Nunavut District Office
P.O. Box 100
Iqaluit, NU
X0A 0H0

Tel.: (867) 975-4298
Fax.:(867) 979-6445

February 18, 2002 **NWB1NAN0208**

Bill Heath
General Manager
Nanisivik Mine, CanZinco Ltd.
P.O. Box 225
Nanisivik, NU X0A 0X0

RE: October 4, 2002 Industrial Water Use Inspection - Report

The Water Resources Officer (WRO), appreciates the assistance provided by Steven Keenan during the tour of the Nanisivik's water use and waste disposal facilities. Enclosed for your records is a copy of the Industrial Water Use Inspection Report**,** performed on October 4, 2002. During the inspection the following observations were noted.

- **East Twin Lake:** The Water Intake Facility on East Twin Lake was clean and in operation at the time of inspection. Water measurement instrumentation was in operation. Chlorination of potable water is performed at the Water Storage Tank and Treatment Facility. Samples of potable water were obtained from East Twin Lake within 10 meters of the Water Intake Facility. Enclosed analysis of samples taken from East Twin Lake adjacent to the Water Intake Facility indicate that Total Dissolve Solids (7 mg/L vs 500 mg/L), pH (7.12 vs 6.5 -8.5), Ammonia (0.005 mg/L vs 2.3 mg/L), Turbidity (4.8 NTU vs 5 NTU) and Sulphate (20 mg/L vs 500 mg/L) are within the *Guidelines for Canadian Drinking Water* Quality.

- **West Twin Disposal Area Decant Structure:** Decanting had ceased at the West Twin Lake Decant (Photo 6). West Twin Lake was sampled five meters from the decant structure (Photo 4). Enclosed analysis of decant effluent taken at (SNP) 159-4 indicate that Total Suspended Solids (12 mg/L vs 30 mg/L), pH (7.05 vs 6 - 9.5), Zinc (0.03mg/L vs 0.50 mg/L), Cadmium (<.0003 mg/L vs 0.01 mg/L), Copper (0.005 mg/L vs 0.2 mg/L) Lead (0.006 mg/L vs 0.2 mg/L) are in compliance with *Water Licence Discharge Criteria.*

☐ **Twin Lakes Creek**: The flow at Twin Lake Creek was minimal at the time of inspection however sseepage was observed emitting from the east slope of the creek. Enclosed analysis of Twin Lake Creek taken at (SNP) 159-11 indicate that pH (6.46 vs 6.5 - 9.0), Cadmium (<.003 mg/L vs 0.01 mg/L), Copper (.006 mg/L vs 0.2 mg/L), Lead (.003 mg/L vs .2mg/L) Zinc (1.79 mg/L vs 0.5 mg/L) are within the Water Licence discharge Maximum Allowable Concentration however Total Suspended Solids (23 mg/L vs 30 mg/L) exceed Water Licence discharge criteria. Excessive staining of the creek bead was observed at the sampling location. Enclosed analysis of creek effluent taken at (SNP) 159-10 indicate that pH (6.62 vs 6.5 - 9.5), Cadmium (.0055 mg/L vs 0.01 mg/L), Copper (.0075 mg/L vs 0.2 mg/L), Lead (.0065 mg/L vs 0.2mg/L) and Oil and Grease (28.2 mg./L vs 30 mg/L) are in compliance with *Water Licence Discharge Criteria* however Total Suspended Solids (60 mg/L vs 30 mg/L) are not in compliance with *Water Licence Discharge Maximum Allowable Concentrations*.

☐ **Tank Farm**: Follow up inspection of the area surrounding the tank farm pump house revealed that no cleanup of the site had been initiated. There was no signs of the implementation of a maintenance program that would reduce or eliminate the conditions responsible for the cause of the fuel oil spill. The four full drums under the tank farm pump house had not been replaced, further fuel contamination was noted. When requests were made to gain access to the pump house to determine the cause of the leak, the response by Steven Keenan was that no keys were currently available to gain access to the pump house. No spill equipment or spill pads were observed in the waste oil storage area. There had been no attempt to remove the contaminated soil or remove the full drums of fuel oil and replace them with empty drums. The WRO instructed Steven Keenan to provide a spill report, address the cause of the spill and remediate the spill site.

☐ **Chemical Storage Area**: The follow up inspection of the lay down (chemical storage) area adjacent to the tank farm revealed the area had yet to be attended to in that no cleanup of spilled production chemicals had taken place, and that no relocation of production chemicals to further than 10 meters from the high water mark was undertaken. The extensive staining and residue associated with production chemical (Copper Sulphate) remained at the lay down area and the flow path to the tidal pool was visible. Currently storage of copper sulphate is within 10 meters of the high water mark. The Strathcona Sound tidal pool located within 10 meters of the chemical storage area exhibited signs of Copper Sulphate staining. The WRO instructed Steven Keenan to provide a spill report, remove any contaminated soil and to relocate the Copper Sulphate to at least 30 meters from the high water mark.

☐ **Non-Compliance of Act or Licence**: . Failure to provide spill reports for unauthorized discharge of Ocean View wastewater to mine underground workings, failure to provide spill reports for chemical spill at lay down area, spill report for fuel oil spill at tank farm pump house and no spill report provided for wind blown tailings on May 2002. Security bond (Part B section 2) $12.6 million outstanding due on December 10, 2002.

If there are any concerns or questions in regards to this inspection please contact me at (867) 975 4298 or bodykevichc@inac.gc.ca

Sincerely,

Constantine Bodykevich
Water Resources Officer (WRO)
INAC, Nunavut District

cc. -Nunavut Water Board, Gjoa Haven (Jim Wall)
-CG&T, Iqaluit (Doug Sitland)
-Baffin Health & Social Services, Iqaluit (Shannon Mackie)
- EC Environmental Protection, Yellowknife (Anne Wilson)
- INAC Water Management, Iqaluit (Michael Roy)