



Water Resources Division  
Nunavut Regional Office  
Iqaluit, NU  
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NWB File: 1AR-NAN1419  
CIDMS #: 1265790

November 1, 2019

Richard Dwyer  
Manager of Licensing, NWB  
P.O. Box 119  
Gjoa Haven, NU  
X0B 1J0

**Re: 1AR-NAN1419 – Crown-Indigenous Relations and Northern Affairs Canada  
Updated Security Estimate for Water Licence Renewal/Amendment Process  
- Nanisivik Mine Property – Canzinc Ltd. - Nyrstar Canada (Holdings) Ltd.**

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Dear Mr. Dwyer,

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) has conducted an updated security estimate of the renewal application for water licence 1AR-NAN1419 and a memorandum is provided for the Nunavut Water Board's (NWB) consideration. Comments have been provided pursuant to the CIRNAC mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*.

Please do not hesitate to contact me by telephone at 867-222-9278 or email at [ian.parsons@canada.ca](mailto:ian.parsons@canada.ca) for further comments or any questions.

Sincerely,

*Original signed by*

Ian Parsons  
Regional Coordinator



## **Technical Review Memorandum**

**Re: 1AR-NAN1419 – Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) Updated Security Estimate for Water Licence Renewal/Amendment Process - Nanisivik Mine Property – Canzinc Ltd. - Nyrstar Canada (Holdings) Ltd. (Nyrstar).**

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### **A. Background**

The Nanisivik Mine Property is a past-producing zinc mine located in Canada's High Arctic approximated 30 km east of Arctic Bay, Nunavut. The mine operated for a period of 26 years from 1976 until 2002.

Since closure, Canzinc Ltd., a wholly owned subsidiary of Breakwater Resources Ltd., has implemented its closure and reclamation plan (approved in 2004), including water quality and geotechnical monitoring for the Nanisivik Mine Site.

As of August 26, 2011, Breakwater Resources Ltd. was purchased by Nyrstar Canada (Holdings) Ltd., a wholly-owned subsidiary of Nyrstar NV., thus reclamation activities are still being carried out by Canzinc Ltd. however Canzinc Ltd. is now a wholly owned subsidiary of Nyrstar Canada (Holdings) Ltd.

During the last five years the licensee has continued to carry out its water licence monitoring requirements and has remediated the remaining contaminated soil from past mining operations.

The existing water license (1AR-NAN1419) is valid until December 31, 2019.

### **B. Results of Review**

Based on the review of the recent Amendment and Renewal Application, it is understood that Canzinc has requested a reduction in the amount of financial security being maintained by the Crown from the current \$2,000,000 down to \$800,000 for the next 10-year licence period extending from 2020 to 2029, for a total reduction of \$1,200,000.

The rationale for the requested reduction in financial security is based on the fact that all remediation works at the dock-site have been finalized and that no further reclamation and closure activities are foreseen at the site (only monitoring of completed reclamation works).

Canzinc's \$800,000 liability estimate accounts for the costs involved in implementing the post-closure monitoring programs included in their licence application. It also



includes a contingency for any unplanned minor maintenance works that may be required, e.g. in relation to thermal covers and other geotechnical structures. The estimate is based on actual costs incurred in the implementation of the post-closure monitoring programs to date.

**Canzinc's Estimated Liability (CAD)**

Post-closure monitoring, 6 monitoring (events) years @ \$100,000/year	\$600,000
Contingency	\$200,000
<b>Total</b>	<b>\$800,000</b>

It is also noted that at the end of the proposed licence period in 2029, the closure and reclamation works completed in 2004 and 2005 will have been subject to 25 years of post-closure monitoring. The length of this post-closure monitoring period is aligned with industry practice and the abandoned military sites protocol for what may be required before a reclaimed mine site can be officially released from the environmental liability of the site.

The current Canzinc estimate of outstanding reclamation liabilities assumes no further monitoring of geotechnical and water quality conditions will be required beyond the 10-year licence period. The validity of this assumption will be assessed during and at the end of the 10-year licence period based on the results of the monitoring programs.

**Comments:**

CIRNAC notes that the current proposed reduction in the amount of financial security assumes that the West Twin Dike Spillway structure, which is designed to safely convey surface flow away for the tailings area downstream, will continue to function effectively as a passive system that will not require future maintenance. The next 10-year period of continued monitoring will help to validate this assumption over the long term.

Although CIRNAC is in agreement with Nyrstar on \$600,000 for post-closure monitoring CIRNAC considers the allotment of \$200,000 under contingency as insufficient. CIRNAC recommends that contingency be increased to \$400,000, to cover potential maintenance and remediation work, including use of heavy equipment that may be required to the West Twin Dike Spillway structure or any other physical structure of the former Nanisivik Mine during the 10-year term of the Amended Licence No. 1AR-NAN1419.

In addition CIRNAC is also satisfied that the buildings and equipment remaining on site are on commissionaires land and as such is the responsibility of the Government of Nunavut and not the responsibility of Nyrstar.



### **CIRNAC Security Estimate:**

Post-Closure Monitoring, 6 years @ 100,000 per year	\$600,000 (agreed)
Contingency	\$400,000
<b>Total</b>	<b>\$1,000,000</b>

CIRNAC recommends a security change from \$2,000,000 (currently held) to \$1,000,000, a reduction of \$1,000,000.