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Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU
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Attention: Ms. Dionne Filiatrault, P.Eng.,
Manager of Technical Services

Dear Dionne:

**Nanisivik Mine
Reviews of the 2004 Submissions
of the Nanisivik Mine
Reclamation and Closure Plan**

At the request of Nunavut Water Board (NWB), Acres International Limited (Acres) has reviewed the 2004 Closure and Reclamation Plan documents that were submitted by the Nanisivik Mine, a division of Canzinc Ltd. (Nanisivik Mine). The documents were prepared as requirements of Part G of the Water License No. NWB1NAN0208, issued by NWB on October 1, 2002.

The Final Closure and Reclamation Plan (Water License Reference G item 3) was submitted by Nanisivik Mine on February 6, 2004. The submitted document contains 10 (ten) appended documents, listed as follows.

- G-4 Engineering Design of Surface Reclamation Covers.
- G-5 Assessment of Surface Cell and Test Cell Taliks.
- G-6 Quarry Development and Reclamation Plan.
- G-7 Detailed Design of the West Twin Dyke Spillway.
- G-8 Rock Piles and Open Pits Closure Plan.
- G-9 Closure Monitoring Plan.
- G-13 2003 Phase 3 Environmental Site Assessment.
- G-14 Human Health and Ecological Risk Assessment.
- G-16 Waste Disposal Plan.
- G-17 Landfill Closure Plan.

The document on the Waste Disposal Plan (Reference G-16) contained no new submitted information since NWB provided a response letter on the subject, dated January 6, 2004. A revised document was subsequently submitted on March 3, 2004.

In addition, another document containing the West Twin Disposal Area Closure Plan (Reference G-15) was submitted on March 5, 2004.

A NWB letter dated March 22, 2004 provided direction regarding a technical meeting and a pre-hearing conference for the approval of the Nanisivik Mine Closure and Reclamation Plan. A technical meeting is scheduled for May 4 and 5, 2004, and a pre-hearing will follow on May 6, 2004 in Yellowknife, NWT. The public hearing in Arctic Bay has been tentatively scheduled for early June 2004.

Background

Nanisivik Mine submitted an initial Closure and Reclamation Plan in February 2002, as a result of their decision to permanently close the Mine in October 2001. A public hearing on the renewal of the water license was subsequently held in Arctic Bay in July 2002, followed by a technical meeting in Calgary in August 2002. Additional meetings were carried out in 2003, specifically to deal with the environmental, human health and ecological aspects of the mine closure.

The 2004 submissions provide in-depth and additional information on Nanisivik Mine's plan for closure and reclamation, including additional field works, technical design and studies, as well as planning details for the mine closure.

As part of the preparation for the upcoming technical meeting, Acres has reviewed the majority of the submitted documents to date. During the document review process, interactive discussions among Acres, NWB, Nanisivik Mine and their technical consultants were initiated. Initial comments and queries for clarifications on some minor aspects of the various documents were generated during this process. Some positive feedback and responses from the Nanisivik Mine were received.

Review and Comments

Further to the initial feedback and responses by Nanisivik Mine on some of Acres' queries and questions, we think that the following major topics or issues will need to be addressed and/or discussed during the technical meeting.

1. Summary of the activities that still need to be completed, as presented in the various documents

Additional works, including drilling, testing, survey and mapping programs prior to or as part of the mine reclamation period have been mentioned in the various documents. Nanisivik Mine should provide a complete list of such activities, including the activities planned for 2004.

2. Thickness of Cover Materials

A discussion will be required to finalize the design thickness for the various covers (tailings, waste rock, open pits, and landfill).

3. Underground and Above Ground Disposal at Open Pits

A discussion will be required to bring closure on the issue of underground vs. above ground disposal. Currently, the documents suggest that there is adequate space available underground for storage of the waste materials. However, there are a number of open pits and trenches that need to be reclaimed. Nanisivik Mine suggested that some these waste materials can be buried in those areas.

4. Landfarm Cell Reclamation

Detailed information on how the existing landfarm cell will be reclaimed, including confirmation for any contaminations to the existing ground and its surrounding area are not fully laid out, and should be discussed. Other related issues include any requirements for instrumentation and monitoring for this area.

5. East Adit Treatment Facilities

There is little information about the planning for this area. How will the reclamation for these facilities be coordinated with the remaining reclamation work, such as the current underground and above ground disposal plans? If these facilities will stay longer than the time frame scheduled for the reclamation period, where and how to reclaim or dispose the materials from this area?

6. Riprap and Bedding Materials

Where will these materials be obtained at the site? Current document has not yet confirmed the sources for these materials, except for brief information regarding the potential to use the excavated rock materials from the spillway area.

7. Talik Investigation

A discussion to finalize the issue of the taliks in the West Twin Dyke area, and its effects on the stability and long term integrity of the tailing covers and West Twin Lake Dyke will be required. The topics of discussion will also include the followings.

- Excess pore pressures and the need for relief of these pressures.
- Additional instrumentation.
- Isolation of the surface cell talik from the reservoir and its implications on permafrost aggradation, excess pore pressures and the West Twin Lake Dyke stability.

8. West Adit and Open Pits

Discussion will be required to address the reclamation work in this area, because of its close proximity to the West Twin Creek, soil chemistry and access for reclamation work (steep slopes).

9. Reclamation and Closure Periods

2+5 years versus 20 years reclamation and closure program at other mining sites will need to be addressed. How will the first 2 years of reclamation period be defined?

It is important to stress that the reclamation and closure periods are only tentative periods, and should only be used as a guide for the monitoring process, and to check the progress and effectiveness of the reclamation work.

10. Plan for the Industrial and Town Complexes

There is still inadequate information related to these two areas. It is understood that the infra structures at the industrial complex will be taken over by Wolfden Resources. What structures will be removed and what will remain for demolition and reclamation? Detailed plan and schedule will be required, since approval will be required prior to the start of the work. Similar information will be required for the town complex.

11. Tank Farm Reclamation

Detailed information on how the existing tank farms near the dock area will be reclaimed, including confirmation for any potential contaminations to the existing ground and its surrounding area should be discussed. Other related issues include any requirements for instrumentation and monitoring for this area.

12. Instrumentation and Monitoring Program

Discussion will be required to determine on how many instruments will be required, areas of monitoring, and frequency of monitoring.

A revised list, containing all of the instrumentation (existing and proposed) for the Nanisivik Mine will be helpful.

13. Strathcona Sound

Any requirements to discuss issues related to this area will need to be discussed and finalized.

We recommend that the above comments would be used as an agenda for the open discussion in the technical meeting, together with other issues that may be requested by other parties. They would also provide useful information for the Nanisivik Mine and their technical consultants in their preparations for the meeting. Should you have any further questions or concerns regarding the above, please do not hesitate to contact me.

Yours very truly,

A handwritten signature in black ink, appearing to read 'R. A. Halim', followed by a long horizontal line that ends in an arrow pointing to the right.

RAH:sep

R. A. Halim, P.Eng.
Senior Geotechnical Engineer

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