

Environment Act Licence

Manitoba
Environment



Licence No. 1644

Issue Date MARCH 30, 1993

In accordance with the Manitoba Environment Act (C.C.S.M. c. E125)

THIS LICENCE IS ISSUED TO:

CAZADOR EXPLORATIONS LIMITED; "the Licencee"

for the construction and operation of the proposed Development, being the BT Open Pit Mine, with the associated access road and 69 kV power line from Lynn Lake to the mine site, as outlined in the Licencee's Proposal dated August 5, 1992 and altered October 30, 1992, and located on the BT Property 15 kilometres southeast of Lynn Lake, and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence:

"acid-soluble" means extractable, where the liquid sample is acidified with 5 millilitres of 1:1 nitric acid per litre of sample at the time of collection, and shaken well before analysis;

"composite sample" means a quantity of effluent consisting of a minimum of three equal volumes of effluent collected at approximately equal time intervals over a sampling period of not less than 7 hours and not more than 24 hours, or consisting of effluent collected continuously at an equal rate over a sampling period of not less than 7 consecutive hours and not more than 24 consecutive hours;

"final discharge point" means the point of release of liquid effluent from the "settling pond" shown in Appendix 'A', and such additional point(s) of release of liquid effluent as may be designated in writing by the Director, unless otherwise re-designated in writing by the Director;

"grab sample" means a single quantity of effluent collected in a container at any time;

"liquid effluent" includes mine wastewater and surface runoff from the mine site;

"mg/L" means milligrams per litre;

"mine" includes the open pit, offices, shop, dry facilities, stockpiled soils, waste rock and low grade ore, and all other ancillary buildings and facilities associated with the mining operations at this mine site, as depicted in Appendix 'A' attached to this Licence;

"mine site" means the property described by the surface and mineral leases held by Cazador Explorations Limited and its associates on which the BT mine is located;

"mine wastewater" includes drill and runoff water from within the open pit, and treated sanitary sewage;

"monthly arithmetic mean" means for each pollutant or characteristic, the average of all values determined from the analysis of all composite and grab samples collected and reported during that month with the exception that, if the Licencee collects only one composite or grab sample during a single month, the single set of analytical results shall be construed to be representative of the effluent quality for that month and hence shall be treated as the monthly arithmetic mean;

"sanitary sewage" means all toilet, sink, and shower stall wastes, but does not include sewage collected in fully contained privies where such sewage might be transported to and disposed of at a waste disposal ground permitted to accept such waste.

GENERAL SPECIFICATIONS

1. The Licencee shall undertake and submit to the Director by August 31, 1993 an Environmental Impact Assessment addressing the proposed construction of the access road and 69 kV power line, and the proposed development and operation of the mine, as requested of the Licencee by the Director on October 20, 1992 in accordance with the Environmental Impact Assessment guidelines issued to the Licencee by the Director on December 15, 1992.
2. Notwithstanding any of the following limits, terms and conditions specified in this Licence, the Licencee shall, upon the request of the Director:
 - (a) sample, monitor, analyze and/or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, treatment, handling, disposal or emission systems, for such pollutants or ambient quality, aquatic toxicity, leachate characteristics, and discharge rates, for such duration and at such frequencies as may be specified;
 - (b) determine the environmental impact associated with the release of any pollutants from the said mine; or
 - (c) provide the Director, within such time as may be specified, with such reports, drawings, specifications, analytical data, flow rate measurements and such other information as may from time to time be requested.
3. The Licencee shall carry out all analyses on liquid samples in accordance with the methods prescribed in the most current edition of "Standard Methods for the Examination of Water and Wastewater" published jointly by the American Public Health Association, the American Waterworks Association and the Water Pollution Control Federation.
4. The Licencee shall report all the information requested through the provisions of this Licence in a manner and form acceptable to the Director.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Respecting the Access Road and the 69 kV Power Line

5. The Licencee shall review the intended route for the access road and the 69 kV power line between Lynn Lake and the BT Property with the local Natural Resource Officer, and secure all necessary work permits and timber cutting permits, as may be required, before commencing construction of the said works or before commencing their construction beyond any section of this route for which such permits may already exist.
6. The Licencee shall ensure that the type of stream crossings proposed along the access road, particularly by the stream crossing at Muter Creek, are satisfactory to the local Natural Resource Officer before commencing their construction.
7. The Licencee shall not construct a stream crossing during such a period and at such a stream where, in the opinion of the local Natural Resource Officer, a temporary postponement is required to protect fish spawning activities at an environmentally sensitive stream.
8. The Licencee shall not use timber treated with creosote or other similar wood preservative chemicals for any bridge constructions or embankment retaining walls at any new stream crossings where such traversed streams are considered environmentally sensitive by the local Natural Resource Officer.
9. The Licencee shall not erect any wooden power line support structures, treated with creosote or other similar wood preservative chemicals, within 10 metres of the high water line of any traversed stream considered environmentally sensitive by the local Natural Resource Officer.

Respecting the Diversion of Waban Creek

10. The Licencee shall ensure that the proposed diversion canal for Waban Creek is so constructed that it results in a no net loss of fish habitat consistent with the Department of Fisheries and Oceans "Policy for the Management of Fish Habitat", and that this project is carried in coordination with the Thompson regional office of the Manitoba Fisheries Branch.

Respecting Liquid Discharges

11. The Licencee shall:
 - (a) complete the installation of a sewage treatment facility, along with a sewage collection system, before or concurrent with the completed construction of the mine office and dry facilities, with the sewage treatment facility designed to accommodate peak hydraulic loadings at shift changes;
 - (b) upon the completed installation of the sewage treatment facility, direct all sanitary sewage generated on the mine site to the sewage treatment facility; and
 - (c) operate the sewage treatment facility in such a manner so as to ensure that the liquid effluent released from the sewage treatment facility is of such quality that in any grab

sample taken of the effluent at the outfall of this facility:

- (i) the suspended solids content is not in excess of 30 milligrams per litre;
- (ii) the five-day biochemical oxygen demand is not in excess of 30 milligrams per litre.

12. The Licencee shall:

- (a) submit to the Director the design plans for the settling pond showing all the dimensions, slopes, freeboard above a valved outfall, outfall detail, thickness and type of construction material to be used on the interior surfaces, including the design hydraulic conductivity of the interior surfaces to restrict seepage losses and the design criteria used to size the pond for achieving the specified suspended solids limit, for the approval of the Director prior to commencing construction of the settling pond;
- (b) complete construction of the settling pond for the mine wastewater prior to commencing dewatering activities from the proposed open pit site; and
- (c) commence directing all mine wastewater into the settling pond upon its completed construction.

13. The Licencee shall not discharge any mine wastewater into the environment except through the designated final discharge point.

14. The Licencee shall not discharge any liquid effluent from any designated final discharge point on the mine site if:

- (a) the concentration of any of the following pollutants in the liquid effluent is in excess of the corresponding maximum allowable concentration shown for those categories listed under Columns I, II and III of the following table:

<u>Pollutants</u>	<u>Column I</u> Maximum monthly arithmetic mean concentration	<u>Column II</u> Maximum concentration in a composite sample	<u>Column III</u> Maximum concentration in a grab sample
total arsenic	0.5 mg/L	0.75 mg/L	1.0 mg/L
total copper	0.3 mg/L	0.45 mg/L	0.6 mg/L
total lead	0.2 mg/L	0.30 mg/L	0.4 mg/L
total nickel	0.5 mg/L	0.75 mg/L	1.0 mg/L
total zinc	0.5 mg/L	0.75 mg/L	1.0 mg/L
total suspended solids	25.0 mg/L	37.5 mg/L	50.0 mg/L

- (b) the pH of the effluent is below the minimum allowable values shown for those categories listed under Columns I, II and III of the following table:

<u>Column I</u>	<u>Column II</u>	<u>Column III</u>
<u>Minimum monthly arithmetic mean pH</u>	<u>Minimum pH in a composite sample</u>	<u>Minimum pH in a grab sample</u>
6.0	5.5	5.0

15. The Licencee shall:

- (a) ensure to comply with all the requirements of Manitoba Regulation 97/88 R respecting the storage and handling of gasoline and associated products; and
- (b) not deposit oil separated liquid wastes from the surface mechanics shop into the environment except to a treatment or disposal facility approved by the Director.

Respecting Solid Wastes and Recyclable Wastes

16. The Licencee shall ensure that all the removed or displaced overburden soils, waste rock and low grade ore at the mine site are handled such that each of the organic surficial soils, fine or gravelly inorganic soils, waste rock, and low grade ore are stockpiled in separate stockpiles located at sites sufficiently removed from Waban Creek or Shortie Lake such that runoff from these stockpiles will either be directed away from or will not cause any visible or measurable adverse environmental effect upon the said waterways.
17. The Licencee shall not deposit solid waste, as defined in Manitoba Regulation 150/91, into the environment except into a waste disposal ground operating under the authority of a permit issued pursuant to Manitoba Regulation 150/91.
18. The Licencee shall not deposit bulky metallic wastes, used tires, used oil and other fluid lubricants, and any other class of recyclable waste substances as may be specified by the Director, into the environment except to:
 - (a) a facility or infrastructure which accepts such materials for recycling, or
 - (b) a waste disposal ground operating under the authority of a permit issued pursuant to Manitoba Regulation 150/91, where these recyclable substances are kept distinctly segregated from each other and are not buried (unless otherwise specified by the Director) so as to readily facilitate their recycling.
19. Respecting the handling and storage of used oil and hydraulic fluids removed from on-site machinery, the Licencee shall ensure that these substances are collected, transported and stored in secure, properly labelled, non-leaking containers until recycled, and that the storage area consists of a base and dikes lined in a fashion satisfactory to the Director so as to prevent the loss of any spilled oil to the subsoil at that storage area.
20. The Licencee shall make an effort to initiate and maintain a recycling program for those substances identified in, or through the provisions of, Clause 18 of this Licence, and shall by December 31st of each year, submit a report to the Director on the achievements made over the preceding 12 months regarding the recycling program.

MONITORING AND REPORTING SPECIFICATIONS

Respecting the Access Road and the 69 kV Power Line

21. Upon the completion of the access road from Lynn Lake to the BT Property, the Licencee shall submit to the Director:
- (a) a map showing the route taken for the access road and 69 kV power line with all the stream crossing locations, with all those traversed streams declared environmentally sensitive by the local Natural Resource Officer clearly identified on the map; and
 - (b) copies of all the issued work permits and timber cutting permits which authorized the construction of the access road and the 69 kV power line.

Respecting Liquid Discharges

22. The Licencee shall sample and analyze liquid effluent released from the final discharge point of the settling pond:
- (a) for the following pollutants at no less a frequency than is specified in the table below, where the applicability of Columns I, II, III and IV for each pollutant listed shall be determined on the basis of the arithmetic mean concentration of that pollutant in the samples of effluent collected and reported in those preceding six months during which effluent discharge occurred:

<u>Pollutant</u>	<u>Column I</u>	<u>Column II</u>	<u>Column III</u>	<u>Column IV</u>
	At least weekly if concentration is equal to or greater than	At least every two weeks if concentration is equal to or greater than	At least monthly if concentration is equal to or greater than	At least every six months if concentration is less than
total arsenic	0.5 mg/L	0.2 mg/L	0.10 mg/L	0.10 mg/L
total copper	0.3 mg/L	0.1 mg/L	0.05 mg/L	0.05 mg/L
total lead	0.2 mg/L	0.1 mg/L	0.05 mg/L	0.05 mg/L
total nickel	0.5 mg/L	0.2 mg/L	0.10 mg/L	0.10 mg/L
total zinc	0.5 mg/L	0.2 mg/L	0.10 mg/L	0.10 mg/L
total suspended solids	25.0 mg/L	20.0 mg/L	15.0 mg/L	15.0 mg/L

and,

- (b) for total ammonia content (NH₃+NH₄⁺ as N), field pH and field temperature (°C) at a frequency no less than once each week;

unless otherwise specified by the Director.

23. The Licencee shall sample and analyze the liquid effluent released from the outfall of the sewage treatment facility once each week for total suspended solids and five-day biochemical oxygen demand.
24. The Licencee shall measure or estimate the total volume of liquid effluent released each month from the final discharge point of the settling pond, using flow rate measurement equipment or estimation techniques satisfactory to the Director.
25. The Licencee shall, once every month after the initial release of liquid effluent from the settling pond, except under unsafe ice conditions:
- (a) obtain representative samples of Waban Creek at a sampling station upstream of the mine site, and also at a fully mixed condition sampling station located between the settling pond outfall and the inlet to Shortie Lake; and
 - (b) analyze or measure each sample for the following characteristics and substances:

(i)	pH	pH units
(ii)	field temperature	degrees Celsius
(iii)	hardness	milligrams per litre (as CaCO ₃)
(iv)	acid-soluble copper	milligrams per litre
(v)	acid-soluble lead	milligrams per litre
(vi)	total nickel	milligrams per litre
(vii)	total iron	milligrams per litre
(viii)	total zinc	milligrams per litre
(ix)	total ammonia	milligrams per litre (NH ₃ +NH ₄ ⁺ as N)

unless otherwise specified by the Director.

26. The Licencee shall:
- (a) submit to the Director the data determined pursuant to Clauses 22, 23, 24, and 25, together with the calculated un-ionized ammonia concentration respecting sub-Clauses 22(b) and 25(b)(ix) as determined in a manner consistent with the mathematical formulas described in the "Manitoba Surface Water Quality Objectives", not later than 30 days following the end of the month in which the samples and flow rate data were collected; and
 - (b) complement the data determined pursuant to Clauses 25 and 26(a) with a comparison to the corresponding surface water quality objectives for Waban Creek consistent with the "Manitoba Surface Water Quality Objectives" for the protection of cool water aquatic organisms.

DECOMMISSIONING

27. The Licencee shall:
- (a) within two years of the date of issuance of this Licence, submit to the Director a preliminary Closure Plan for the mine and mine site with respect to the cleanup and rehabilitation of the affected areas, the control of pollutant releases from the mine site and safety concerns as may be associated with the eventual closure and abandonment of the

mine, together with plans for a progressive cleanup and rehabilitation of the site over the years preceding the expected closure of the mine, for the consideration, possible amendment and approval of the Director;

- (b) in the event of imminent closure of this mine, the Licencee shall forthwith file with the Director a detailed final Closure Plan, to replace the preliminary Closure Plan, for the consideration, possible amendment and approval of the Director; and
- (c) upon the closure of this mine, take all necessary steps to carry out the approved final Closure Plan within the time interval specified by the Director.

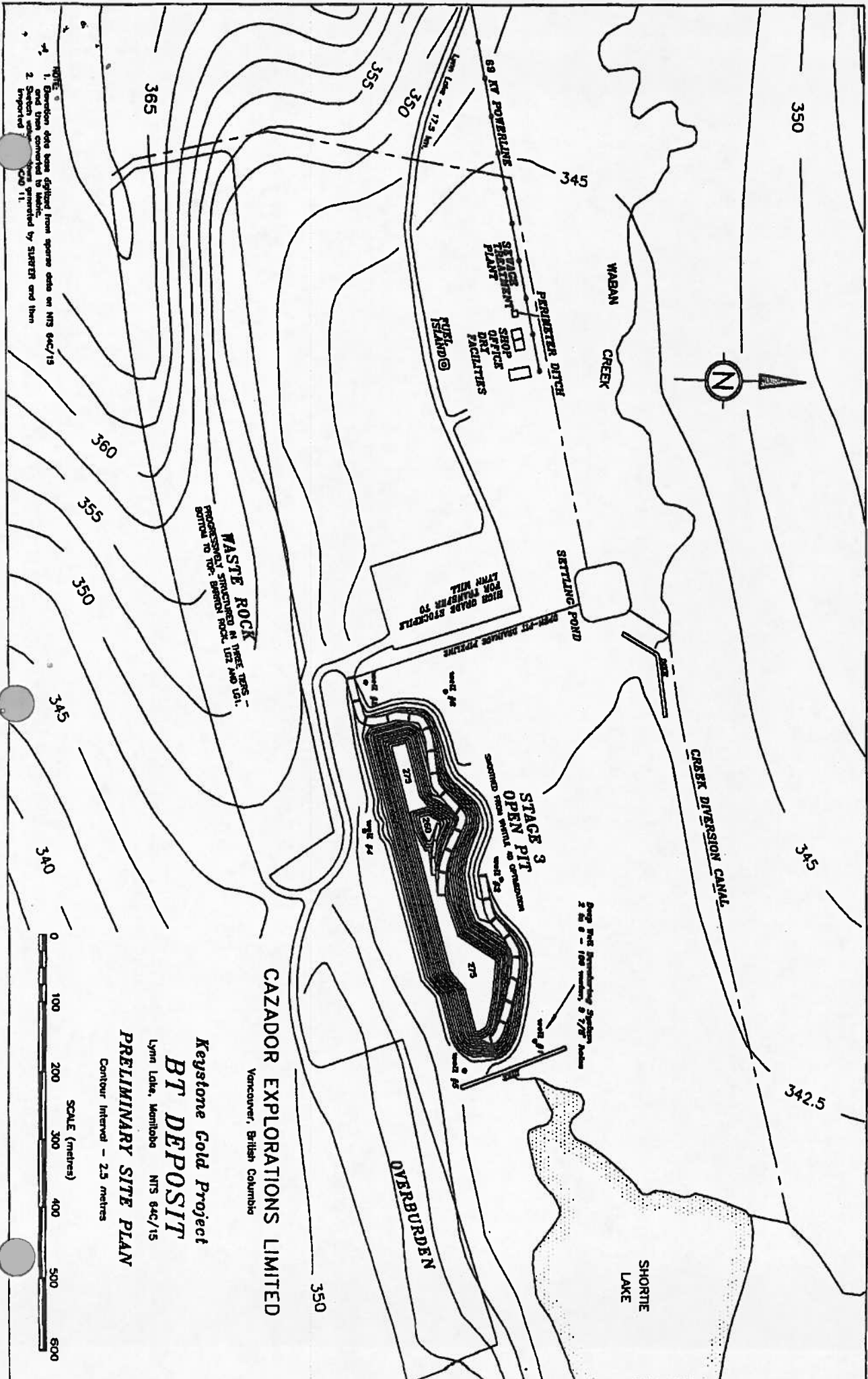
REVIEW OR REVOCATION

- 28. This Licence shall be reviewed for variation or continuation by the Director forthwith upon the receipt and completed review of the Environmental Impact Assessment requested through Clause 1.
- 29. If in the opinion of the Director the Licencee has failed or is failing to comply with any of the specifications, limits, terms or conditions set out herein, the Director may, temporarily or permanently, revoke this Licence.



Larry Strachan, P. Eng.
Director
Environment Act

APPENDIX 'A'



CAZADOR EXPLORATIONS LIMITED
 Vancouver, British Columbia

Keystone Gold Project
BT DEPOSIT
 Lynn Lake, Manitoba NTS 64C/15
PRELIMINARY SITE PLAN

NOTE:
 1. Elevation data has been digitized from sparse data on NTS 64C/15 and then converted to metric.
 2. Station coordinates were generated by SURTECH and then imported.