

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

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 SEP 12 2003 *KUM*
 MACKENZIE VALLEY
 ENVIRONMENTAL IMPACT
 REVIEW BOARD **P.O.**

FILE NUMBER: MV2001C0023
MV2001L2-0003

Friday, September 12, 2003

Vern Christensen, Executive Director
Mackenzie Valley Environmental Impact Review
Board

FAX NUMBER: 766-7074

FROM: Marilyn For Melody McLeod

Number of pages including cover 27

Attached

- Land Use Permit Type "A"**
- Issuance Letter
 - Land Use Permit Cover
 - Conditions
 - Surveillance Network Program
- Water License Type "B"**
- Issuance Letter
 - Water License Cover
 - Scope and Definitions
 - Conditions

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Mackenzie Valley Land and Water Board

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September 12, 2003

File: MV2001C0023

Mr. J. Peter Campbell
 Canadian Zinc Corporation
 Suite 1202 - 700 West Pender Street
 VANCOUVER, BC V6C 1G8

Fax: (604) 688-2043

Dear Mr. Campbell:

ISSUANCE OF A TYPE "A" LAND USE PERMIT

Attached is Land Use Permit MV2001C0023 granted by the Mackenzie Valley Land and Water Board (MVLWB or the Board) in accordance with the *Mackenzie Valley Resource Management Act*. A copy of this permit has been filed in the Public Registry at the office of the MVLWB. The MVLWB approved Land Use Permit MV2001C0023 for a period of five (5) years commencing September 10, 2003 and expiring September 9, 2008.

Please read all Conditions carefully and note that as per Land Use Permit Condition thirty-eight (38) a security deposit in the amount of \$30, 000 shall be posted with the Minister and copied to the Board prior to the start of the operation pursuant to Section 71 of the *MVRMA* and Section 32 of the Mackenzie Valley Land Use Regulations.

Please be advised that this letter, with attached permit, 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 Permit requirements are being met. All Public Registry material will be considered if an amendment to the Permit is requested.

The full cooperation of Canadian Zinc Corporation is anticipated and appreciated.

Yours sincerely,

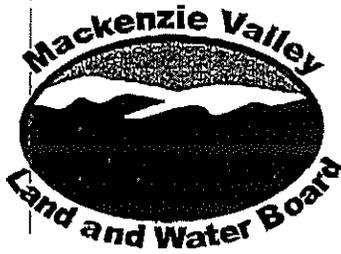
A handwritten signature in black ink, appearing to read "Melody J. McLeod".

Melody J. McLeod
 Chair

Attachments

Copied to: Ed Hornby, South Mackenzie District, DIAND, Yellowknife
 Stephen Mathyk, Regulatory Officer, MVLWB
 Sarah Baines, Regulatory Officer, MVLWB
 Distribution List of Reviewers

LAND USE PERMIT



Permit Class "A"	Permit No MV2001C0023	Amendment No
---------------------	--------------------------	--------------

Subject to the Mackenzie Valley Land Use Regulations and the terms and conditions in this Permit, authority is hereby granted to:

Canadian Zinc Corporation

Permittee

To proceed with the land use operation described in application of:

Signature J. Peter Campbell	Date March 5, 2001
Type of Land use Operation Decline Development and Metallurgical Pilot Plant	
Location 61° 33'N and 124° 48' W	

This permit may be assigned, extended, discontinued, suspended or cancelled pursuant to the Mackenzie Valley Land Use Regulations.

Dated Yellowknife this 26 day of August, 2003
at _____

Signature Chair

A handwritten signature in black ink, appearing to be "Campbell", written over a horizontal line.

Signature Witness

A handwritten signature in black ink, appearing to be "M. Anderson", written over a horizontal line.

Commencement Date
September 10, 2003

Expiry Date
September 9, 2008

NOTE

IT IS A CONDITION OF THIS PERMIT THAT THE PERMITTEE COMPLY WITH ANY OTHER APPLICABLE ACT, REGULATION, ORDINANCE BY-LAW OR ORDER. DEFAULT HEREOF MAY RESULT IN SUSPENSION OR CANCELLATION OF THIS PERMIT.

**CONDITIONS ANNEXED TO AND FORMING PART
OF LAND USE PERMIT NUMBER MV2001C0023**

Part A: Scope of Permit

1. This permit entitles Canadian Zinc Corporation to conduct the following activities:
 - a) Mining exploration and associated activities including underground decline development at the 905 metre elevation and metallurgic pilot plant at the Prairie Creek Mine. Location:

61° 33'N; 124° 48' W
2. The Permit is issued subject to the conditions contained herein with respect to the use of land for the activities and area identified in Part A, Item 1 of this permit.
3. Compliance with the terms and conditions of this permit does not absolve the Permittee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

Part B: Definitions

"Act" means the *Mackenzie Valley Resource Management Act*;

"Artesian Aquifer" means a water-bearing stratum, which when encountered during drilling operations, produces a pressurized flow of groundwater that reaches an elevation above the ground surface;

"Board" means the Mackenzie Valley Land and Water Board established under Part 4 of the *Mackenzie Valley Resource Management Act*;

"Dogleg" means clearing a line, trail or right-of-way that is curved sufficiently so that no part of the clearing beyond the curve is visible when approached from either direction;

"Drill Waste" means all materials or chemicals, solid or liquid, associated with the drilling of boreholes and includes borehole cuttings;

"Inspector" means an Inspector designated by the Minister under the *Mackenzie Valley Resource Management Act*;

"Sewage" means all toilet wastes and grey water; and

"Sump" means a man-made pit, trench hollow or cavity in the earth's surface used for the purpose of depositing waste material therein.

Part C: Conditions Applying to All Activities (the headings correspond to Subsection 26 of the Mackenzie Valley Land Use Regulations)

26(1)(a) LOCATION AND AREA

- | | | |
|----|--|-------------------|
| 1. | The Permittee shall not conduct this land use operation on any lands not designated in the accepted application. | PLANS |
| 2. | The Permittee shall use an existing campsite. | CAMP
LOCATION |
| 3. | The Permittee shall not construct parallel lines or roads unless authorized by the inspector. | PARALLEL
ROADS |

26(1)(b) TIME

- | | | |
|----|---|--------------------------------|
| 4. | The Permittee's Field Supervisor shall first contact an Inspector at (867) 695-2626 and then the Board at (867)669-0506 at least forty-eight (48) hours prior to the commencement of this land use operation. | CONTACT
INSPECTOR/
BOARD |
| 5. | The Permittee shall advise an Inspector at least ten (10) days prior to the completion of the land use operation of (a) the plan for removal or storage of equipment and materials, and (b) when final clean-up and restoration of the land used will be completed. | REPORTS
BEFORE
REMOVAL |
| 6. | The Permittee shall provide in writing to the Board and Inspector, at least forty-eight (48) hours prior to commencement of this land use operation, the following information:
(a) person, or persons, in charge of the field operation to whom notices, orders, and reports may be served;
(b) alternates; and
(c) all methods for contacting the above person(s). | IDENTIFY
AGENT |
| 7. | The Permittee shall notify an Inspector at least ten (10) days prior to backfilling any sump. | BACKFILLING
NOTIFICATION |
| 8. | The Board and/or Inspector reserve the right to impose closure of any area to the Permittee in periods when dangers to natural resources are severe. | CLOSURE |

26(1)(c) TYPE AND SIZE OF EQUIPMENT

- | | | |
|----|--|-------------------------------|
| 9. | The Permittee shall not use any equipment except of the type, size, and number that is listed in the accepted application. | ONLY
APPROVED
EQUIPMENT |
|----|--|-------------------------------|

26(1)(d) METHODS AND TECHNIQUES

- | | | |
|-----|--|------------|
| 10. | The Permittee shall plug all boreholes to the satisfaction of an Inspector as the land use operation progresses. | PLUG HOLES |
|-----|--|------------|

- | | | |
|---|---|--|
| 11. | The Permittee shall refill and restore borehole craters as the land use operation progresses. | REFILL
CRATERS |
| 12. | The Permittee shall remove or cut off and seal all drill casings at ground level immediately upon completion of drilling. | REMOVAL AND
SEALING OF
DRILL CASINGS |
| 26(1)(e) TYPE, LOCATION, CAPACITY AND OPERATION OF ALL FACILITIES | | |
| 13. | The Permittee shall not locate any sump within one hundred (100) metres of the ordinary high water mark of any water body, unless otherwise authorized in writing by an Inspector. | SUMPS FROM
WATER |
| 14. | The Permittee shall maintain freeboard of not less than one (1.0) metre in all surface sumps. | FREEBOARD OF
SUMPS |
| 15. | The Permittee shall:
(a) place and mound all material previously excavated over the sump area to ensure ponding does not occur; and
(b) overlap the material a minimum of two (2) metres beyond the edges of the existing sump wall. | BACKFILL SUMP
- OVERLAP |
| 16. | The Permittee shall ensure that the land use area is kept clean at all times. | CLEAN WORK
AREA |
| 26(1)(f) CONTROL OR PREVENTION OF PONDING OF WATER, FLOODING, EROSION, SLIDES AND SUBSIDENCE OF LAND | | |
| 17. | (a) The Permittee shall, where flowing water from bore holes is encountered, plug the bore hole in such a manner as to permanently prevent any further outflow of water; and
(b) the artesian occurrence shall be reported to the Inspector immediately. | PLUG ARTESIAN
WELLS |
| 18. | The land use operation shall not cause obstruction to any natural drainage. | NATURAL
DRAINAGE |
| 19. | The Permittee shall not cut any stream bank. | STREAM BANKS |
| 20. | The Permittee shall construct dykes and diversion ditches as authorized in writing by an Inspector. | DYKES/
DIVERSION |
| 21. | The Permittee shall install erosion control structures as the land use operation progresses. | PROGRESSIVE
EROSION
CONTROL |
| 22. | The Permittee shall slope the sides of waste material piles to a horizontal/vertical ratio of two (2) horizontal to one (1) vertical unless otherwise authorized in writing by an Inspector. | WASTE
MATERIAL PILES |

26(1)(g) USE, STORAGE, HANDLING AND ULTIMATE DISPOSAL OF ANY CHEMICAL OR TOXIC MATERIAL

23. The Permittee shall not use chemicals in connection with the land use operation that were not identified in the accepted application.

APPROVAL OF CHEMICALS

24. The Permittee shall remove all drill waste containing poisonous or persistent chemical additives to an approved disposal facility.

DRILL WASTE DISPOSAL

25. The Permittee shall not allow any drilling waste to spread to the surrounding lands.

DRILL WASTE CONTAINMENT

26. The Permittee shall dispose of all combustible waste petroleum products by incineration or removal.

WASTE PETROLEUM DISPOSAL

27. The Permittee shall dispose of all toxic or persistent substances in a manner as approved in writing by the Board.

WASTE CHEMICAL DISPOSAL

28. The Permittee shall report all spills immediately to the 24 hour Spill Report Line (867) 920-8130, which is in accordance with instructions contained in "Spill Report" form N.W.T. 1752/0593.

REPORT CHEMICAL AND PETROLEUM SPILLS

26(1)(h) WILDLIFE AND FISHERIES HABITAT

29. The Permittee shall submit a Wildlife Management Plan to be implemented upon approval by the Board before land use operations commence:

WILDLIFE MANAGEMENT PLAN

- (a) a bear response protocol that allows personnel to respond adequately to problem bears;
- (b) measures for the protection of the existing mineral lick near the minesite that provide for its continued use by wildlife with minimal disturbance;
- (c) a wildlife movement and interactions monitoring program; and
- (d) a wildlife education protocol for all employees working on site.

30. The Permittee shall maintain a wildlife-sighting log.

WILDLIFE-SIGHTING LOG

31. The Permittee shall not harass wildlife during this land use operation.

NO WILDLIFE HARASSMENT

32. The Permittee shall use food handling and garbage disposal procedures that do not attract bears.

BEAR/MAN CONFLICT

26(1)(i) STORAGE, HANDLING AND DISPOSAL OF REFUSE OR SEWAGE

33. The Permittee shall dispose of all sewage and grey water as proposed in the accepted application.

SEWAGE DISPOSAL

- | | | |
|---|---|--|
| 34. | The Permittee shall incinerate all combustible garbage and debris, except plastics, daily. | INCINERATION |
| 35. | The Permittee shall remove all scrap metal, discarded machinery, parts, barrels kegs, plastics, and building materials as specified in the accepted application. | REMOVE
WASTE
MATERIAL |
| 26(1)(j) PROTECTION OF HISTORICAL, ARCHAEOLOGICAL AND BURIAL SITES | | |
| 36. | The Permittee shall not knowingly remove, disturb, or displace any archaeological specimen or site. | DISTURBANCE
OF SITE |
| 37. | The Permittee shall immediately cease any activity which disturbs an archaeological, historical, and/or burial site and contact the Prince of Wales Northern Heritage Centre at (867) 873-7688 and then Mackenzie Valley Land and Water Board at (867) 669-0506 should an archaeological site or specimen be encountered or disturbed by any land use activity. | CONTACTS |
| 26(1)(k) OBJECTS AND PLACES OF RECREATIONAL, SCENIC AND ECOLOGICAL VALUE | | |
| 26(1)(l) SECURITY DEPOSIT | | |
| 38. | The Permittee shall deposit with the Minister a security deposit in the amount of \$30,000.00 pursuant to Section 32 of the Mackenzie Valley Land Use Regulations. | SECURITY
DEPOSIT |
| 39. | The Permittee shall be liable for any cost of damages over and above the amount of the security deposit. | LIABILITY FOR
DAMAGES |
| 40. | All costs to remediate the area under this permit are the responsibility of the Permittee. | RESPONSIBILI
TY FOR
REMEDIATION
COSTS |
| 26(1)(m) FUEL STORAGE | | |
| 41. | The Permittee shall report in writing to an Inspector the location and quantity of all fuel caches within ten (10) days after their establishment. | REPORT FUEL
LOCATION |
| 42. | The Permittee shall not place any fuel storage containers within one hundred (100) metres of the normal high water mark of any water body, unless otherwise authorized in writing by an Inspector. | FUEL BY
STREAM |
| 43. | The Permittee shall not allow petroleum products to spread to surrounding lands or into water bodies. | FUEL
CONTAINMENT |

- 44.

The Permittee shall use secondary containment for fuel storage between 410 and 4,000 litres that is authorized in writing by the Inspector.

FUEL
CONTAINMENT
- 45.

The volume of the dyked area shall be ten per cent (10%) greater than the capacity of the largest fuel container placed therein.

CAPACITY
- 46.

The Permittee shall:

 - (a) examine all fuel storage containers for leaks a minimum of once every day or as otherwise authorized by an inspector; and
 - (b) repair all leaks immediately.

CHECK FOR
LEAKS
- 47.

The Permittee shall ensure that adequate contingency plans and spill kits are in place, prior to commencement of operations, to respond to any potential spills.

SPILL
RESPONSE
- 48.

The Permittee shall submit to the Board an update of the contingency plan, for chemical and petroleum spills, if there are any changes in the operation during the life of the permit.

CONTINGENCY
PLAN
- 26(1)(n) METHODS AND TECHNIQUES FOR DEBRIS AND BRUSH DISPOSAL**
- 26(1)(o) RESTORATION OF THE LANDS**
- 49.

The Permittee shall complete all clean-up and restoration of the lands used prior to the expiry date of this Permit outlined in the Abandonment and Restoration Plan as per Appendix I, titled "Conditions Applying to Abandonment and Restoration".

CLEAN-UP
- 26(1)(p) DISPLAY OF PERMITS AND PERMIT NUMBERS**
- 50.

The Permittee shall display a copy of this Permit in each campsite established to carry out this land use operation.

DISPLAY
PERMIT
- 51.

The Permittee shall keep on hand, at all times during this land use operation, a copy of the Land Use Permit.

COPY OF
PERMIT
- 26(1)(q) MATTERS NOT INCONSISTENT WITH THE REGULATIONS**
- 52.

The Permittee shall ensure that all persons working under the authority of the Land Use Permit are aware of and will adhere to the conditions as stated in the Land Use Permit.

NOTIFICATION
TO ALL
EMPLOYEES/
CONTRACTORS
- 53.

The Permittee shall use existing lines or roads wherever possible.

EXISTING
LINES
ROADS

Canadian Zinc Corporation
Water License MV2001L2-0003 and Land Use Permit MV2001C0023

APPENDIX I: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall, within six (6) months of issuance of this License, submit to the Board for approval an Abandonment and Restoration Plan which shall take into consideration all areas referred to in Part G, Item 1 of Water License MV2001L2-0003, and Condition forty-nine (49) under Section 26(1)(o) of Land Use Permit MV2001C0023.
2. The Licensee shall address the following when completing or revising the Abandonment and Restoration Plan:
 - a) the water intake facilities;
 - b) the water treatment and waste disposal sites and facilities;
 - c) the petroleum and chemical storage areas;
 - d) any site affected by waste spills;
 - e) the natural runoff waters from the development site;
 - f) the restoration of natural drainage and the restoration of stream banks at the operation site(s);
 - g) the potential for groundwater contamination;
 - h) any facilities or areas which may have been affected by development such that potential pollution problems exist;
 - i) a phased approach and implementation schedule;
 - j) maps delineating all disturbed areas, borrow material locations and site facilities;
 - k) a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment;
 - l) a Solid Tailings Final Disposal Plan for the Solid Tailings generated by the operation of the Pilot Plant to be implemented before the expiry of the license;
 - m) the waste rock and ore storage areas,
 - n) the acid generation potential and leachability of tailings, waste rock and ore piles, and any other areas identified as having the potential to leach or be acid generating,
 - o) all lands affected by licensed undertakings, and

- p) list of facilities and infrastructure, currently existing or constructed as part of the licensed undertakings, that may be used in future proposed activities.
3. The Licensee shall revise the Plan referred to in Item 1 if not approved. The revised Plan shall be submitted to the Board for approval within six (6) months of receiving notification of the Board's decision.
 4. Notwithstanding the time schedule referred to in the Abandonment and Restoration Plan, the Licensee shall endeavour to carry out Progressive Reclamation of areas which are abandoned prior to closure of operations.
 5. The Licensee shall complete the reclamation work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.
 6. The Licensee shall review the Abandonment and Restoration Plan annually and shall modify the Plan as necessary to reflect changes in operation, technology, and results of reclamation and/or other studies. The proposed modifications shall be submitted to the Board for approval.
 7. Upon implementation of the Abandonment and Restoration Plan, the Licensee shall provide to the Board updates of all abandonment and restoration activities by March 31st of each year.
 8. Compliance with the Abandonment and Restoration Plan specified in this License does not limit the legal liability of the Licensee, other than liability arising from provisions of the Act and its Regulations.

MACKENZIE VALLEY LAND AND WATER BOARD


Witness


Chair



LICENSEE: Canadian Zinc Corporation

LICENSE NUMBER: MV2001L2-0003

EFFECTIVE DATE OF LICENSE: September
10, 2003

EFFECTIVE DATE OF SURVEILLANCE
NETWORK PROGRAM (SNP): Upon
commencement of licensed undertakings

SURVEILLANCE NETWORK PROGRAM

1. Location of Surveillance Stations

Station Number	Description
3-1	Freshwater pumphouse wetwell
3-2	905 metre portal final minewater discharge
3-3	Wastewater discharge point from Pilot Plant
3-4	Polishing Pond discharge
3-5	Catchment Pond discharge
3-6	Final discharge from Harrison Creek to Prairie Creek – confluence at culvert
3-7	870 metre portal final minewater discharge
3-8	Reagent storage facility catchment basin
3-9	Harrison Creek upstream of the reagent storage facility
3-10	Prairie Creek upstream of the Airstrip
3-11	Downstream of the confluence of Prairie Creek and Harrison Creek

2. Sampling Analysis Requirements

- a) Water at Station Number 3-1 shall be sampled every six (6) months during winter and summer and be analyzed for the following parameters:

23 Element ICP Metals Scan	Conductivity
Total Mercury	Temperature
Total Alkalinity	pH
Total Hardness	Fecal Coliforms
Suspended Solids	BOD ₅

- b) Stations 3-2 through 3-7 shall be sampled weekly during decline and pilot plant operations, and twice during the summer months after operations have ceased, and shall be analyzed for the following parameters:

23 Element ICP Metals Scan	Suspended Solids
Total Mercury	Conductivity
Total Ammonia	Field Temperature
TPH (Stations 3-5 & 3-6 only)	Field pH

- c) Station 3-8 shall be sampled two (2) times a year during open water and be analyzed for the following parameters:

23 Element ICP Metals Scan	Suspended Solids
Total Mercury	Conductivity
Total Ammonia	Field Temperature
Total Cyanide	Field pH

- d) Stations 3-9, 3-10 and 3-11 shall be sampled monthly during decline and Pilot Plant operations, and twice during the summer months after operations have ceased, and shall be analyzed for the following parameters:

23 Element ICP Metals Scan	Suspended Solids
Total Mercury	Conductivity
Total Ammonia	Field Temperature
Total Cyanide (Station 3-11 only)	Field pH

- e) Ambient weather conditions shall be recorded at the time of sampling for stations 3-2 through 3-11.

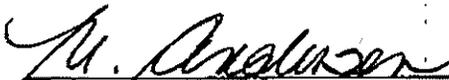
- f) More frequent sample collection may be required at the request of an Inspector.

- g) All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater", or by such other methods approved by an Analyst.
- h) All analyses shall be performed in a laboratory approved by an Analyst.
- i) A quality assurance/quality control plan, which includes both field and laboratory requirements, shall be submitted to an Analyst for approval not less than 60 days prior to the commencement of licensed undertakings.

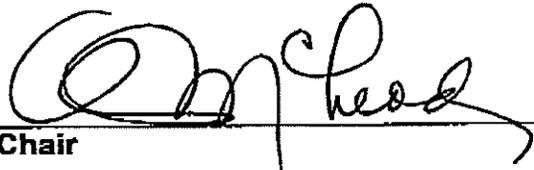
3. Reports

- a) The Licensee shall submit to the Board for Approval a report outlining options for potential SNP stations for the monitoring of the Tailings Containment Area to be implemented upon approval of Part D, item 2 of the License.
- b) The Licensee shall submit to the Board prior to commencing licensed undertakings a report describing the locations of all SNP stations including both a written description and station latitudes and longitudes given in degrees, minutes and seconds.
- c) The Licensee shall within thirty (30) days following the month being reported, submit to the Board all data and information required by the "Surveillance Network Program" including the results of the approved quality assurance plan.
- d) The Licensee shall, unless otherwise requested by an Inspector, include all of the data and information required by the "Surveillance Network Program" including the results of the approved quality assurance/quality control program in the Licensee's Annual Report, which shall be submitted to the Board on or before March 31st of the year following the calendar year being reported.

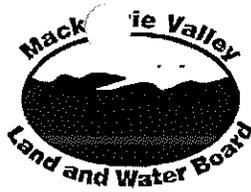
MACKENZIE VALLEY LAND AND WATER BOARD



Witness



Chair

**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

September 12, 2003

File: MV2001L2-0003

Mr. J. Peter Campbell
Canadian Zinc Corporation
Suite 1202 - 700 West Pender Street
VANCOUVER, BC V6C 1G8

Fax: (604) 688-2043

Dear Mr. Campbell:

ISSUANCE OF A TYPE "B" WATER LICENSE

Attached is Water License No. MV2001L2-0003 granted by the Mackenzie Valley Land and Water Board (MVLWB or the Board) in accordance with the *Northwest Territories Waters Act (NWT Act)*. A copy of this License has been filed in the Public Registry at the office of the MVLWB. The MVLWB approved Water License MV2001L2-0003 for a period of five (5) years commencing September 10, 2003 and expiring September 9, 2008.

Please read all Conditions carefully and note that as per Water License Condition Part B, Item 2, a security deposit in the amount of \$70,000 shall be posted with the Minister and copied to the Board prior to the start of the operation pursuant to Section 17 of the *Northwest Territories Waters Act*.

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 Board office.

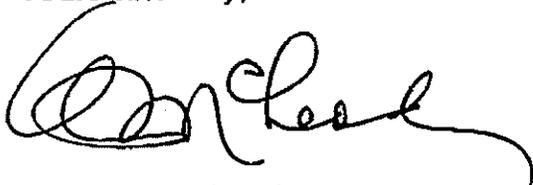
Please be advised that this letter, with attached procedures, all inspection reports, and correspondence related thereto, are part of the Public Registry, and are intended to keep all interested parties informed of the manner in which the License requirements are being met. All Public Registry material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

.../2

- 2 -

The full cooperation of Canadian Zinc Corporation is anticipated and appreciated.

Yours sincerely,



Melody J. McLeod
Chair

Attachments

Copy to: Ed Hornby, District Manager, South Mackenzie District, DIAND,
Yellowknife
David Milburn, Water Resources Division, DIAND
Stephen Mathyk, Regulatory Officer, MVLWB
Sarah Baines, Regulatory Officer, MVLWB
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:

Canadian Zinc Corporation
(Licensee)

of Suite 1202 - 700 West Pender Street, Vancouver, BC, V6C 1G8
(Mailing Address)

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: MV2001L2-0003

License Type: B

Water Management Area: Northwest Territories 03

Location: 61° 33'N and 124° 48' W

Purpose: To use water and dispose of waste and associated uses

Description: Underground Decline development to be accessed at the 905 metre elevation and operation of a metallurgical pilot plant

Quantity of water not to be exceeded: 75 cubic metres daily (4000 cubic meters for entire licensed undertaking)

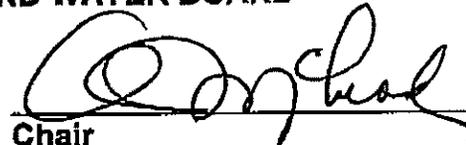
Effective Date of License: September 10, 2003

Expiry Date of License: September 9, 2008

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

MACKENZIE VALLEY LAND AND WATER BOARD


Witness


Chair

PART A: SCOPE AND DEFINITIONS

1. Scope

This License entitles Canadian Zinc Corporation to use water and dispose of waste for industrial undertakings in mining exploration and associated uses including underground decline development to be accessed at the 905 metre elevation and operation of a metallurgical pilot plant at Prairie Creek Mine, located at 61° 33' N and 124° 48' W, Northwest Territories.

This License is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the Northwest Territories Waters Act, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this License shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations.

Compliance with the terms and conditions of this License does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

In this License: **MV2001L2-0003**

"Act" means the Northwest Territories Waters Act;

"Analyst" means an Analyst designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

"Average Concentration" means the discrete average of four consecutive analytical results, or if less than four analytical results collected during a batch decant, and as submitted to the Board in accordance with the sampling and analysis requirements specified in the "Surveillance Network Program";

"Board" means the Mackenzie Valley Land and Water Board established under Part 4 of the *Mackenzie Valley Resource Management Act*;

"Catchment Pond" means the engineered structure designed to contain runoff and associated liquid waste from the Prairie Creek minesite, labelled "Run Off Settling Pond" as shown on Drawing Number 301, dated August 2000 and titled "Site Plan";

"Freeboard" means the vertical distance between water line and the lowest elevation of

the effective water containment crest on a dam or dyke's upstream slope;

"Geotechnical Engineer" means a professional engineer registered with the Association of Professional Engineers, Geologists, and Geophysicists of the Northwest Territories and whose principal field of specialization is the design and construction of earthworks in a permafrost environment;

"Grab Sample Concentration" means a single test sample collected and analyzed, as submitted to the Board in accordance with the sampling and analysis requirements specified in the "Surveillance Network Program";

"Inspector" means an Inspector designated by the Minister under Section 35(1) of the *Northwest Territories Waters Act*;

"Licensee" means the holder of this License;

"Minewater" means ground water or any water used in mining that is pumped or flows out of any underground workings or open pit;

"Minewater Settling Pond" means any natural or manmade depression designed to act as a settling facility for the purpose of separating solids from minewater;

"Minister" means the Minister of Indian and Northern Affairs Canada;

"Modification" means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

"Pilot Plant" means the Metallurgic Pilot Plant as shown in Drawing Number 302, dated December 2000 and titled "Concentrator General Arrangement Pilot Plant";

"Polishing Pond" means the engineered structure designed to contain the liquid waste from the decline development and operation process, located adjacent to the crusher and concentrator building as shown on the drawing titled "Prairie Creek Mine: Mine water Management Site Plan", dated January 31, 2003;

"Prairie Creek Valley Aquifer" means the saturated bed, formation, or group of formations in the Prairie Creek Valley which yields water in sufficient quantity to be of consequence as a source of water;

"Progressive Reclamation" means those activities conducted during the operating period of the mine to modify and reclaim the land and water to the satisfaction of the Board;

“Regulations” means Regulations proclaimed pursuant to Section 33 of the *Northwest Territories Waters Act*;

“Sewage” means all toilet wastes and greywater;

“Solid Tailings” means the solid fraction of all Waste and tailings;

“Sump” means an excavation for the purpose of catching or storing water in an underground working or at the bottom of a shaft;

“Tank Farm Facility” means the collection of storage tanks and engineered structures designed to contain runoff and liquid waste associated with these storage tanks as shown on Drawing Number 301, dated August 2000 and titled “Site Plan”;

“Tailings Containment Area” means the engineered structure designed to contain liquid and solid waste fractions from mining and milling operations as shown on Drawing Number 301, dated August 2000 and titled “Site Plan”;

“Tailings Supernatant” means the liquid fraction of all Waste and tailings;

“Waste” means waste as defined by Section 2 of the *Northwest Territories Waters Act*;

“Waste Disposal Facilities” mean all facilities designated for the disposal of Waste;

“Waste Rock” means all unprocessed rock materials, except ore and tailings, which are produced as a result of mining and milling operations;

“Waters” means any Waters as defined by Section 2 of the *Northwest Territories Waters Act*;

“Water Use” means a use of Water as defined by Section 2 of the *Northwest Territories Waters Act* and shall include freshwater from all sources and Minewater; and

“Water Use Fee” means a fee for the use of Water as defined by Section 33 of the *Northwest Territories Waters Act*.

PART B: GENERAL CONDITIONS

1. The Water Use Fee shall be paid annually in advance.
2. Prior to the use of water for mineral exploration undertakings or the disposal of waste, the Licensee shall have posted and shall maintain a security deposit in the amount of \$70,000 pursuant to Section 17(1) of the *Act* and Section 12 of the Regulations. 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 License or renewals thereof.

3. The Licensee shall adhere to all commitments as outlined in the following:
 - a) Attachments 1 and 2 of the Mackenzie Valley Environmental Impact Review Board's Report of Environmental Assessment on the Canadian Zinc Corporation, Underground Decline and Drilling and Metallurgical Pilot Plant Developments; and
 - b) The new commitments made by the Licensee in their January 31, 2003 response to the Mackenzie Valley Environmental Impact Review Board's information request.
4. The Licensee shall file an Annual Report with the Board for approval no later than March 31st of the year following the calendar year reported which shall contain the following information:
 - a) the monthly and annual quantities in cubic metres of fresh water obtained from all sources;
 - b) the monthly and annual quantities in cubic metres of each and all waste discharged;
 - c) the monthly and annual amounts in cubic metres of all Minewater and all Tailings Supernatant discharged,
 - d) the monthly and annual amounts in cubic metres of all Minewater discharged from the 870 metre portal;
 - e) the monthly and annual amounts in cubic metres of all Minewater discharged from the 905 metre portal;
 - f) a summary of modifications and/or major maintenance work carried out on the Water Supply and Waste Disposal Facilities, including all associated structures;
 - g) tabular summaries of all data generated under the "Surveillance Network Program";
 - h) a list of unauthorized discharges;
 - i) an outline of any spill training and communications exercises carried out;
 - j) a summary of any methods incorporated or planned to conserve water so that the total quantity of waste will be reduced;
 - k) a summary of any Progressive Reclamation work completed during the year and an outline of any work anticipated for the next year;

- l) a summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
 - m) any other details on water use or waste disposal requested by the Board by November 1st of the year being reported;
 - n) a description of any trenches and sumps excavated;
 - o) a description of the remaining tailings storage capacity;
 - p) a summary of disposal options for the Solid Tailings generated by the operation of the Pilot Plant, including any revisions;
 - q) a summary of the inspections required under Part B, Item 10 of the License;
 - r) any revisions to the approved Contingency Plan;
 - s) any revisions to the approved Abandonment and Restoration Plan; and
 - t) a summary of exploration and development activities as they relate to water use and waste disposal.
5. The Licensee shall comply with the "Surveillance Network Program" annexed to this License, and any amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this License.
6. The "Surveillance Network Program" and compliance dates specified in the License may be modified at the discretion of the Board.
7. 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.
8. The Licensee shall, prior to the commencement of the "Surveillance Network Program", post the necessary signs, where possible, to identify the SNP stations. All postings shall be located and maintained to the satisfaction of an Inspector.
9. The Licensee shall locate any bulk chemical storage in a secure manner ensuring no exposure of chemicals, reagents or battery coolants (glycols) to the elements. Areas of previous chemical storage shall be cleaned up to the satisfaction of an Inspector.
10. All flood protection work, including but not limited to, armouring and rip-rap placements, shall be inspected annually during the summer by a qualified Geotechnical Engineer.

11. The Licensee shall ensure a copy of this License is posted at the site of operation at all times.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all fresh water for industrial and domestic uses from existing groundwater wells fed by the Prairie Creek Valley Aquifer unless otherwise approved by the Board.
2. The daily quantity of water used for all purposes shall not exceed 75 cubic metres, with the total quantity of water used for the entire licensed undertakings not to exceed 4000 cubic meters.
3. The Licensee shall wherever possible use recycled water during the licensed undertakings.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall submit to the Board for approval within six (6) months of the issuance of the license updated Probable Maximum Flood calculations for flood elevations using at least the data available from 1975 to 1990, including data from the weather station at the Virginia Falls hydrometric gauge. In addition to these calculations a description of the adequacy of the current flood protection work shall be submitted with recommendations from a qualified Geotechnical Engineer for any improvements or modifications to be implemented upon approval by the Board.
2. The Tailings Containment Area is not to be used in conjunction with the licensed undertakings.
3. The Licensee shall store the Solids Tailings from the Pilot Plant within the existing mill thickeners until final disposal.
4. All water from the 870 metre portal shall be discharged to the Polishing Pond or to the Pilot Plant.

5. All water measured at SNP Station 3-4 and discharged by the Licensee to Prairie Creek, Harrison Creek or the Catchment Pond shall meet the following effluent quality requirements:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Total Ammonia	5.0	10.0
Total Arsenic	0.5	1.0
Total Cadmium	0.005	0.01
Total Chromium	0.15	0.3
Total Copper	0.1	0.2
Total Lead	0.15	0.3
Total Mercury	0.02	0.04
Total Nickel	0.2	0.4
Total Zinc	0.3	0.6
Total Suspended Solids	15.0	30.0
Total Petroleum Hydrocarbons	5.0	10.0

The waste discharged shall have a pH between 6.0 and 9.5, no visible sheen of oil and grease or floating solids.

6. The Licensee shall submit to the Board for approval an Effluent Treatment Options Plan outlining options to meet the effluent quality requirements from Part D, Item 9 for the water discharged from SNP Station 3-4. This plan shall be implemented before discharge of water to Prairie Creek, Harrison Creek or the Catchment Pond.
7. The Licensee shall submit to the Board for approval a geotechnical assessment carried out by a qualified Geotechnical Engineer certifying the integrity and capacity of the Polishing Pond and related water treatment facilities before they may be used in conjunction with the licensed undertakings. This report shall include as-built drawings certified by a qualified Geotechnical Engineer.
8. The Licensee shall submit to the Board for approval before the deposit of any Waste Rock/Ore a Waste Rock/Ore Pile Monitoring Plan that should include but not necessarily be limited to, the delineation of possible runoff and seepage flow paths; test sample results of runoff and possible runoff management and monitoring options.
9. The Licensee shall submit to the Board for approval a geotechnical assessment carried out by a qualified Geotechnical Engineer certifying the integrity and capacity of the Tank Farm Facility and associated containment structures before it may be used in conjunction with the licensed undertakings. This assessment shall certify that the capacity of the containment structures associated with the Tank Farm Facility is 10% greater than the volume of the largest container placed therein.
10. The Licensee shall conduct testing of water collected inside the Tank Farm berm for

Total Petroleum Hydrocarbons before discharging, and all decant water from the Tank Farm Facility berm discharged by the Licensee to any Waters shall have no visible sheen of oil and grease or floating solids, and have a Total Petroleum Hydrocarbon Maximum Average Concentration of 5.0 mg/L and a Maximum Grab Sample Concentration of 10.0 mg/L.

11. The Licensee shall notify an Inspector at least ten (10) consecutive days prior to the decant of the Tank Farm Facility.
12. The Licensee shall, sixty (60) days prior to the commencement of pumping Minewater from the decline, submit to the Board for approval a Minewater Treatment Contingency Plan. The plan shall include contingencies for the treatment of Minewater in the event it does not meet discharge criteria and there is a risk of the Minewater exceeding the Polishing Pond freeboard limit.
13. The Licensee shall install and maintain to the satisfaction of an Inspector a Catchment Pond discharge control structure prior to licensed undertakings for the control of discharge from the Catchment Pond to Harrison Creek.
14. The Licensee shall maintain a freeboard limit within the Polishing Pond to the satisfaction of an Inspector.
15. Sewage is to be disposed of to the satisfaction of an Inspector.
16. The Licensee shall ensure that any unauthorized wastes associated with the Type "B" undertakings do not enter any waters.

PART E: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written approval 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 License and the following requirements are met:
 - a) the Licensee has notified the Board in writing of such proposed modifications at least sixty (60) days prior to beginning the modifications;
 - b) such modifications do not place the Licensee in contravention of either the License or the Act;
 - c) the Board has not, during the sixty (60) days following notification of the proposed modifications, informed the Licensee that review of the proposal will require more than sixty (60) 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 may be carried out only with written approval from the Board.

3. The Licensee shall provide to the Board as-built plans and drawings of the modifications referred to in this License within ninety (90) days of completion of the modifications.

PART F: CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Licensee shall revise the Contingency Plan in accordance with the NWT Water Board's "Guidelines for Contingency Planning, January 1987" and submit it for Board approval within 60 days prior to the commencement of the undertakings.
2. If not approved by the Board, the Contingency Plan referred to in Part F; Item 1 shall be revised and resubmitted within three (3) months of receiving notification of the Board's decision.
3. The Licensee shall review the Contingency Plan annually and modify the Plan as necessary to reflect changes in operation, technology and staffing. Any proposed modifications shall be submitted to the Board for approval.
4. If, during the period of this License, an unauthorized discharge of waste 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 NWT Spill Report Line. Currently the number is (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.

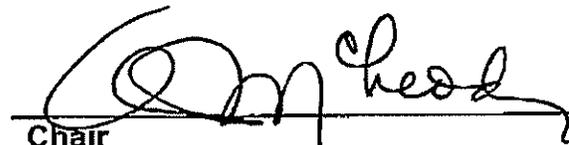
PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall comply with "Appendix I: Conditions Applying to Abandonment and Restoration".

MACKENZIE VALLEY LAND AND WATER BOARD



Witness



Chair

Canadian Zinc Corporation
Water License MV2001L2-0003 and Land Use Permit MV2001C0023

APPENDIX I: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall, within six (6) months of issuance of this License, submit to the Board for approval an Abandonment and Restoration Plan which shall take into consideration all areas referred to in Part G, Item 1 of Water License MV2001L2-0003, and Condition forty-nine (49) under Section 26(1)(o) of Land Use Permit MV2001C0023.
2. The Licensee shall address the following when completing or revising the Abandonment and Restoration Plan:
 - a) the water intake facilities;
 - b) the water treatment and waste disposal sites and facilities;
 - c) the petroleum and chemical storage areas;
 - d) any site affected by waste spills;
 - e) the natural runoff waters from the development site;
 - f) the restoration of natural drainage and the restoration of stream banks at the operation site(s);
 - g) the potential for groundwater contamination;
 - h) any facilities or areas which may have been affected by development such that potential pollution problems exist;
 - i) a phased approach and implementation schedule;
 - j) maps delineating all disturbed areas, borrow material locations and site facilities;
 - k) a proposal identifying measures by which restoration costs will be financed by the Licensee upon abandonment;
 - l) a Solid Tailings Final Disposal Plan for the Solid Tailings generated by the operation of the Pilot Plant to be implemented before the expiry of the license;
 - m) the waste rock and ore storage areas,
 - n) the acid generation potential and leachability of tailings, waste rock and ore piles, and any other areas identified as having the potential to leach or be acid generating,
 - o) all lands affected by licensed undertakings, and

- p) list of facilities and infrastructure, currently existing or constructed as part of the licensed undertakings, that may be used in future proposed activities.
- 3. The Licensee shall revise the Plan referred to in Item 1 if not approved. The revised Plan shall be submitted to the Board for approval within six (6) months of receiving notification of the Board's decision.
- 4. Notwithstanding the time schedule referred to in the Abandonment and Restoration Plan, the Licensee shall endeavour to carry out Progressive Reclamation of areas which are abandoned prior to closure of operations.
- 5. The Licensee shall complete the reclamation work within the time schedule specified in the Plan, or as subsequently revised and approved by the Board.
- 6. The Licensee shall review the Abandonment and Restoration Plan annually and shall modify the Plan as necessary to reflect changes in operation, technology, and results of reclamation and/or other studies. The proposed modifications shall be submitted to the Board for approval.
- 7. Upon implementation of the Abandonment and Restoration Plan, the Licensee shall provide to the Board updates of all abandonment and restoration activities by March 31st of each year.
- 8. Compliance with the Abandonment and Restoration Plan specified in this License does not limit the legal liability of the Licensee, other than liability arising from provisions of the Act and its Regulations.

MACKENZIE VALLEY LAND AND WATER BOARD



 Witness



 Chair