall submit to the Board for approval a report assessing the proposed covers which shall include but not be limited to:*

- vi. *The bathymetry of the sub-aqueous tailings in West Twin Lake Reservoir which shows the extent of tailings located within 1.0 m of the water surface, and plans for mitigation of wave action on these tailings;*
- ix. *An evaluation of alternatives for increasing minimum water depth in the Reservoir with emphasis on possible effects of waves and winter ice cover on long term water quality; and*
- x. *An assessment of cover thickness with reference to cover result available for Area 14 as a case study.*

Part G, Item 4 of the License deals primarily with the design of closure covers. For clarity we would suggest that conditions (vi) and (ix) be removed from this Item and included with the requirements for the WTDA Closure Plan (Part G, Item 15). In this way, both reports will be more specific.

In addition, we request that Item 4(x) be removed from the License. You can rest assured that if the Area 14 data, or any other data, is appropriate for closure cover modeling, it will be included in our determinations. While the Board may request to see the Area 14 data, it must remain at our discretion to select which reference material best suits our evaluations.

□ **Part G, Item 5.** *The Licensee shall submit to the Board for approval a report assessing the postulated Talik in the surface tailings cell and the test cell which shall include but not be limited to:*

- i. *The results of drilling and other investigations to characterize the extent of the Talik;*
- ii. *Thermal conditions and soil properties within the Talik;*
- iii. *Identification of the potential for and extent of frost heave, pore water expulsion (volume, rate and water quality) and Pingo formation, and measures to mitigate the effects of any of these processes should they be expected to occur; and*
- iv. *Water sampling requirements in conjunction with a water quality predictive model.*

We would suggest that these conditions be included in the WTDA Closure Plan report (Part G, Item 15). While we support the idea of having separate and specific “stand-alone” reports, we believe the number of reports which will make up the final Closure and Reclamation Plan should be limited. Under the current conditions of the License, there is a requirement for 12 separate stand-alone reports which will be part of the C&R Plan. The changes proposed in this letter are meant to reduce the number of separate reports, without reducing the required information, by combining similar studies. Additional suggestions to achieve this follow throughout the letter.

- **Part G, Item 6.** *The Licensee shall submit to the Board for approval a report on the proposed spillway which shall include but not be limited to:*

- i. *Overview of alternative spillway designs and justification for the preferred alternative;*
- ii. *Design hydrology;*
- iii. *Spillway geometry, with emphasis on the geometry where the spillway meets the covered tailings;*
- iv. *Geology along the centre line of the spillway;*
- v. *Erosion protection measures;*
- vi. *A discussion on the effects of permafrost formation in shallow regions of the reservoir portion, and of the effects of the entrainment of tailings within surface ice formation on the re-suspension of tailings and how these mechanisms will affect long term Water quality; and*
- vii. *A discussion of how pore water expulsion from the freezing surface cell may affect the long-term Water quality of the reservoir portion of the West Twin Disposal Area.*

For reasons stated above we would suggest the information required at Item be included as part of the WTDA Closure Plan (*Part G, Item 15*). We further suggest that as several of the individual License Items are amalgamated, it will become apparent that there are several overlapping/duplicate requests for information which can be edited (e.g. *Part G, Items 4vi, 4ix, 5iii, 7vi, 7vii*, address similar water cover issues and could be reduced to one or two individual line items).

- **Part H: CONDITIONS APPLYING TO THE MONITORING PROGRAM**

We recognize that the Board has included the federal monitoring requirements as defined in the new *Metal Mining Effluent Regulations* and acknowledge that this effort at harmony with the Territorial regulations is meant to assist us. We should point out however, that we have had some discussions with both the MMER Regional Compliance Promotion Officer as well as the Senior Environmental Effects Monitoring Coordinator regarding the application of specific requirements at our site. These discussions are expected to be finalized during a site visit scheduled by representatives of Environment Canada in the Spring of 2003. It is therefore possible that some of the items included in the License which relate to the MMER may require amendment to remain consistent with the federal determinations.

- **Part H, Item 2.** *All analyses shall be performed in a laboratory approved by the Analyst.*

Please identify the Analyst, so that we may obtain the approval procedure and criteria.

- **Part H, Item 44.** *The Licensee shall within six (6) months of written notification as referred to in Part H, Item 1 submit to the Board for approval the Biological Monitoring studies as required by Part 2 of Schedule 5 of the Metal Mining Effluent Regulations.*

There is no reference in *Part H, Item 1* of “written notifications”. We assume that this should read *Part G, Item 1*. Please clarify.

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Upon receiving your response on the above items, we will finalize a detailed timetable as requested and submit this for your approval. Should you wish to discuss this further or have any questions regarding any of the above comments, please contact me directly at (506) 546-1999 (ext 2263).

Yours sincerely,

**Breakwater Resources Ltd.**

Robert Carreau  
Manager, Environmental Affairs

c.c. Mr. B. Heath, Vice-President, CanZinco Ltd.  
Mr. S. Keenan, Environmental Superintendent, Nanisivik Mine