

Mackenzie Valley Land and Water Board

7th Floor - 4910 50th Avenue • P.O. Box 2130

YELLOWKNIFE, NT X1A 2P6

Phone (867) 669-0506 • FAX (867) 873-6610

October 20, 2003

File: N1L2-0043

Mr. Ron Connell
Miramar Giant Mine Ltd.
Box 2000
YELLOWKNIFE, NT X1A 2M1

FAX: (867) 669-3701

Dear Mr. Connell:

ISSUANCE OF A TYPE "A" WATER LICENSE

Attached is Water License No. N1L2-0043 granted by the Mackenzie Valley Land and Water Board (MVLWB or the Board) in accordance with the *Northwest Territories Waters Act*. A copy of this License has been filed in the Public Registry at the office of the MVLWB. The MVLWB approved Water License N1L2-0043 for a period of 28 months commencing October 28, 2003 and expiring December 31, 2005.

Attached are general procedures for the administration of Licenses in the Northwest Territories. The MVLWB requests that you review these and address any questions to the Boards office.

Please be advised that this letter, with attached procedures, all inspection reports, and correspondence related thereto, are part of the Public Registry, and are intended to keep all interested parties informed of the manner in which the License requirements are being met. All Public Registry material will be considered if an amendment to the License is requested.

The full cooperation of Miramar Giant Mine Ltd. is anticipated and appreciated.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Melody J. McLeod", with a long horizontal flourish extending to the right.

Melody J. McLeod
Chair

Attachments

Copy to: Ed Hornby, South Mackenzie District, DIAND, Yellowknife
David Milburn, Water Resources Division, DIAND
Distribution List of Reviewers



**MACKENZIE VALLEY LAND AND WATER BOARD
WATER LICENSE**

Pursuant to the *Mackenzie Valley Resource Management Act* and Regulations, the Mackenzie Valley Land and Water Board, hereinafter referred to as the Board, hereby grants to:

Miramar Giant Mine Ltd.

of

P.O. Box 2000, YELLOWKNIFE, NT X1A 2M1

hereinafter called the Licensee, the right to alter, divert or otherwise use water subject to the restrictions and conditions contained in the *Northwest Territories Waters Act* and Regulations made there under and subject to and in accordance with the conditions specified in this License.

License Number: N1L2-0043

License Type: A

Water Management Area: Northwest Territories 01

Location: Latitude 62°30' N
Longitude 114°21' W
Giant Minesite, Yellowknife,
Northwest Territories

Purpose: Water Use and Waste Disposal for Industrial
Undertakings

Description: Gold Mining and Milling Production and Associated
Uses


Quantity of water **not to be exceeded**: See Part C, Item 2


Effective Date of License: August 26, 2003

Expiry Date of License: December 31, 2005

This License issued and recorded at Yellowknife includes and is subject to the annexed conditions.

MACKENZIE VALLEY LAND AND WATER BOARD


Witness


Chair

APPROVED BY


Minister of Indian Affairs and Northern
Development

2. Pursuant to Section 17(1) of the *Act* and Section 12 of the Regulations, the Licensee shall have posted and shall maintain a security deposit according to the following schedule:
 - a) upon issuance of this Licence, a security deposit in the amount of \$400,000;
 - b) on the first and second anniversary of this Licence, an additional amount of \$1,300,000;
 - c) on each of the subsequent two anniversaries thereafter, an additional amount of \$2,000,000 throughout the term of the Licence; and
 - d) such further or other amounts as may be required by the Board based on annual estimates of current mine reclamation liability in accordance with Part B, Item 5 p) of this Licence.

3. The security deposit shall be maintained until such time as it is fully or in part refunded by the Minister pursuant to Section 17 of the *Act*. This clause shall survive the expiry of this Licence or renewals thereof and until full and final restoration has been completed to the satisfaction of the Minister.

4. A Reclamation Trust Fund may be established during the term of this Licence. The Licensee shall implement the terms of the Trust Agreement as approved by the Board.

5. The Licensee shall file an Annual Report no later than March 31 of the year following the calendar year reported which shall contain the following information:
 - a) the monthly and annual quantity in cubic metres of water obtained from Great Slave Lake for use in the mining and milling process;

- g) a detailed report on methods being used or planned to recycle and reduce water use, so that the total quantity of waste can be reduced;
 - h) a detailed description of progressive reclamation activities and associated costs carried out on the site during the period being reported, any related studies that have been completed or are ongoing, and an outline of any anticipated work for the next year;
 - i) a list of all unauthorized discharges or spills;
 - j) the monthly and annual quantity in cubic metres of Minewater recycled;
 - k) approved revisions to the Spill Contingency Plan and the Abandonment and Restoration Plan;
 - l) results from the acid-base accounting analysis on the mill tailings solids and waste rock as described in Part D, Item 2 of the Surveillance Network Program;
 - m) details of any activity or maintenance to control till erosion on Trapper Creek;
 - n) any updates to the evaluation referred in Part D, Item 5;
 - o) a detailed report on measures taken during the year to contain and prevent windblown tailings, and what measures will be taken in the upcoming year;
 - p) an updated estimate of the current mine reclamation liability based upon the results of the mine reclamation research, the mine development monitoring, any modifications to the mine plan, utilizing the Reclaim version 3.1 mine reclamation cost estimate model, or equivalent; and
 - q) any other details on water use or waste disposal as requested by the Board by November 1st of the previous year.
6. The Licensee shall comply with the "Surveillance Network Program" annexed to this Licence, and any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this Licence.
7. The "Surveillance Network Program" and compliance dates specified in the Licence may be modified at the discretion of the Board.
8. Meters, devices or other such methods used for measuring the volumes of water used and waste discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.

9. The Licensee shall, within sixty (60) days of the issuance of this Licence, post and maintain the necessary signs to identify the stations of the "Surveillance Network Program" to the satisfaction of an Inspector.
10. The Licensee shall implement all plans upon approval and as directed by the Board.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all surface water used for industrial and domestic purposes from Great Slave Lake at the location of the existing pumphouse as shown on Drawing Titled "Surface Water Intake" dated May 25, 1998.
2. The annual quantity of water obtained from the location described in Part C, Item 1, plus the quantity of Minewater pumped from the Mine to the surface, shall not exceed 1,800,000 cubic metres. Procedures should be undertaken to reduce the annual intake of surface water from Great Slave Lake and increase the use of Minewater.
3. As of December 31, 1999 the annual quantity of water obtained from the location described in Part C, Item 1, plus the quantity of Minewater pumped from the Mine to the surface, shall not exceed 1,600,000 cubic metres.
4. The Licensee shall submit to the Board for approval, by October 1, 1998 a report describing the following:
 - a) methods for water use reduction and conservation, and an implementation schedule for complying with Part C, Item 3.
 - b) methods for monitoring and reducing minewater seepage;
 - c) an inventory of current meters, devices and other such methods used for measuring the volumes of water used and wastes discharged, which shall include, but not be limited to the accuracy, reliability, current standards and technology, and plans to upgrade such devices; and
 - d) a schedule for inspection, upgrading, maintenance and the calibration of such devices, which shall be implemented upon approval by the Board.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall recycle or discharge all Minewater to the Tailings Containment Areas unless otherwise approved by the Board.
2. Tailings Containment Areas shall be constructed, operated and maintained to engineering standards such that:
 - a) the solids fraction of the mill tailings shall be permanently contained within the Tailings Containment Areas;
 - b) immediate and long term measures are undertaken to contain and prevent wind blown tailings in the Tailings Containment Areas;
 - c) seepage from the Tailings Containment Areas is minimized;
 - d) any seepage that occurs is collected and returned immediately to the Tailings Containment Areas;
 - e) at least one half (0.5) metre of freeboard shall be maintained at all times;
 - f) weekly inspections of all aspects of the Tailings Containment Areas including the catchment basins, dams and tailings lines, shall be carried out using visual and best available technology and the records of these inspections shall be kept for review upon the request of an Inspector. More frequent inspections shall be performed at the request of an Inspector;
 - g) any constructed facilities that are eroded are repaired immediately; and
 - h) an inspection of the Tailings Containment Areas is carried out annually before July 1 by a qualified Geotechnical Engineer. The inspection should also include an evaluation of the Tailings Containment Areas' capacity in terms of solid and liquid tailings deposited annually. The engineer's report shall be submitted to the Board for approval within sixty (60) days of the inspection, including a covering letter from the Licensee outlining how and when the report's recommendations will be addressed.
3. The Licensee shall discharge all mill process wastes and sewage to the Tailings Containment Areas.
4. The Licensee shall, effective upon issuance of this Licence and to the satisfaction of an Inspector, implement and evaluate measures to contain and prevent wind blown tailings.

5. The Licensee shall, by February 1, 1999, submit to the Board for approval, a Tailings Management Plan complete with a schedule for the placement of tailings, an assessment of the remaining capacity of the Tailings Containment Areas, an assessment of the nature and quality of seepage from the Tailings Containment Areas, methods to contain and eliminate seepage, quality of pore water contained within the tailings solids, stability of dams and alternative methods of containment upon abandonment.
6. The Licensee shall consult with an Inspector and the Department of Fisheries and Oceans ten (10) days prior to any proposed discharge of waste from the Effluent Treatment Facility and receive approval, from the Inspector, to discharge water.
7. The Licensee shall advise an Inspector three (3) days prior to cessation of the discharge each year.
8. All wastes decanted from the Effluent Treatment Facility shall be discharged to Baker Creek, according to Drawing Titled "Effluent Treatment Facilities" dated May 25, 1998, or as otherwise approved by the Board.
9. All waste discharged shall meet the following effluent quality requirements:

Parameter	Maximum Average Concentration	Maximum Concentration of Any Grab Sample
Total Ammonia	15.0 mg/L	
Total Arsenic	0.50 mg/L	1.00 mg/L
Total Copper	0.30 mg/L	0.60 mg/L
Total Cyanide	0.80 mg/L	1.60 mg/L
Total Lead	0.20 mg/L	0.40 mg/L
Total Nickel	0.50 mg/L	1.00 mg/L
Oil and Grease		5.0 mg/L
Total Suspended Solids	15.0 mg/L	30.0 mg/L
Total Zinc	0.20 mg/L	0.40 mg/L

The waste discharged shall have a pH between 6.0 and 9.5.

10. Effective April 1, 2000, the effluent quality requirement for Total Ammonia shall be reduced to:

12.0 mg/L

PART E: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may without written consent from the Board, carry out modifications to the water supply and waste disposal facilities provided that such modifications are consistent with the terms of this Licence and the following requirements are met:
 - a) the Licensee has notified the Board in writing of such proposed modifications at least forty-five (45) days prior to beginning the modifications;
 - b) such modifications do not place the Licensee in contravention of either the Licence or the Act;
 - c) the Board has not, during the forty-five (45) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than forty-five (45) days; and
 - d) the Board has not rejected the proposed modifications.
2. Modifications for which all of the conditions referred to in Part E, Item 1, have not been met, can be carried out only with written consent from the Board.
3. The Licensee shall provide as-built plans and drawings of the modifications referred to in this Licence within ninety (90) days of completion of the modifications. These plans and drawings shall be submitted to the Board on material that will reproduce with the use of a standard printer/copier.

PART F: CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Licensee shall update the existing approved Contingency Plan dated September 28, 1994 in accordance with the Northwest Territories Water Board's "Guidelines for Contingency Planning, January 1987" and submit it to the Board for approval by August 1, 1998.
2. The Licensee shall revise the Contingency Plan referred to in Part F, Item 1, if not acceptable to the Board. The revised Plan shall be submitted to the Board for approval within ninety (90) days after notification.
3. The Licensee shall annually review the Contingency Plan and modify the Plan to reflect changes in operation, technology and personnel. Any proposed modifications shall be submitted to the Board for approval.

4. The Licensee shall employ the appropriate Contingency Plan in Part F, Item 1 and notify an Inspector within 24 hours of any exceedance or any anticipation of exceedance of the requirements in Part D, Item 9.
5. If, during the period of this Licence, an unauthorized discharge occurs, or if such a discharge is foreseeable, the Licensee shall:
 - a) employ the appropriate Contingency Plan;
 - b) report the incident immediately via the 24-Hour Spill Report Line (867) 920-8130; and
 - c) submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event. The report should include changes in operations, modifications, or improvements to prevent repeat occurrences.

PART G: CONDITIONS APPLYING TO ARSENIC TRIOXIDE MANAGEMENT

1. The Licensee shall submit to the Board for approval by October 1, 1999 an Arsenic Trioxide Management Project Description suitable for environmental assessment for the permanent management and disposal of arsenic trioxide material generated and stored on site. This project description shall include, but not be limited to the following:
 - a) a detailed description of the proposed methods for the disposition of arsenic trioxide waste stored in underground vaults and on the surface;
 - b) the rationale for choosing the preferred method;
 - c) a risk assessment for the preferred method;
 - d) a detailed description of the contingencies proposed should the preferred method fail;
 - e) an implementation schedule to complete the recovery and processing facility and the associated costs;
 - f) a detailed description of the management methods for the residual arsenic trioxide material and any waste byproducts; and
 - g) a detailed monitoring plan.

2. The Licensee shall submit to the Board for approval, a detailed progress report beginning October 1, 1998 and quarterly thereafter, describing activities undertaken, progress made during reporting period towards meeting the project description referred to in Part G, Item 1.
3. The Licensee shall implement the plan referred to in Part G, Item 1, as and when approved by the Board.
4. The Licensee shall incorporate the findings and recommendations of the approved plan referred to in Part G, Item 1, into the Abandonment and Restoration Plan.

PART H: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall submit to the Board for approval by November 1, 1998 a final Abandonment and Restoration Plan in accordance with the Northwest Territories Water Board's "Guidelines for Abandonment and Restoration Planning for Mines in the Northwest Territories, September 1990" and incorporating progressive reclamation. The Abandonment and Restoration Plan shall include, but not be limited to the following:
 - a) areas scheduled for progressive reclamation;
 - b) open pits;
 - c) rehabilitation of Baker Creek;
 - d) underground mine;
 - e) quarries and till borrow pits;
 - f) waste dumps;
 - g) tailings impoundments;
 - h) mill and surface facilities;
 - i) town site;
 - j) roads;
 - k) water management system;

- l) wastes, chemicals, contaminated soil;
 - m) arsenic trioxide vaults;
 - n) restoration measures to be undertaken at inactive tailings deposition areas; and
 - o) maintenance of Trapper Creek watershed to prevent erosion.
2. The Licensee shall revise the Abandonment and Restoration Plan referred to in Part H, Item 1, if not acceptable by the Board. The revised Plan shall be submitted to the Board for approval within ninety (90) days after notification.
 3. The Licensee shall incorporate the findings and recommendations of the following reports into the Abandonment and Restoration plan as and when approved by the Board:
 - a) Arsenic Trioxide Management, dated March 31, 1998;
 - b) Evaluation of Surface Contamination Data, dated March 1998; and
 - c) Tailings Cover Study, dated April 1998.
 4. The Licensee shall carry out abandonment and restoration as outlined in the Abandonment and Restoration Plan, unless revisions to the Plan have been approved by the Board.
 5. The Licensee shall complete all reclamation work within the time schedule specified in the Abandonment and Restoration Plan, or as subsequently revised and approved by the Board.
 6. The Licensee shall annually review the Abandonment and Restoration Plan and shall modify the Plan to reflect changing operations, technology and the results of reclamation and other studies. The proposed modifications shall be submitted to the Board for approval.
 7. Compliance with the Abandonment and Restoration Plan specified in this Licence shall not limit the legal liability of the Licensee, other than liability arising from provisions of the *Act* and its Regulations.

PART I: CONDITIONS APPLYING TO HAZARDOUS WASTE MANAGEMENT

1. The Licensee shall, by May 1, 1999 submit to the Board for approval, a Hazardous Waste Management Program for the mine site. The program shall include, but not be limited to: an inventory of hazardous wastes such as batteries, chemicals, hydrocarbon waste, PCB's, asbestos building materials, contaminated soils, contaminated maintenance materials from the arsenic trioxide recovery facilities, surface storage of arsenic trioxide and procedures for the ongoing management and disposal of these materials.

NORTHWEST TERRITORIES WATER BOARD



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