

Nunavut Water Board File No. NWB1ULU0008

NUNAVUT WATER BOARD

DECISION

Date of Hearing: March 28 and 29, 2000

Date of Decision: June 30, 2000

IN THE MATTER OF Article 13 of the *Nunavut Land Claims Agreement*,

- and -

IN THE MATTER OF the renewal of Echo Bay Mines Limited's Ulu project industrial water licence.

Cite as: re: Ulu Licence Renewal 2000

TABLE OF CONTENTS

APPEARANCES

SUMMARY

- 1. PROCEDURAL HISTORY AND BACKGROUND**
- 2. ISSUES**
- 3. SUMMARY OF EVIDENCE**
- 4. ANALYSIS**
- 5. CONCLUSION**

APPENDIX A: SUBMISSIONS AND CORRESPONDENCE

APPENDIX B: EXHIBIT LIST

APPENDIX C: LICENCE NWB1ULU0008

APPEARANCES

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SUMMARY

On September 16, 1999, the Nunavut Water Board received an application for the renewal of licence NWB2ULU9700 from Echo Bay Mines Limited. Following an approved screening of the application by the Nunavut Impact Review Board, the Nunavut Water Board decided to hold a hearing on March 28 and 29, 2000 before approving the application. Following submissions from several parties, including Echo Bay Mines Limited, the Department of Indian and Northern Affairs Canada, Environment Canada/Department of Fisheries and Oceans, and Mr. John Brodie, the Nunavut Water Board decided to renew Echo Bay Mines Limited's water licence for a term of eight years. The Nunavut Water Board attaches several conditions, including provision for a security deposit of \$1.7 million with annual adjustments based on a periodic assessment of liability, the use of freshwater for industrial purposes from West Lake, hydrological modeling of West Lake to assess drawdown and impacts to aquatic biota, assessment of Acid/Alkaline Drainage on waste rock and development rock, requirements for standard operating plans such as spill contingency, waste rock and ore storage, and sewage/solid waste operation and maintenance plan, and additions to the surveillance network program i.e., monitoring salinity at settling and neutralization ponds to assess levels associated with drilling and assessment of dissolved oxygen levels to establish the possibility of the presence of fish in East Lake.

I. PROCEDURAL HISTORY AND BACKGROUND

Procedural History

This matter involves the renewal of water licence NWB2ULU9700 for Echo Bay Mines Limited (EBM)'s Ulu project. This licence authorizes EBM to use water and dispose of waste into water in conjunction with advanced exploration. Licence NWB2ULU9700 was issued by the Nunavut Water Board on December 1, 1997 and expires May 31, 2000. The Board granted a one-month extension to EBM until June 30, 2000 in order to complete its decision on the renewal of the licence. One amendment was approved by the Board on April 30, 1998 when the project was placed in care and maintenance due to the decline of world gold prices. The Ulu project site is located on Inuit Owned lands within the Hood River watershed in the Kitikmeot region of Nunavut at longitude 110°58' W and latitude 66°55' N. The Ulu project is a satellite gold-bearing ore deposit and its development would extend the life of the parent Lupin Mine. Following completion of the underground exploration program at Ulu to confirm original resource calculations, production of the "satellite" ore body will merge with production at the Lupin mine site.

On September 16, 1999, the Board received an application for licence renewal from EBM. In accordance with Articles 12 of the *Agreement Between the Inuit of the Nunavut Settlement Area and her Majesty the Queen in Right of Canada* (NLCA), the project was screened by the Nunavut Impact Review Board (NIRB) to determine whether it had significant impact potential and whether it required review prior to processing by the Board. The NIRB Screening Decision¹ indicated that the project proposal could be processed without a review under Part 5 or 6 of Article 12 of the NLCA. Following receipt of the decision and an initial review of the application, the Board decided to hold a hearing before approving it. Notice of the public hearing was given on December 17, 1999. Prior to the actual public hearing, pre-hearings² were held on January 25 and 26, 2000 to inform the public about the project and the process to be followed by the Board.

¹ Screening Decision of the Nunavut Impact Review Board (NIRB) on Application: NIRB 99WR055 dated December 8, 1999. The decision of the [NIRB] Board in this case is 12.4.4 (a) the proposal may be processed without a review under Part 5 or 6 [of Article 12 of the NLCA]; NIRB may recommend specific terms and conditions to be attached to any approval, reflection the primary objectives set out in Section 12.2.5. The screening decision outlines the following: authority of the NIRB; primary objectives; reasons for decision; terms and conditions with respect to drill sites, water, fuel and chemical storage, waste disposal, wildlife, environmental, structure and storage facilities, archaeological sites, reclamation, monitoring, and other recommendations; and the validity of the NLCA.

² Notice of Pre-hearing given on January 10, 2000 in English and Innuinaqtun to West Kitikmeot communities, local, territorial and federal government and Inuit organizations. Pre-hearings were held in Umingmaktok, Bathurst Inlet and Kugluktuk on January 25, 2000 and in Cambridge Bay on January 26, 2000.

A public hearing was held in Kugluktuk on March 28 and 29, 2000 to deal with the water licence renewal applications for both the Ulu project and the Lupin Mine. Following the hearing and in light of issues raised at the hearing, the Board gave all parties the opportunity to respond or comment³ in writing on specific issues related to the application. A deadline to receive submissions was set for April 14, 2000 and a deadline to reply to written submissions received during the two-week period was set for April 21, 2000⁴. At the request of the DIAND, Department of Sustainable Development (DSD) and EBM, the Board decided to extend the final deadline for submissions to April 25, 2000.

Background⁵

EBM is one of the largest producers of gold and silver in North America. In 1995, the company produced more than 750,000 ounces of gold and 11 million ounces of silver from four mines, three located in the USA and one, the Lupin Mine, in Nunavut. The history of EBM in Canada's North began in 1964 at Port Radium, on the shores of Great Bear Lake about 41 kilometers south of the Arctic Circle. After 19 years of mining, reclamation of the mine was initiated in 1982 and completed by 1985.⁶

EBM purchased the Ulu site from Broken Hill Properties (BHP) in 1995 with the intent to mine the gold bearing ore using underground mining techniques and to haul the ore to the Lupin mine site for processing. In the application, EBM has indicated that the ore body at Ulu is not of sufficient size and value to be developed on its own and will of necessity require the infrastructure and cost reduction benefits of co-milling at Lupin.

The Ulu project is situated in the Kitikmeot region of Nunavut with the underground exploration site at longitude 100° 58' W and latitude 66° 54' N. The exploration site is in treeless arctic tundra currently accessible year round by aircraft and seasonally by winter road. It is about 12 kilometers north of the Hood River, the major drainage system for the area, and about 150 kilometers north of EBM's Lupin mine on Contwoyto Lake which is about 80 kilometers south of the Arctic Circle. The climate is severe with winter and summer temperatures typically ranging from -50° Celsius to +30° Celsius.

³ At the end of the Kugluktuk hearing, the Board established time periods for replies to 2 documents:

1. Mr. John Brodie's report on the Abandonment and Reclamation Cost Estimate of the Lupin Mine; and
2. EBM's document setting forth comments on the interventions regarding Lupin and Ulu applications.

⁴ The Board decided that the reply opportunity was available only to those who submitted written submissions during the two-week period.

⁵ All background information taken from "EBM Environmental Assessment Ulu Project" dated January 1997 or the original application for licence renewal filed by EBM on September 16, 1999.

⁶ Exhibit # 5 shows reclamation of the Port Radium site as well as at other EBM properties.

Permafrost in this area generally persists to depths of several hundred meters.

The exploration site is located entirely on Inuit Owned Lands, which are managed by the Kitikmeot Inuit Association (KIA)⁷. In accordance with Article 26 of the Nunavut Land Claims Agreement, an Inuit Impact and Benefits Agreement (IIBA)⁸ was negotiated and eventually signed on September 17, 1996.

Long range plans for the Ulu project include the complete development and permitting of an underground mine and winter road capable of handling the vehicles transporting stockpiled ore from Ulu to Lupin. A production feasibility estimate of 590 tonnes/day for seven years is presented in the application.

The gold deposit at Ulu lies within three mineral claims which covers a 2- to 3-kilometre wide lobe of mafic metavolcanic and metasedimentary rocks. The lobe is tightly folded into a north plunging asymmetrical anticline dissected by east-west trending faults. Mineralization is within a zone of basalt with subordinate sediments and gabbro. This zone can be traced on surface for 400 meters in a northwest direction near the core of the anticline. The 2- to 5-metre thick mineralized zone dips steeply at 70° to 80° to the southwest and has been intersected by diamond drilling to depths of about 600 meters. The area of local thickening up to 10 meters corresponds to flexure points along the roughly tabular body. Mineralization is comprised of an intensely silicified zone with arsenopyrite contained in fractures and dilatancies within basalts. To date 1,762 meters of underground drifting were completed to the 155 metre level; 16, 000 meters of underground diamond drilling were completed, requiring an additional 32, 650 meters to define all zones to 20 metre spacing down to the 335 metre level; bulk of the ore zones are between 175 and 275-metre levels; and indicated geologic resources are estimated at 1,368,953 tonnes @12.91 grams/tonne with diluted minable resources of 1,156,208 tonnes @ 11.47 grams/tonne.

Further development and diamond drilling are required to firm up the resource calculations and mining design. The program will be re-evaluated when the opportunity exists (i.e., world gold prices increase) to further develop the resource in conjunction with the operations at Lupin mine.

⁷ The KIA is the Designated Inuit Organization in whose name title to Inuit owned surface lands in the Kitikmeot was vested upon ratification of the Nunavut Land Claims Agreement (NLCA) in 1993. The KIA manages Inuit Owned Lands (IOL) on behalf of Inuit and in particular Kitikmeot Inuit in order to promote Inuit self-sufficiency and economic development in a manner consistent with Inuit cultural and environmental values and goals.

⁸ The IIBA is the first of its kind signed under the NLCA and establishes the framework for providing employment, training and other economic benefits to the First Nations people in the West Kitikmeot region of Nunavut. A copy of the IIBA is found in Appendix 22 of "EBM Environmental Assessment Ulu Project" dated January 1997.

II. ISSUES

Several parties raised a number of issues regarding the water licence for EBM's Ulu project. These issues include:

- A. The assessment of the overall cost of reclamation or abandonment and restoration of the Ulu site and total amount of security required of EBM, including the form and schedule of payment;
- B. Use of East Lake as a contingency for holding excess minewater from the designed holding pond at the storage pad area;
- C. Hydrological modeling to verify drawdown and recharge rates of West Lake;
- D. Concerns with Acid Rock Drainage (ARD);
- E. Submission of Spill Contingency Plan, Waste Rock and Ore Storage Plan, and Sewage/Solid Waste Operation and Management Plan;
- F. Modification requests to Surveillance Network Program (SNP);
- G. Disposal of sewage sludge; and,
- H. Term of the licence.

III. SUMMARY OF EVIDENCE

A. EBM

At the hearing, EBM provided a historical summary of the project, overviewed existing water use and waste disposal facilities and confirmed that additional advanced exploration with bulk sampling and underground diamond drilling is still required to further assess project development feasibility.⁹ EBM stated that "the re-engineering study" completed for Lupin continues to include the Ulu project but a considerable increase in the world gold price is required in order to enable the exploration program to continue and confirmed that the Ulu project is on hold, and all exploration activity is suspended.¹⁰

⁹ EBM indicated that planned exploration would include underground diamond drilling and access development, which would remove approximately 160,000 tonnes of waste rock, and 40,000 tonnes of material that may be considered ore. The goal is to complete definition of the Ulu ore body and provide a 1,000-tonne bulk sample for metallurgical and environmental testing. Ulu facilities currently consist of camp buildings, support shops, fuel storage, incomplete ore storage pad, lay-down areas, access roads, incorporated airstrip, and parking areas. Freshwater is obtained from West Lake at a permitted rate of 100 cubic meters per day. Sewage is treated with a portable package treatment facility and treated effluent is discharged to East Lake. East Lake is also proposed as a contingency to hold excess mine water that cannot meet acceptable water quality limits in the designed holding pond at the storage pad area.

¹⁰ EBM noted in Exhibit 2 that Ulu would remain on hold until gold prices reach the \$340 US/ounce range, and that it was unlikely that activity would resume before 2001.

EBM requested no changes to the original licence and that conditions of the April 1998 amendment be included in the renewal.¹¹

EBM also asked the Board to consider reviewing the Surveillance Network Program (SNP) in the license, to consider removing sampling requirements for parameters that are not part of the effluent quality limits, and to adjust and harmonize limits and sampling between discharge limits and SNP.

Regarding the amount of security, EBM pointed out their long history in the North and their good track record, including compliance with previous and current licences, and suggested the Board consider these factors in its assessment for provision of security deposit. That said, EBM estimated the overall closure cost for the Ulu project to be \$1,432,576 and urged the Board to use its estimate instead of Mr. John Brodie's.¹²

EBM asked the Board to consider the value of salvageable assets and the Ulu ore body in setting the security requirements for the project and suggested that these assets would be sufficient to pay for any present restoration liability.¹³

EBM is in full agreement that the public's interest needs to be protected but believes that a reclamation trust is an appropriate instrument for the provision of security. EBM proposed the establishment of a reclamation trust fund¹⁴ as referenced in the previous Ulu water licence and further proposed that the security required under that licence be rolled over into the fund so that interest could be accrued.¹⁵ EBM agreed that the Board would review the

¹¹ Licence NWB2ULU9700 was amended to reduce the amount of administration work required from EBM until notification provided to the Board that operations were to resume. The Board maintained the requirements for provision of an Abandonment and Restoration plan, reclamation cost estimates and annual reporting. Surveillance Network Program monitoring requirements and the following terms and conditions were amended to be "effective upon at least sixty (60) days of notification to the Board by the Licensee that operation at the site will be resumed": Part D, Item 7-11 (proposal for disposal of minewater and excess runoff; inspection program; annual geotechnical inspection; plan for conducting Acid Rock Drainage and Geochemical characterization, and a Waste Rock/Ore Storage Management plan); Part D, Item 18 (plan for sewage sludge disposal); Part E, Item 1 (provision of Spill Contingency Plan); Part H, Item 1 (Operation and Maintenance Plan for sewage and solid waste disposal); and Part G, Item 1.

¹² EBM insisted that the differences between their figures and BCL's at \$1,929,456 are mainly attributed to the 4% per annum inflation rate and 15% contingency included in BCL's estimate.

¹³ EBM estimated salvageable asset value between \$3 million and \$5 million.

¹⁴ "Reclamation Trust Fund" means a trust recognized by the Canadian *Income Tax Act* by which the beneficiary establishes, under the terms of a contract entered into with Her Majesty in right of Canada on or after January 1, 1996, funds set aside for the sole purpose of funding the reclamation of a mine.

¹⁵ Licence NWB2ULU9700 requires security to be provided according to the following:

Part B: General Conditions

Item 2. The Licensee shall have posted and shall maintain a security deposit according to the following schedule:

need for additional security only in the event that the mine restoration liability increases.

In response to a submission from EC/DFO expressing concerns about the use of East Lake as a contingency pond for minewater discharge and possible impacts on fish and fish habitat, EBM stated that "a program could be operated from Lupin" but argued that, based on conclusions of a fisheries report, East Lake's small size, maximum depth of 6.2 meters, lack of an adequate link to other fish habitat and isolated position, precluded the existence of fish.¹⁶ The report also provided information on lake morphology, limnology and water chemistry. In its prepared written response to EC/DFO's submission, EBM agreed with a suggestion by EC/DFO that a good way to have an indication of suitability of the lake for fish habitat would be to investigate oxygen levels prior to spring thaw, and agreed to conduct such a study if requested.

Regarding water use from West Lake, EBM stated that the estimated withdrawal was no more than 100 cubic meters per day and that West Lake would not be drawn down beyond 0.19 metre during the winter prior to recharge the following spring. EBM agreed in their prepared response that a review of the bathymetric work could provide an indication of the amount of area potentially affected by the drawdown and its effect on the littoral zone habitat, and did not object to conducting such review in the next open water season.

At the hearing, EBM confirmed that field leaching tests had commenced and that samples had been collected on a regular basis over the last two summer

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- a. within thirty (30) days of issuance of this licence, an amount of \$250,000.00 dollars;
 - b. such further or other amounts as may be required by the Board based on annual estimates of current mine restoration liability in accordance with Part H, Item 3 and part H, item 4 of this licence.

Item 3. The security deposit may be applied to carry out work necessary to fulfill requirements of this licence where there is contravention of a condition of the licence and failure by the licensee to comply with a direction issued by the Board or by any other competent and authorized governmental body or official. This includes operational requirements as well as the provision of the Final Abandonment and Restoration Plan.

The Security deposit shall be maintained until such time as the Board is satisfied that the Licensee has complied with all provisions of the approved Final Abandonment and Restoration Plan. This clause shall survive the expiry of this Licence or renewals thereof.

Item 4. The Licensee may submit to the Board for approval the terms of reference for the establishment of a Reclamation Trust Fund. The Licensee shall implement the terms of the Trust Agreement only as, and when approved by the Board.

¹⁶ Public Registry document, "Baseline Aquatic Studies Program in the Ulu Project area, Nunavut (1997)" RL&L Environmental Services Ltd., dated May 1998.