



P.O. Box 119
Gjoa Haven, NU X0B 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI

File No. NWB1NAN0208/Part G, Items 3-17

July 6, 2004

By Email and Regular Mail

To: Mr. Robert Carreau
Corporate Manager, Environmental Affairs
Breakwater Resources Limited
Suite 950, 95 Wellington Street West
Toronto, ON. M5J 2N7

Cc'd: Nanisivik Distribution List

Subject: Nunavut Water Board's *Letter of Approval* for Terms and Conditions Applying to the Nanisivik Mine 2004 Reclamation Plan and Closure Plan

Dear Mr. Carreau,

The Nunavut Water Board ("NWB") met in Iqaluit on July 1st, 2004 to discuss approval of CanZinco Limited's (the "Licensee") *Nanisivik Mine 2004 Reclamation Plan and Closure Plan* (the "Reclamation and Closure Plan"), as well as all other supplemental reports required under Part G of Water Licence NWB1NAN0208 (the "Licence").

The NWB, based on its review of the aforementioned documents, in addition to evidence presented by the Licensee and interveners at the public hearing held in Arctic Bay on June 3rd and 4th, 2004, has decided to approve the Reclamation and Closure Plan and its appendices as required under Part G, Items 3 to 9. Likewise, the NWB has decided to approve the Phase III Environmental Site Assessment Report (Part G, Item 13), the West Twin Disposal Area Closure Plan (Part G, Item 15), the Waste Disposal Plan (Part G, Item 16), and the Landfill Closure Plan (Part G, Item 17). The Licensee, however, is obliged to fulfill the terms and conditions hereby set by the NWB, which follow below. The NWB has also drafted a *Reasons for Decision* to help explain the direction that it has taken, as well as any legal ramifications as a result of these decisions. The *Reasons for Decision* are attached to this *Letter of Approval*.

As indicated in the *Reasons for Decision*, the NWB is of the opinion that this *Letter of Approval* does not require the approval of the Minister of Indian and Northern Development as per s. 56(1) of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*. However, **we are copying this *Letter of Approval* and *Reasons for Decision* to the Minister for his consideration and whatever action he may deem appropriate in the circumstances.**

Terms and Conditions:

1. The Licensee shall, as is practicably feasible, adhere to the detailed mine reclamation scheduled entitled, *Nanisivik Mine - Conceptual Integrated Mine Reclamation Schedule*, as provided in Public Hearing Exhibits # 1 & 2.
2. The Licensee shall, during the Reclamation Period, provide the NWB for its review, Quarterly Reclamation Reports ("Quarterly Reports"), which are to be submitted not later than 45 days after the end of the quarter (i.e., February 14, May 14, August 14, and November 14). However, to minimize the overlap in reporting requirements, the February 14 Quarterly Report is to be eliminated and its contents instead published as part of the Annual Report, due March 31 of each year, as required under Part B, Item 6 of the Licence. The quarterly reports shall include, but not be limited to: a summary of remediation work completed to date; expenditures to date; documentation regarding waste disposal, including volumes and final location; and a revised implementation schedule, as referred to in Item 2 of this *Letter of Approval*. It is recommended that the Licensee should submit, with the Quarterly Reports, the effluent monitoring requirements as noted in Part H, Item 30 of the Licence.
3. The Licensee shall implement the approved "*Nanisivik Mine 2004 Reclamation and Closure Plan*" (Part G, Item 3 of the Licence) in accordance with the following terms and conditions:

Regulated Materials

- i. The Licensee shall ensure that all PCBs, including those possibly contained in light ballasts, are removed from the mine site for disposal at a licensed facility.
- ii. The Licensee shall ensure that all active transformers removed from the site are sent for disposal at a licensed facility.
- iii. The Licensee shall report to the NWB, in the most appropriate Quarterly Report, the following items: Confirmation of the continuing use of the underground transformer; confirmation of the removal of the underground transformer at an appropriate time to make soil testing accessible; and confirmation to ensure that the transformer is not blocked by any materials which have been placed underground.
- iv. The Licensee shall sample and analyze buildings at Nanisivik for the presence of paints or protective oils containing PCBs. The results of the testing shall be presented as an addendum to the most appropriate Quarterly Report. In the event that PCB contamination is detected, the Licensee shall submit for NWB approval, as part of this addendum, a contingency plan for the disposal of the material.

Roads and Quarries

- v. The Licensee shall ensure that all roads to be reclaimed are re-contoured, have their culverts removed and are restored to stable conditions using pre-existing natural drainage patterns wherever possible.
- vi. The Licensee shall ensure that all reclamation activities associated with the restoration of roads and the construction of low level water crossings include mitigation efforts to prevent the entry of deleterious substances, including sediment, into adjacent water bodies.
- vii. The Licensee shall submit for review to the NWB, as an addendum to the November 14 Quarterly Report, a map showing the existing road system for the Nanisivik Mine impact area that indicates road sampling locations, locations to remain open, locations to be reclaimed and ownership of current and remaining road network.

East Adit

- viii. The Licensee shall, prior to the final decommissioning of the East Adit Treatment Facility, submit to the NWB an assessment of historical water quality in this area, as well as follow-up sampling and water quality data confirming that the treatment facility is no longer required.
- ix. The Licensee shall ensure that sludge contained in the East Adit Treatment ponds is excavated and disposed of in the underground mine workings along with any associated infrastructure.
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- x. The Licensee shall submit a plan for NWB approval, prior to the completion of the Reclamation Period, detailing the proposed method to reclaim the facility during the Closure Period, should the facility be required past the Reclamation Period.

Monitoring

- xi. The Licensee shall submit, as an addendum to the November 14, 2004 Quarterly Report, a revised version of the Closure and Reclamation Plan's Table 8 - *Water Quality Monitoring-Reclamation Period*, which incorporates changes to the monitoring plan.
 - xii. The Licensee shall, over the course of the Reclamation and Closure Periods, submit a revised version of Table 8 in the Reclamation and Closure Plan when changes to the monitoring plan have occurred.
- 4. The Licensee shall implement the approved *Engineering Design of Surface Reclamation Covers* report (Part G, Item 4 of the Licence) in accordance with the following additional terms and conditions:
 - i. The Licensee shall submit to the NWB for approval in the November 14, 2004 Quarterly Report, a report on the condition of the concrete foundations at the Concentrate Storage Shed area and the Industrial Complex area. The report should include, but not be limited to a photographic record, and a description of the extent, timing and method of inspection. Should underlying contamination be identified or suspected, the Licensee shall conduct soil sampling to identify the nature and scope of the contamination and present the findings in the report. In the event that metal contamination is above the established SQROs, or significant hydrocarbon contamination is discovered, then the report shall present contingency options for reclamation.
 - ii. The Licensee shall submit for NWB review in the November 14, 2004 Quarterly Report, Quality Assurance/Quality Control measures for covers construction during reclamation.
 - 5. The Licensee shall implement the approved *Assessment of Surface Cell and Test Cell Taliks* report (Part G, Item 5 of the Licence).
 - 6. The Licensee shall implement the approved *Quarry Development and Reclamation Plan* report (Part G, Item 6 of the Licence) in accordance with the following terms and conditions:
 - i. A 50 metre buffer should be maintained between the quarries and all adjacent water bodies as is practically feasible.
 - ii. All quarrying activities must include mitigation efforts to prevent the entry of deleterious substances, including sediment, into adjacent water bodies.
 - 7. The Licensee shall implement the approved *Detailed Design of the West Twin Dyke Spillway* report (Part G, Item 7 of the Licence).
 - 8. The Licensee shall implement the approved *Rock Piles and Open Pits Closure Plan* report (Part G, Item 8 of the Licence) in accordance with the following terms and conditions:

- i. The Licensee shall submit to the NWB for approval by October 31st, 2004, the geochemical inspection report and reclamation plans for the West Open Pit and West Open Pit access road.
 - ii. The Licensee shall ensure that all activities associated with the reclamation of rock piles and open pits will include mitigation efforts to prevent the entry of deleterious substances, including sediment, into adjacent water bodies.
 - iii. The Licensee shall ensure that monitoring of the physical stability along the restoration areas adjacent to Twin Lakes Creek is conducted with sufficient time left in the year to allow mobilization of equipment to correct any deficiencies.
 - iv. The Licensee shall, in the event that it is necessary to remediate the remaining waste rock present in or very near to Twin Lakes Creek, as identified by the inspector, submit for NWB approval, a plan to address this area of concern as required under Part F, Item 2 of the Licence.
9. The Licensee shall implement the approved *Closure Monitoring Plan* report (Part G, Item 9 of the Licence) in accordance with the following terms and conditions:
- i. The Licensee shall monitor BTEX, F1 and F4 hydrocarbon parameters bi-weekly at the Landfill monitoring stations NML-26, NML-29 and NML 30 during the Reclamation Period. The results of these samples, as well as all other water sampling shall be reported in the Quarterly Reports as required in Item 2 of this *Letter of Approval*.
 - ii. The Licensee shall monitor water quality at Kuhulu Lake inlet and outlet for total metals, sulphate, pH, temperature, conductivity and total suspended solids during the Reclamation Period and Closure Period. The monitoring frequency and parameters tested are to be equivalent to those established for the Chris Creek Watershed in the *Closure Monitoring Plan*.
 - iii. The Licensee shall, when requested by the inspector and/or the NWB, be prepared to increase the frequency of monitoring.
 - iv. The Licensee shall submit to the NWB for approval by October 31st, 2004, an instrument installation and contingency plan which includes, but is not limited to a discussion on the following issues: Installation; equipment availability; damage/malfunction of instrumentation; plans for replacement and consideration for duplicate instrumentation at critical locations.
10. The Licensee shall implement the approved *2003 Phase III Environmental Site Assessment* report (Part G, Item 13 of the Licence) in accordance with the following terms and conditions:
- i. The Licensee shall submit to the NWB for approval, as an addendum to the November 14, 2004 Quarterly Report, a report on the sampling and assessment of PCB contamination of soil beneath or surrounding the PCB storage facility, including the slab. The report shall include sampling results and contingency measure for soil disposal, if determined to be necessary.
 - ii. The Licensee shall submit to the NWB, as an addendum to the applicable Annual Report, the results of soil sampling under the lay-down area where PCB transformers will be stored before their transfer to the West Kitikmeot region. Should any contamination be noted, a contingency plan for the excavation and removal of contaminated soil will be required for NWB approval.
 - iii. The Licensee shall submit for NWB approval, as an addendum to the November 14, 2004 Quarterly Report, a report on the sampling and assessment of contaminated soil at the ANFO plant. The report shall include sampling results for the presence of nitrogen, nitrate and nitrite in soil and it shall present contingency measures for soil reclamation if substantial contamination is discovered.
 - iv. The Licensee shall submit for NWB review in the applicable Quarterly Reports, Confirmatory Soil Sampling Reports. The reports shall include information regarding the final concentrations

of soil contaminants in the areas in question, the volume of soil excavated, the final location of excavated soil and the measures undertaken to re-contour the excavation sites.

11. The Licensee shall implement the *Human Health and Ecological Risk Assessment* report (Part G, Item 14 of the Licence), approved on November 21, 2003.
12. The Licensee shall implement the approved *West Twin Disposal Area Closure Plan* report (Part G15 of the Licence).
13. The Licensee shall implement the approved *Waste Disposal Plan* report (Part G, Item 16 of the Licence) in accordance with the following terms and conditions:
 - i. The NWB will not entertain any proposals for underground waste disposal following sealing of the mine portals.
 - ii. The Licensee shall submit for NWB review, by September 30th, 2004, a report addressing the issue of mine stability, which shall include a professional opinion on the future risk to the mine's stability by a Engineer, as well as a validation of the Natural Resources Canada –CANMET analysis entitled, *Long-Term Stability Considerations and Engineering Applications for a Decommissioning Mine in Permafrost*, 2003.
 - iii. The Licensee shall submit for NWB review, by November 30th, 2004, detailed engineering designs, stamped by an Engineer, for the closure of mine portals, ventilation raises and all other mine openings to the surface.
 - iv. The Licensee shall, during the Reclamation Period, submit in the Quarterly Reports, updates on the disposal activity in both open pits and the underground mine workings. The update shall include documentation detailing type and volume of waste stored, its final location, as well as photographic record of the activities.
14. The Licensee shall implement the approved *Landfill Closure Plan* (Part G17 of the Licence) in accordance with the following terms and conditions:
 - i. The Licensee shall, in accordance with Item 9(i) of this *Letter of Approval*, undertake BTEX, F1 and F4 hydrocarbon monitoring at the landfill area.
 - ii. The Licensee shall modify and implement the landfill closure design in order that the top of the thermal barrier cover meets with the top of the seepage collector berm to prevent the accumulation of water and snow in the upstream side of the dike, or as otherwise approved by the NWB.

General Conditions:

15. All terms and conditions of Licence NWB1NAN0208 remain applicable. Where there is a conflict between terms and conditions of the original licence and those presented in this *Letter of Approval*, the terms and conditions of the *Letter of Approval* shall prevail.
16. The Licensee is reminded that reclamation and monitoring work which deviates substantially from the approved Reclamation and Closure Plan is considered a modification or amendment of the water licence, and as such, such work requires approval by the NWB as per Part F, Item 2 of the Licence. Changes to the Reclamation and Closure Plan requiring a licence modification or amendment shall be submitted to the NWB for approval at least 60 days prior to the implementation of the proposed changes.

17. The Licensee shall annually update its Emergency Response Plan in accordance with Part E, Items 3 and 4 of the Licence. The annual revisions of the Emergency Response Plan referred to in Part E, Item 3 shall be submitted to the NWB, as an addendum to the original plan, in the Annual Report.
18. In addition to the requirements outlined in Part H, item 6, of the Licence, the Licensee shall include inspection all portals, adits, mine openings, ventilation shafts associated with the mine and an examination of the area around the Industrial Complex ice lens.
19. If the reassignment of any materials, facilities or infrastructure creates a situation in which an associated Water Licence requirement emerges (water use or waste disposal), the Licensee shall file an application for assignment and NWB approval at least 60 days prior to the transfer for this new undertaking.

For the purpose of this approval and to provide clarification the following definitions are provided:

"Reclamation Period" means the period of active physical reclamation of the mine site, where the completion of the major activities, proposed in the Mine Closure Plan, are undertaken.

"Closure Period" means the period immediately following the Reclamation Period where maintenance and monitoring is to be undertaken.

"ANFO" means a combination of ammonium nitrate and fuel oil which is used as an explosive in mining applications.

"BTEX" means benzene, toluene, ethylbenzene, and xylenes. They are volatile monoaromatic hydrocarbons which are commonly found together in crude petroleum and petroleum products such as gasoline.

"PCB" means polychlorinated biphenyls which is a group of persistent organic pollutants used in a number of industrial and commercial applications.

Should you have any question regarding this *Letter of Approval* or the attached *Reasons for Decision*, please contact me at your convenience.

Yours truly,
(Original signed by)

Philippe di Pizzo
Executive Director

Attachment (1): *Reasons for Decision July 1, 2004*