



September 13, 2012

File: S110-01-10

Chuck Hubert
Senior Environmental Assessment Officer
Mackenzie Valley Environmental Impact Review Board
Suite 200, 5102 – 50th Avenue
PO Box 938
Yellowknife NT X1A 2N7

Dear Mr. Hubert:

**Yellowknives Dene First Nation – Round 2 Information Request
Responses - Gahcho Kué Project Environmental Impact Review**

De Beers is pleased to provide the Mackenzie Valley Environmental Impact Review Board with responses to Round 2 Information Requests submitted by the Yellowknives Dene First Nation.

Sincerely,

Veronica Chisholm
Permitting Manager

Attachment

c: Randy Freeman, Director, Lands Management, Yellowknives Dene First Nation



GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

Round 2 Information Request Number: YKDFN 2.1

Source: Yellowknives Dene First Nation

Subject: Territorial Best Practices for Wildlife Effects Monitoring

Preamble

Wildlife Effects Monitoring for industrial development has been ongoing in the NWT for a number of years. YKDFN believe that the conversation regarding the *development* of a new plan should commence with a *review* on the lessons learned and best practices established for each of the other mines. As an example, the wolverine hair snagging project has emerged as a best practice for monitoring the population stability of this Valued Ecosystem Component (VEC).

Requests

1. For each VEC, please identify what components are required to be monitored such that a robust decision making process can be established. For example, caribou monitoring should include not just distribution monitoring, but also behavioural response monitoring.
2. For each VEC component, please identify what the best practice for monitoring has been developed. If the proponent does not believe a best practice has been established, please identify the methods used at each of the NWT minesites and the 'pro's and cons' of each study design.
3. Please identify what mitigations are available for each VEC should negative trends be observed.
4. As this project does not exist in isolation, please identify what cumulative effects monitoring effort the project will undertake.

Response

Response to Request 1:

There is over ten years of wildlife research undertaken by industry in the Northwest Territories (NWT), and much progress has been made in the areas of baseline data collection, impact assessment tools, effects monitoring, and study designs. A key lesson learned is that the components of wildlife monitoring must remain flexible and adaptive over the life of the Project to be effective. De Beers

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT ROUND 2 INFORMATION REQUEST RESPONSES

is in the process of expanding on the Environmental Monitoring and Management Framework (May 2012) by developing a draft Wildlife Monitoring Plan (WMP, August 2012) with input from the proposed Gahcho Kué Project's (Project) WMP working group, and an additional WMP workshop with communities and government scheduled for September 18, 2012. Following the workshop, and based on input received, De Beers will submit a draft WMP to the Panel for further consideration during the environmental impact review (EIR) process. The WMP will be finalized following the regulatory process and updated as necessary based on the adaptive management response framework as well as input from members on the adaptive management committee.

Response to Request 2:

Development of a monitoring program should begin with identifying a monitoring objective, then identifying the most suitable method to address the objective. Standardized monitoring objectives and methods for wildlife monitoring at NWT diamond mines were proposed during a series of workshops, attended by the Yellowknives Dene First Nation (Marshall 2009; Handley 2010).

Based on the EIR process and input received to date through engagement with government agencies and aboriginal communities, the focus of wildlife monitoring is on caribou, grizzly bears and wolverine, although other species, such as birds and raptors, will also be monitored and a site surveillance program will be in place to record wildlife observations at the site. A regional cumulative effects monitoring approach, consistent with best practices, has been developed by government and industry for grizzly bear and wolverine. Both involve DNA hair snagging methods to monitor the abundance and distribution of animals over large areas through time. There are also regional programs with established protocols for raptors and birds. Industry monitoring efforts for caribou have focused on habitat (zone of influence [ZOI]) and behaviour around mine sites (activity budgets).

For caribou, the advantage of ZOI monitoring is that it tests habitat model input assumptions regarding the area that caribou are less likely to use in the vicinity of mine sites. The disadvantage of ZOI is that it requires the frequent use of low level aerial flights, which further disturb target and non target wildlife species in the study area. The other disadvantage is that the monitoring does not provide

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT ROUND 2 INFORMATION REQUEST RESPONSES

information to inform adaptive management of the project and the information is not currently being used by government to manage cumulative effects. However, the information may be used in future cumulative effects assessments.

With respect to caribou behaviour, previous studies show that the amount of time spent feeding and moving is affected by factors such as weather and insect activity. Changes to behaviour with proximity to a mine are either not detectable, weak, and only occur in some years (BHPB 2004, 2010; Golder 2011). Monitoring behaviour would therefore repeat past studies that demonstrate that behavioural changes around mines are negligible. Repeating this type of monitoring can result in time and resources being allocated to studies that do not produce new results. That there is little need to repeating studies has been identified for other monitoring programs (Marshall 2009), particularly when all relevant mitigation is being applied. Alternatively, monitoring resources should be focused to issues in other areas. The application of this approach to monitoring is consistent with the application of best practice scoping principles and the need to focus environmental assessments (Ross et al. 2006; Kennady and Ross 1992).

It is also important to note that behaviour monitoring is very difficult to coordinate as enough caribou must be present in the study area to collect data and the caribou must remain present for sufficient time as well. Caribou present in the Project area are most often moving through the area; the Project is not within the summer and autumn core use area defined by Boulanger et al. (2012).

Best practices in wildlife monitoring for mines also involves conducting regular and systematic monitoring of wildlife interactions with the project site to detect potential hazards to keep people and wildlife safe. This type of monitoring provides direct feedback to the mine site operations. Another form of best practice includes supporting and incorporating Traditional Knowledge in wildlife monitoring. Monitoring the Project Winter Access Road for use by hunters has been identified by government and communities as a focus area of wildlife monitoring.

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

Response to Request 3:

An updated Wildlife Effects Mitigation and Management Plan has been circulated with the WMP working group for review and input. It will be revised as necessary and provided to the Panel following the September WMP workshop. Moreover, it is expected that the WMP will be reviewed and potentially updated through input from the adaptive management committee. This committee is an opportunity to provide reviews in the assessment of wildlife monitoring and to determine how best to move forward throughout the life of the Project.

Response to Request 4:

Cumulative effects monitoring and management are primarily the responsibility of Aboriginal Affairs and Northern Development Canada and Government of the Northwest Territories. De Beers supports cumulative effects monitoring initiatives that are led by government and will consider, through the adaptive management committee, additional opportunities to participate as they arise over time. De Beers contributed to regional wolverine monitoring in 2006 to 2007 (Boulanger and Mulders 2007; De Beers 2010, Annex F). In 2013, De Beers is planning to continue their participation in regional wolverine monitoring program as well as initiate a grizzly bear monitoring program, which are also undertaken by the Rio Tinto Diavik and BHPB Ekati mines. De Beers has also provided support to ENR to assist in tasks identified in the Barren-ground Caribou Management Strategy (ENR 2011), and has proposed to contribute to both the Program for Regional and International Shorebird Monitoring and the North American Peregrine Falcon Survey (De Beers 2012).

References

- BHPB (BHP Billiton Canada Inc). 2004. Ekati Diamond Mine 2003 Wildlife Effects Monitoring Program Report. Prepared for BHP Billiton Canada Inc. by Golder Associates Ltd. March, 2004.
- BHPB. 2010. Ekati Diamond Mine 2009 Wildlife Effects Monitoring Program Report. Prepared for BHP Billiton Canada Inc. by Rescan Environmental Services Ltd. March, 2010.

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

- Boulanger, J. and R. Mulders. 2007. Analysis of 2005 and 2006 Wolverine DNA Mark-recapture Sampling at Daring Lake, Ekati, Diavik, and Kennady Lake, Northwest Territories. Draft Report prepared for Environment and Natural Resources, Government of the Northwest Territories by Integrated Ecological Research.
- Boulanger, J., K. Poole, A. Gunn, and J. Wierzchowski. 2012. Estimating the Zone of Influence of Industrial Developments on Wildlife: A Migratory Caribou, *Rangifer tarandus groenlandicus*, and Diamond Mine Case Study. *Wildlife Biology* 18:164:179.
- De Beers (De Beers Canada Inc.). 2010. Environmental Impact Statement for the Gahcho Kué Project. Volumes 1, 2, 3a, 3b, 4, 5, 6a, 6b, 7 and Annexes A through N. Submitted to Mackenzie Valley Environmental Impact Review Board. December 2010.
- De Beers. 2012. Draft Gahcho Kué Project Wildlife Monitoring Plan. *In Preparation*.
- ENR (Environment and Natural Resources). 2011. Caribou Forever – Our Heritage, Our Responsibility. A Barren-ground Caribou Management Strategy for the Northwest Territories 2011-2015.
- Golder (Golder Associates Ltd.). 2011. Analysis of Environmental Effects from the Diavik Diamond Mine on Wildlife in the Lac de Gras Region. Prepared for Diavik Diamond Mines Inc. by Golder Associates Ltd.
- Handley, J. 2010. Diamond Mine Wildlife Workshop Monitoring Report. Prepared for Environment and Natural Resources. Yellowknife, NWT.
- Kennedy, A. J. and W.A. Ross. 1992. An Approach to Integrate Impact Scoping with Environmental Impact Assessment. *Environmental Management* 16(4): 475-484.
- Marshall, R. 2009. Diamond Mine Wildlife Workshop Monitoring Report. Prepared by Rob Marshall for Diavik Diamond Mines Inc. Yellowknife, NWT.

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

Ross, W.A., A. Morrison-Saunders, and R. Marshall. 2006. Common Sense in Environmental Impact Assessment: It Is Not As Common As It Should be. Impact Assessment and Project Appraisal 24(1): 3-22.

**GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES**

Round 2 Information Request Number: YKDFN 2.2

Source: Yellowknives Dene First Nation

Subject: History with independent oversight bodies

Preamble

As with IR 2.1, YKDFN believe that before creating a new and unclear mechanism for oversight, the Parties should consider precedent best practices, lessons learned, and elements of change advocated by the company. De Beers, along with governments and aboriginal parties, created the Snap Lake Environmental Monitoring Agency (SLEMA) through an Environmental Agreement in 2004 to provide oversight of the Snap Lake Diamond Mine. Before adopting a new scheme, YKDFN need to understand why the company chose not to pursue this model- what worked and what didn't work.

Request

1. Please explain what the company feels that SLEMA does well.
2. Please explain what aspects of SLEMA that the company believes it does poorly.

Response

It is important to clarify that no new mechanism for oversight is proposed for the proposed Gahcho Kué Project (Project). Following Environmental Assessment (EA) approval, the oversight of mineral development projects in the Mackenzie Valley is the responsibility of the Mackenzie Valley Land and Water Board (MVLWB), Aboriginal Affairs and Northern Development Canada, and the various other federal and territorial agencies that have responsibility for, or issue, authorizations for the Project.

The terms of monitoring agencies originate from environmental agreements that are negotiated privately outside of public EA and regulatory processes. This approach was discussed by the Mackenzie Valley Environmental Impact Review Board (MVEIRB) in its decision concerning the Snap Lake Mine (SLDP):

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

in the mining context there is no legal requirement for such an approach to the overall approval of the SLDP, a number of the Parties to the EA, including De Beers, INAC, GNWT and Aboriginal groups made submissions to the Board which assumed that this model would be applied. Pg 23.

A key reason identified by the MVEIRB in relying on the agency approach previously was:

that the commitments to monitoring and adaptive management made by De Beers lack detail. Pg 167.

Although the MVEIRB approved the approach for the Snap Lake Mine. it did so with certain reservation:

the Boards suggests that government give further thought to the way this model, and the negotiation of these private agreements in particular, impacts on the effectiveness of the public proceedings constituted under Part 5 of the MVRMA...Pg 24.

and,

The Board accepts ... that the negotiation of Environmental and Socio-economic Agreements also occurs outside the public process. One important function of the MVRMA EA process is to ensure that everyone with an interest or concern has access to the Board and through it to senior government decision makers. EA is a public process, accessible to all. This access contributes to the acceptability of the outcome of a development review. Legitimate questions can therefore be raised about the impact of private negotiations on the public EA process. Pg 24.

Therefore, and with the above in mind, De Beers submits rather than evaluating the effectiveness of Snap Lake Environmental Monitoring Agency (SLEMA) the

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

more appropriate inquiry ought to be to understand the origin of monitoring agencies and how progress can be made in working more effectively with communities and regulators within the existing EA and regulatory processes. Indeed, De Beers believes that its proposal and engagement approach will effectively facilitate a greater level of consultation and capacity building than the monitoring agency model and in that regard is responsive to feedback from community members.

De Beers is aware that part of the reason for the reliance on the monitoring agency approach is due to a belief that there is a regulatory gap in the Northwest Territories (NWT) with respect to wildlife and air monitoring, and also because of the view that monitoring agencies act as an independent “watchdog” with enforcement capabilities. De Beers does not share this view.

The *Mackenzie Valley Land Use Regulations* (MVLUR) are broad in their application and s. 26 specifically allows for the following:

The Board may include in a permit conditions respecting:

- (d) methods and techniques to be employed by the permittee in carrying out the land-use operation;
- (h) protection of wildlife habitat and fish habitat;
- (k) protection of objects and places of recreational, scenic or ecological value; and
- (q) any other matters not inconsistent with these Regulations, for the protection of the biological or physical characteristics of the lands.

De Beers believes that wildlife monitoring is inherently connected to the issue of wildlife habitat, and that s. 26(h) of the MVLUR provides the MVLWB the jurisdiction to impose permit conditions concerning wildlife monitoring. This is consistent with the January 17, 2002 MVLWB permit issued to Paramount Resources Ltd. where at condition 41 of that permit it states that the “Permittee shall develop and implement a wildlife monitoring program in consultation with

**GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES**

EC and the GNWT and will submit the proposed wildlife monitoring program to the Board for approval..." (see Appendix YKDFN 2.2-A). A similar permit condition was imposed by the MVLWB in its September 12, 2003 permit to Canadian Zinc Corporation at condition 29 of that approval (see Appendix YKDFN 2.2-B). De Beers also notes that the holistic view that wildlife habitat and wildlife itself are inherently connected is consistent with the way in which De Beers has approached its environmental impact statement (EIS) for the Project, and is also consistent with the feedback and traditional knowledge it has received from local communities. Accordingly, not only does the MVLWB have the jurisdiction to impose and enforce permit conditions relating to wildlife monitoring, but it also makes good sense to consider both wildlife and their habitat at the same time.

Wildlife monitoring is also consistent with MVLUR s. 26(1)(q) as it provides direct feedback into habitat management that is required to ensure environmental protection and should not be interpreted as being inconsistent with the regulations. To divorce wildlife from the biological characteristics of the land is an overly restrictive interpretation of the MVLUR and runs contrary to the principles of ecology, Traditional Knowledge, and impact assessment.

With respect to air quality management and monitoring, the impact concern is not related to air quality in and of itself. It is not an occupational health and safety concern. The impact concern is directly related to how emissions impact the land and water and therefore should be captured under the MVLWB's regulatory mandate. This is consistent with Environment Canada's position previously expressed at public hearings¹. Furthermore, condition 89 of the MVLWB permit issued to Paramount Resources Ltd. referenced above requires that the permittee adhere to flaring guidelines. This permit condition was issued pursuant to s. 26(q) of the MVLUR, which means the MVLWB views issuing such a condition with respect to air quality as being consistent with the MVLUR.

By providing the commitment to monitoring on the public record, and by backing it up as De Beers has with respect to the comprehensive baseline information

¹ Environment Canada's Intervention on the Doris North Gold Project Water Licence Application August 2007. Nunavut Water Board public hearing exhibit #12.

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

and detailed monitoring and management plans during the environmental impact review (EIR) process (rather than after approval), and for wildlife and air quality in particular, De Beers has provided a high degree of clarity and certainty on committed action for areas with perceived regulatory gaps.

Additionally, the *Mackenzie Valley Resource Management Act* (MVRMA) states as follows:

s. 134(2) A review panel shall issue a report containing a summary of comments received from the public, an account of the panel's analysis, the conclusions of the panel and its recommendation whether the proposal for the development be approved, with or without mitigative or remedial measures or a follow-up program, or rejected.

. . .

s. 135(1) After considering the report of a review panel, the federal Minister and responsible ministers to whom the report was distributed may agree to

- (a) adopt the recommendation of the review panel or refer it back to the panel for further consideration; or
- (b) after consulting the review panel, adopt the recommendation with modifications or reject it.

. . .

s.136(2) The federal Minister and responsible ministers shall carry out a decision made under section 135 to the extent of their respective authorities. A first nation, local government, regulatory authority or department or agency of the federal or territorial government affected by a decision under that section shall act in conformity with the decision to the extent of their respective authorities.

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT ROUND 2 INFORMATION REQUEST RESPONSES

This means that if the MVEIRB Panel for the Project recommends in its report that wildlife and air monitoring be carried out for the Project as proposed by De Beers, and Aboriginal Affairs and Northern Development Canada agrees, then those become requirements that De Beers must fulfill which also must be enforced by the appropriate authorities and groups. There is no need for a monitoring agency to act as an independent enforcement agency. Indeed, condition 88 of the January 17, 2002 MVLWB permit mentioned above which was issued to Paramount Resources Ltd. States as follows:

The permittee shall adhere to all commitments as outlined in Attachment 2 to the [MVEIRB]'s Report of Environmental Assessment on the Paramount Resources Ltd. Cameron Hills Gathering System and Pipeline Development.

While the monitoring agency approach may have been useful for past projects, De Beers is seeking a more appropriate approach for the Project that reflects the progressive path taken by De Beers during the EIR process, and which also sets a new standard. It is a path that has responded to the key issues noted by the Board in past decisions concerning the development of monitoring plans. It also responds to the requests of regulators and community members who wish to work directly with De Beers on adaptive management throughout the life of the Project. Such an approach is not new or unclear, but rather consistent with best practices in EA and EA follow-up. It acknowledges and respects the independent public decision-making authority and function of both the MVEIRB and MVLWB as established in legislation, and also the function and capacity of the MVLWB in particular to independently regulate the Project following the EIR. Requiring a monitoring agency as a condition of approval would provide a significant disincentive for future proponents to take the proactive path carved by De Beers for the Project by sending a signal to all future developers that monitoring agencies are de facto requirements in the NWT regardless of the quality of work and detailed commitments provided on the record by reputable proponents. Perpetuating the monitoring agency model also fuels the belief that the NWT public EA and regulatory regimes are not capable of meeting their objectives, which is simply not the case, and discourages participation in the processes.

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

The role of a monitoring agency in the review of reports and management plans, hearing community concerns, and making recommendations to the company and government, in the case of the Project, duplicates not only the actions, responsibilities and commitments of De Beers, but also that of the public and independent review processes established pursuant to the MVRMA, and other regulatory instruments. Coupled with the best practices approach demonstrated by De Beers, a monitoring agency is not required and redundant in the circumstance of to the Project.

In addition to the annual community engagement plans undertaken by De Beers, the adaptive management committee adds more value by increasing the understanding and capacity of all parties by building on the direct working relationships established to date. De Beers believes that its proposal will then more effectively include Traditional Knowledge in the Project through improved communication and direct working relationships.

APPENDIX YKDFN 2.2-A

**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

January 17, 2002

File: MV2000P0055

Ms. Shirley Maaskant
Paramount Resources Ltd.
4700 Bankers Hall West
888 3rd Street SW
CALGARY AB T2P 5C5

FAX: (403) 262-7994

Dear Ms. Maaskant:

ISSUANCE OF A TYPE "A" LAND USE PERMIT

Attached is Land Use Permit MV2000P0055 granted by the Mackenzie Valley Land and Water Board (MVLWB) in accordance with the *Mackenzie Valley Resource Management Act (MVRMA)*. A copy of this permit has been filed in the Public Registry at the office of the MVLWB. The Board approved Land Use Permit MV2000P0055 for a period of five (5) years commencing January 18, 2002 and expiring January 17, 2007.

Please read all conditions carefully and note that as per Land Use Permit Condition fifty-four (54), a security deposit in the amount of \$100,000 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 when the Permit comes up for renewal or amendment.

The full cooperation of Paramount Resources Ltd. is anticipated and appreciated.

Yours sincerely,

A handwritten signature in cursive script that reads "Laura Johnston".

for Melody J. McLeod
Chair

Attachments

Copied to: Ed Hornby, South Mackenzie District, DIAND, Yellowknife
Janpeter Lennie-Misgeld, Regulatory Officer, MVLWB
Distribution List

LAND USE PERMIT



Permit Class	Permit No	Amendment No
'A'	MV2000P0055	

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

Paramount Resources Ltd.

Permittee

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

Signature Shirley Maaskant	Date April 20, 2001
Type of Land use Operation Pipeline and Gathering System	
Location Cameron Hills	

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

Dated at Yellowknife, NT this 17th day of January, 2002

AI
Signature Chair

Signature Witness

Laura Johnston

[Signature]

Commencement Date
January 18, 2002

Expiry Date
January 17, 2007

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 MV2000P0055**

Part A: Scope of Permit

1. This permit entitles **Paramount Resources Ltd.** to conduct the following activities:
 - a) Construction, operation, maintenance and associated activities of a gathering system and pipeline located within the following grid area:
60° 00' to 60° 20' N; 117° 15' to 117° 50' 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*;

"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.

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

"Sewage" means all toilet wastes and grey water;

"Sewage Disposal Facilities" means sump(s) and/or sewage collection tank(s) designed to hold sewage;

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

"EC" means Environment Canada

"GNWT" means Government of the Northwest Territories

"NEB" means National Energy Board

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 locate all camps on gravel, sand or other durable land. | CAMP
LOCATION |
| 3. | The Permittee shall locate all lines, trails and rights-of-way to be constructed parallel to water bodies a minimum of one hundred (100) metres from the ordinary high water mark except at crossings, unless otherwise approved by the Board. | PARALLELING
STREAMS |

26(1)(b) TIME

- | | | |
|-----|---|--------------------------------|
| 4. | The Permittee's Field Supervisor shall contact an Inspector at (867) 874-6995 and then the Board (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, including:
(a) the plan for removal or storage of equipment and materials
(b) when final clean-up and restoration of the land used will be completed. | REPORTS
BEFORE
REMOVAL |
| 6. | The Permittee shall submit a progress report to the Board and Inspector every thirty (30) days during this land use operation. | PROGRESS
REPORT |
| 7. | The Permittee shall notify an Inspector at least ten (10) days prior to backfilling any sump. | BACKFILLING
NOTIFICATION |
| 8. | The Permittee shall not conduct any overland movement of equipment and vehicles, other than All Terrain Vehicles, after 0800 hours local time on April 1, unless otherwise authorized in writing by an Inspector. | SHUT-DOWN
DATE |
| 9. | The Board, for the purpose of this operation, designates April 1, as spring break-up. | SPRING
BREAK-UP |
| 10. | The Permittee shall remove all ice bridges prior to spring break-up or completion of the land use operation. | REMOVE ICE
BRIDGE |
| 11. | The Permittee shall remove all snow fills from stream crossings prior to spring break-up or completion of the land use operation unless otherwise approved in writing by an Inspector. | REMOVE SNOW
FILLS |
| 12. | The Board reserves the right to impose closure of any area to the Permittee in periods when dangers to natural resources are severe. | CLOSURE |

13. The Permittee shall prior to spring break-up, complete all temporary camp sump closures, snow fill and ice bridge removals, brush and timber disposal, erosion control activities and all other restoration ordered in writing by an Inspector, unless as otherwise approved in writing by an Inspector. RESTORATION

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

14. 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

15. The Permittee shall construct and maintain winter roads with a minimum of four (4) centimeters packed snow at all times during this land use operation. If this cannot be done, then the Permittee shall construct Ice Roads in a manner authorized by an Inspector. SNOW ROADS/ ICE ROADS
16. The Permittee shall not clear areas larger than identified in the accepted application. MINIMIZE AREA CLEARED
17. The Permittee shall not erect camps or store material on the surface ice of streams. STORAGE ON ICE
18. The Permittee shall not store material other than that required for immediate use on the ice surface of water bodies. STORAGE ON ICE

26(1)(e) TYPE, LOCATION, CAPACITY AND OPERATION OF ALL FACILITIES

19. The Permittee shall not locate any sump within one hundred (100) metres of the ordinary high water mark of any water body. SUMPS FROM WATER
20. The Permittee shall maintain freeboard of at least one (1.0) meter in all sumps. FREEBOARD OF SUMPS
21. The Permittee shall, using a backhoe:
 (a) restore all camp sumps by mixing the sump fluid with excavated material until solid enough that it can not flow. A cap of excavated material will then be placed over the sump. This cap shall extend a minimum of one and a half (1.5) meters above the contiguous surrounding ground surface and overlap the edges of the sump by a minimum of two (2) meters. SUMP RESTORATION BY MIXING

26(1)(f) CONTROL OR PREVENTION OF PONDING OF WATER, FLOODING, EROSION, SLIDES AND SUBSIDENCE OF LAND

- | | | |
|-----|--|---|
| 22. | The Permittee shall slope the sides of excavations and embankments except in solid rock to a horizontal/vertical ratio of two (2) horizontal to one (1) vertical to minimize land area disturbance or as required by applicable job safety requirements. | EXCAVATIONS
AND
EMBANKMENTS |
| 23. | The Permittee shall minimize approach grades on all winter lake and/or stream crossings. | MINIMIZE
APPROACH |
| 24. | The Permittee shall maintain a minimum vegetated buffer of 100 meters from the normal high water level and 25 meters above the top of the bank of any river or stream to any proposed gravel excavation site, unless otherwise approved in writing by the Board. | GRAVEL
EXCAVATION
BUFFER |
| 25. | The Permittee shall ensure no gravel excavation occurs below the water table and high water mark of the Cameron River. | GRAVEL
EXCAVATION |
| 26. | The land use operation shall not cause obstruction to any natural drainage. | NATURAL
DRAINAGE |
| 27. | The Permittee shall not cut any stream bank except as stated in the accepted application. | STREAM
BANKS |
| 28. | The Permittee shall not use any material other than water in the construction of ice bridges. | ICE BRIDGE
MATERIAL |
| 29. | The Permittee shall not allow any ice bridge to hinder the flow of water. | ICE BRIDGE |
| 30. | The Permittee shall not use the bed of streams for access routes except for the purpose of crossing the streams. | STREAM BEDS
- ACCESS |
| 31. | The Permittee shall construct berms and/or ditches across the right-of-way at intervals of not less than thirty (30) metres on slopes exceeding fifteen per cent (15%) and as required on slopes less than fifteen per cent (15%) prior to the commencement of the first spring break-up after construction of the right-of-way. | EROSION
CONTROL
RIGHTS-OF-
WAY |
| 32. | The Permittee shall install erosion control structures as the land use operation progresses unless otherwise authorized by an Inspector. | PROGRESSIVE
EROSION
CONTROL |
| 33. | The Permittee conduct site preparations to prevent rutting of the ground surface as directed by an Inspector. | PREVENTION
OF RUTTING |
| 34. | The Permittee shall suspend overland travel of equipment or vehicles if significant rutting occurs or as otherwise approved by an Inspector. | SUSPEND
OVERLAND
TRAVEL |
| 35. | The Permittee shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging. | VEHICLE
MOVEMENT
FREEZE-UP |

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

36. The Permittee shall not use chemicals in connection with the land use operation that were not identified in the accepted application. APPROVAL OF CHEMICALS

37. 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

38. The Permittee shall minimize damage to wildlife and fish habitat in conducting this land use operation. HABITAT DAMAGE

39. The Permittee shall construct and maintain all structures placed in streams frequented by fish, in such a manner that will not obstruct passage of fish. FREE FISH MOVEMENT

40. The Permittee shall not obstruct the movement of fish while conducting this land use operation. FREE FISH MOVEMENT

41. The Permittee shall develop and implement a wildlife monitoring program in consultation with EC and the GNWT and will submit the proposed wildlife monitoring program to the Board for approval within 30 days of project commencement. WILDLIFE MONITORING PROGRAM

42. The Permittee shall, to the greatest extent possible, leave breaks in windrows over existing game trails and crossings to facilitate wildlife movements. WINDROW BREAKS

43. The Permittee shall not destroy or damage beaver dams. BEAVER DAMS

44. The Permittee shall not destroy or damage beaver lodges. BEAVER LODGES

45. The Permittee shall not destroy or damage muskrat lodges. MUSKRAT LODGES

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

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

47. The Permittee shall remove all non-combustible garbage, including plastics from the land use area to a disposal site as specified in the accepted application. REMOVE GARBAGE

48. The Permittee shall incinerate all combustible garbage and debris, except plastics. INCINERATION

49. The Permittee shall use a forced-air fuel-fired incinerator to burn all combustible garbage except plastics. INCINERATORS

- | | | |
|-----|---|-----------------------------|
| 50. | The Permittee shall keep all garbage and debris in a covered metal container until disposed of. | GARBAGE
CONTAINER |
| 51. | The Permittee shall remove all scrap metal, discarded machinery, parts, barrels and kegs, buildings and building material to an approved disposal facility. | REMOVE
WASTE
MATERIAL |

26(1)(j) PROTECTION OF HISTORICAL, ARCHAEOLOGICAL AND BURIAL SITES

- | | | |
|-----|--|--|
| 52. | The Permittee shall immediately cease any activity which disturbs an archaeological, historical, and/or burial site and contact the Mackenzie Valley Land and Water Board at (867) 669-0506 should an archaeological site of specimen be encountered or disturbed by any land use activity. | CONTACTS |
| 53. | The Permittee shall submit to the Board for approval within 30 days of project commencement, a heritage resource discovery process report which will incorporate concerns of aboriginal communities and will also include the hiring of local environmental monitors to identify potential heritage discoveries. | HERITAGE
DISCOVERIES
AND
MONITORING |

26(1)(k) OBJECTS AND PLACES OF RECREATIONAL, SCENIC AND ECOLOGICAL VALUE

26(1)(l) SECURITY DEPOSIT

- | | | |
|-----|--|--------------------------|
| 54. | The Permittee shall deposit with the Minister a security deposit in the amount of \$ 100, 000 pursuant to Section 32 of the Mackenzie Valley Land Use Regulations. | SECURITY
DEPOSIT |
| 55. | The Permittee shall be liable for any cost of damages over and above the amount of the security deposit. | LIABILITY FOR
DAMAGES |

26(1)(m) FUEL STORAGE

- | | | |
|-----|--|----------------------------|
| 56. | 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 |
| 57. | The Permittee shall not allow petroleum products to spread to surrounding lands or into water bodies. | FUEL
CONTAINMENT |
| 58. | The Permittee shall not place any fuel storage containers within one hundred (100) metres of the normal high water mark of any water body. | FUEL BY
STREAM |
| 59. | The Permittee shall construct an impermeable dyke around each stationary container which contains hydrocarbons, (including associated water) or group of stationary containers where any one container has a capacity exceeding 4000 liters, as approved by the board. | DYKE
FUEL
CONTAINERS |

60. The volume of the dyked area shall be ten per cent (10%) greater than the capacity of the largest fuel container placed therein. CAPACITY
61. A competent steel double-walled tank will be deemed to satisfy requirements of an impermeable dyke. DOUBLE-WALLED TANK

26(1)(n) METHODS AND TECHNIQUES FOR DEBRIS AND BRUSH DISPOSAL

62. The Permittee shall dispose of all debris cleared from rights-of-way, quarry/borrow sites and staging areas by:
 (a) windrowing the debris and brush to the side of the line or clearing and on the rights-of-way ; and
 (b) making breaks in the windrow of at least seven (7) metres wide at intervals of not more than three hundred and thirty (330) metres. BRUSH DISPOSAL
63. The Permittee shall dispose of all debris and brush from the airstrip, camps, and central battery by burning. BURN BRUSH
64. The Permittee shall progressively complete disposal of all brush. PROGRESSIVE DISPOSAL

26(1)(o) RESTORATION OF THE LANDS

65. The Permittee shall establish re-vegetation on all areas stripped to mineral soil during this land use operation, to a minimum of seventy per cent (70%) ground cover, within one (1) year of the completion of the operation or as otherwise approved by an Inspector. RE-VEGETATE STRIPPED AREA
66. When seeding is done the Permittee will use Certified Canada #1 seed and the appropriate seed certificates will be made available to an Inspector. SEEDING
67. Where organic soil has been stripped from quarry/burrow sites, the central battery, temporary camps and staging areas it shall be saved by windrowing or stockpiling it on the up slope side of the clearing. SAVE ORGANIC SOIL
68. Where organic soil has been stripped from quarry/borrow sites, temporary camps and staging areas it shall be placed over the disturbed areas prior to the conclusion of project activities. REPLACE ORGANIC SOIL
69. The Permittee shall develop a re-vegetation plan for areas that require remedial action in consultation with the GNWT and these plans will be submitted to the MVLWB, NEB, and GNWT. RE-VEGETATION PLAN

- | | | |
|-----|--|--|
| 70. | The Permittee shall develop and implement, a re-vegetation monitoring program to assess;
a) vegetation recovery in both seeded and un-seeded areas of disturbance.
b) composition of indigenous and non-indigenous species in seeded areas compared to unseeded areas.
c) the proposed monitoring program will be submitted to the Board for approval within one hundred twenty (120) days of project commencement. | RE-
VEGETATION
MONITORING
PROGRAM |
| 71. | The Permittee shall complete all clean-up and restoration of the lands used prior to the expiry date of this Permit. | CLEAN-UP |
| 72. | Stripping of overburden must be approved in writing by an Inspector prior to commencement of the quarrying operation. | STRIPPING OF
OVERBURDEN |
| 73. | Re-vegetation and restoration will be progressive throughout construction and during operation of the constructed facility. | PROGRESSIVE
RESTORATION |

26(1)(p) DISPLAY OF PERMITS AND PERMIT NUMBERS

- | | | |
|-----|--|-----------------------------|
| 74. | The Permittee shall display a copy of this Permit in each campsite established to carry out this land use operation. | DISPLAY
PERMIT |
| 75. | The Permittee shall keep on hand, at all times during this land use operation, a copy of the Land Use Permit. | COPY OF
PERMIT |
| 76. | The Permittee shall display the Land Use Permit number on all vehicles and equipment. | DISPLAY
PERMIT
NUMBER |

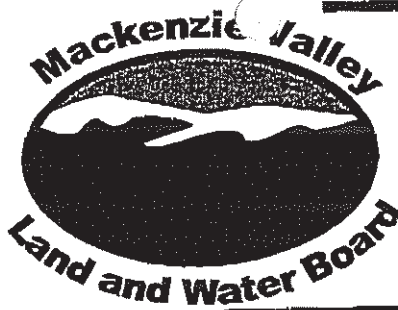
26(1)(q) MATTERS NOT INCONSISTENT WITH THE REGULATIONS

- | | | |
|-----|--|----------------------------|
| 77. | The Permittee shall not remove any material from below the ordinary high water mark of any water body except as stated in the accepted application. | WORK IN
WATER
BODIES |
| 78. | The Permittee shall submit to the Board for approval;
a) a baseline environmental noise survey to identify ambient noise levels in the areas of the processing facility and substation sites prior to construction or as otherwise approved by the Board.
b) within 60 days of project commencement, a noise survey indicating noise levels resulting from project operations in the areas of the processing facility and substation sites including conclusions and, if required, mitigation measures
c) Additional noise surveys to identify changes in noise levels due to project modifications or changes to operations. | NOISE
SURVEYS |
| 79. | The Permittee shall address impacts identified in the Traditional Knowledge Study, conducted by Paramount Resources Ltd., and encountered during project operations by including and implementing appropriate mitigative measures throughout the lifespan of the project. | TRADITIONAL
LAND USE |

- | | | |
|-----|---|--|
| 80. | The Permittee shall ensure that affected aboriginal communities;
(a) are provided a copy of the Traditional Knowledge Study, conducted by Paramount Resources Ltd.
(b) have an opportunity to comment on the Traditional Knowledge Study and proposed mitigation measures. | TRADITIONAL
LAND USE
STUDY |
| 81. | The Permittee shall submit to the Board and the GNWT:
a) Within six months of project commencement - Report documenting and describing each permafrost location encountered, including, depth, extent, terrain, vegetation re-establishment and heat effects to soils and vegetation.
b) Annually by October 1st - Report documenting results of permafrost monitoring which will include, depth, extent, terrain, vegetation re-establishment, thaw settlement, trench subsidence, evidence of floating pipe, vegetation re-establishment, and heat effects to soils and vegetation. | PERMAFROST
MONITORING
AND
REPORTING |
| 82. | 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 |
| 83. | The Permittee shall, while preparing access roads and right-of-ways, make every effort to avoid covering or destroying traps or snares that may be found along these routes. | TRAPS
PROTECTION |
| 84. | The Permittee shall restore any trails used by trappers or hunters along access routes and right-of-ways by slashing any and all trees that may fall across these paths or trails and by removing any other obstructions such as snow piles or debris that may be pushed across the trails. | TRAILS
RESTORATION |
| 85. | 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 |
| 86. | The Permittee shall not conduct activities on this land use permit within 300 metres of a cabin used for traditional activities including trapping, hunting or fishing. | AVOID CABINS |
| 87. | The Permittee shall conduct the operation, perform the mitigations and remedial measures, and hold consultations with government agencies and aboriginal communities as outlined in Attachment 1 to the Mackenzie Valley Environmental Impact Review Board's Report of Environmental Assessment on the Paramount Resources Ltd. Cameron Hills Gathering System and Pipeline Development | AGREED
PRACTICES |

88. The Permittee shall adhere to all commitments as outlined in Attachment 2 to the Mackenzie Valley Environmental Impact Review Board's Report of Environmental Assessment on the Paramount Resources Ltd. Cameron Hills Gathering System and Pipeline Development. AGREED COMMITMENTS
89. The Permittee shall adhere to Alberta Energy and Utilities Board (AEUB) Guide 60 Flaring Guidelines. FLARING GUIDELINES
90. 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

APPENDIX YKDFN 2.2-B



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



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

Note: The document accompanying this transmission contains confidential information intended for a specific individual and purpose. The information is private, and is legally protected by law. If you are not the intended recipient, you are hereby notified that any disclosure, copying, distribution, or the taking of any action in reference to the contents of this telecopied information is strictly prohibited. If you have received this communication in error, please notify the above person immediately by telephone and return the

**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: 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,

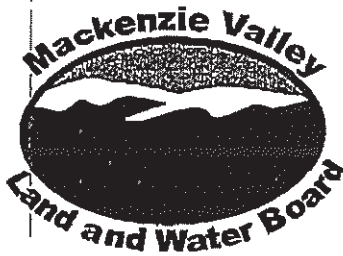
A handwritten signature in dark ink, appearing to read "Melody J. McLeod".

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	Permit No	Amendment No
"A"	MV2001C0023	

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 dark ink, appearing to be "J. Peter Campbell", written over a horizontal line.

Signature Witness

A handwritten signature in dark 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:

(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. | WILDLIFE
MANAGEMENT
PLAN |
| 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. RESPONSIBILITY 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.

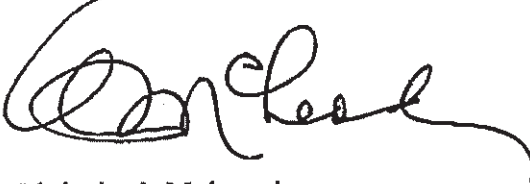
Please be advised that this letter, with attached procedures, all inspection reports, and correspondence related thereto, are part of the Public Registry, and are intended to keep all interested parties informed of the manner in which the License requirements are being met. All Public Registry material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

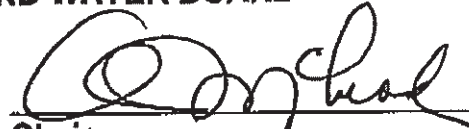
Effective Date of License: September 10, 2003

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

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

Round 2 Information Request Number: YKDFN 2.3

Source: Yellowknives Dene First Nation

Subject: Resources and Commitment for TK inclusion and monitoring

Preamble

Traditional Knowledge and western science are supposed to be viewed equally by the regulatory and review processes, but communities clearly feel as though this is treated only as an afterthought.

Request

1. Please provide figures that indicate the value of expenditures related to western science (water testing, caribou surveys, etc.) for each of the Snap Lake Mine and Gahcho Kue mine. For Snap Lake, the proponent should provide these values as 'permitting' (before the LWB permit) and 'operations'
2. For the future of Gahcho Kue, please provide clear indication as to the minimum resources, and details of potential related programs, that will be available for:
 - a. The collection of additional traditional knowledge
 - b. Incorporation traditional knowledge monitoring into monitoring programs such as the AEMP and WEMP
 - c. Explain how traditional knowledge monitoring will factor into the Adaptive Management plan.

Response

Response to Request 1:

De Beers is required to carry out very specific site based scientific programs to meet the Environmental Impact Statement (EIS) terms of reference and regulatory requirements. The costs associated with those programs are subject to confidential agreements. Likewise, the Traditional Knowledge (TK) studies De Beers has entered into with interested aboriginal groups are also confidential and, as such, De Beers cannot divulge the costs associated with the TK studies, community visits, site workshops, and capacity funding either.

**GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES**

Traditional knowledge on the Snap Lake Mine and the proposed Gahcho Kué Project (Project) is gained through a number of De Beers' initiatives including programs, engagement activities and agreements that are funded by De Beers. A simple accounting exercise (i.e., comparison of expenditures between western science and TK) as requested by the Yellowknives Dene First Nation (YKDFN) does not provide a meaningful or productive discussion on how TK is and/or should be incorporated into existing or future projects. De Beers asserts that a more meaningful or relevant exercise is to focus on the opportunities for aboriginal communities, including YKDFN, to provide input on existing and proposed monitoring plans and programs. Details on those opportunities are provided in the response below.

Response to Request 2:

For the Project, De Beers believes there have been and continue to be opportunities for aboriginal communities to participate and provide input on, for example, the collection of additional TK. De Beers is in the process of finalizing a TK Agreement with YKDFN and has encouraged YKDFN to include recommendations on additional monitoring.

It is the understanding of De Beers that meaningful incorporation of TK into such programs as the Wildlife Effects Monitoring Plan (WEMP) or Aquatic Effects Monitoring Program (AEMP) requires a collaborative working relationship or partnerships between the TK holders and De Beers and it must be viewed as on-going dialogue that continues over the course of the Project. As part of this partnership, De Beers views its role and responsibilities, as referenced in the *Draft Terms of Reference for the Adaptive Management Advisory Committee* submitted to MVEIRB Public Registry on June 29, 2012, to include the following:

- responding to community and TK related concerns as carried out in the assessment;
- sharing information on how community and TK related concerns can be address through proposed monitoring studies;
- providing opportunities for TK holders to provide input into proposed plans and programs;

GAHCHO KUÉ PROJECT ENVIRONMENTAL IMPACT STATEMENT
ROUND 2 INFORMATION REQUEST RESPONSES

- implementing the monitoring programs with opportunities for aboriginal community involvement;
- reporting on and communicating the results in an appropriate and timely manner that is in a format that is community-friendly or meaningful;
- coordinate community site visits and encouraging participation in those visits by Elders, hunters and trappers to share information on site operations and receive feedback;
- providing opportunity for TK holders to propose TK studies;
- supporting TK studies and preservation projects;
- ensuring that community leaders are consulted in the development of engagement plans to facilitate meaningful engagement; and
- implementing adaptive management and mitigation measures as required based on monitoring results.

De Beers considers it to be the responsibility of TK holders or their designates, including the YKDFN, to take advantage of those opportunities by providing input through participation in working groups, workshops, meetings (e.g., community), site visits, document reviews, and other forums that may arise from, for example, the proposed Adaptive Management Advisory Committee.