

October 20, 2008

Mr. Alistair MacDonald
A/Senior Environmental Assessment Officer
Mackenzie Valley Environmental Impact Review Board
200 Scotia Centre
Box 938, 5102-50th Ave
Yellowknife, NT X1A 2N7

Dear Mr. MacDonald:

Canadian Zinc Corporation – Prairie Creek Mine EA0809-002
Scoping Comments.

The Government of the Northwest Territories (GNWT) would like to submit the attached scoping comments and recommendations for consideration by the Board.

According to reports issued by Canadian Zinc Corporation (CZN) the proposed project will operate for approximately fourteen years, with a production rate of 1,200-1,300 tonnes/day. Transport of personnel to and from the mine will be via chartered aircraft and a 180 km winter road will serve to transport mine material to and from the Liard highway during the winter months. The project is adjacent to the Nahanni National Park Reserve and has had existing infrastructure in place since 1982.

1. What biophysical, socio-economic and cultural issues should be considered during the environmental assessment and why?

BIOPHYSICAL

The GNWT believes that issues related to species at risk, specifically Woodland Caribou, wildlife safety as it relates to the winter road, wildlife management, and wildlife cumulative effects need to be addressed in this Environmental Assessment.

Species at Risk - Woodland Caribou, Northern Mountain Population:

Woodland caribou, Northern Mountain Population, are subject to increased hunting pressure as a result of increased road access from mineral exploration projects in the Northwest Territories and the Yukon Territory (Species at Risk in the Northwest Territories, 2008 Edition). Data from recent surveys estimate the calf:cow ratio for the

Nahanni herd complex was below the value necessary to balance natural mortality. 30-35 calves:100 cows indicates a stable or increasing herd¹, according to Gunn *et al.* 2002, in 2001 the South Nahanni Herd (part of the Nahanni Herd complex thought to winter in the Prairie Creek area) had a ratio of 10:100. In 2000 the ratio was estimated at 15:100, (Gunn and Gullickson, 2001). More recent information indicates that little is known about the actual composition or status of the herd. However, the herd is under considerable pressure from hunting. A herd that is stable can sustain a harvest of ~3%². In the 2001 survey it was estimated that 4-5% of the South Nahanni herd was harvested annually, a level that is not sustainable given the calf:cow ratio evidence for a herd that does not have a stable population. The herd may also be under increased pressure from Yukon hunters. Hunting quotas for some herds in the Yukon Territory have been decreased³. This, combined with improved road access to the Nahanni Complex range, will likely increase the hunting pressure on the herd.

This project is located within the range of the Nahanni Complex. Woodland caribou – Northern Mountain Population, including the Nahanni Complex, are listed as a species of special concern under the *Species at Risk Act* (2002). The herd has an estimated size of 940-1140 animals (Gunn *et al.* 2002). It is for these reasons that Wildlife Management, with a focus on boreal caribou, needs to be addressed in this EA. Prior to commencing development in the project area, the proponent needs to have a comprehensive plan for monitoring and mitigating the potential effects the development may have on the Nahanni Complex caribou herd.

Wildlife Safety and the Winter Road

CZN has indicated that approximately 4800 hauls/year will take place on the proposed all weather road. There are 21 vehicles. This equates to ~3trips/day/truck. Given these figures, a 24-hour/day haulage is likely. Therefore, for a period of two and a half months during mid to late winter, continuous traffic and noise will occur along the road. Winter road use coincides with the winter range of the Nahanni Herd Complex, and given the high volume of traffic, ENR recommends that the interaction between wildlife and the winter road be addressed in this EA. This may include (at minimum):

- Development of a Wildlife Management Plan designed to
 - protect caribou on or near the winter road to establish safety protocols to be followed by drivers, including waste management protocols,
 - protect all wildlife that may interact with activities on the road,
 - address methods of disposing of carcasses that may be on the road.
- A safety assessment of the road to determine the types of trucks that should be used for haulage, and to establish speed limits,
- Establishing a Wildlife Reporting System to record and report wildlife on the road, that is to be used by drivers in communication with each other, and with ENR regional biologists.

¹ <http://www.yfwcm.ca/species/caribou/guidelines.php>

² *ibid*

³ http://www.environmentyukon.gov.yk.ca/pdf/hunting_regs_eng2008.pdf

- Establish Protocols for monitoring and managing public access (if such access is granted) to the road.
- Monitoring program for plants, water and soil adjacent to the road to determine what (if any) materials are accumulating along the road due to industrial activity

SARA Listed Species

The *Species at Risk Act* (SARA) states that adverse effects on listed species must be identified and assessed, and regardless of significance, mitigated and monitored (s.79). It is ENR's view that species assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the GNWT General Status Rankings should be treated in a fashion consistent to those species listed under SARA. Mitigation measures and plans to monitor the effectiveness of the mitigative measures are required under SARA.

The GNWT is signatory to the Accord for the Protection of Species at Risk and is therefore committed to ensuring that the environmental assessment of projects within its jurisdiction takes Species at Risks into consideration. Further, any impact to habitat that is important to Species at Risk, including the 'critical habitat' and 'residence' specified under SARA, must be considered during EIA. If the habitat is known to be used by a species of wildlife at risk, and its important is unclear, a precautionary approach requires treating that habitat as important unless the balance of evidence suggests otherwise.

Weaver (2005) has collected data that indicate that in comparison to other areas in the Great Nahanni Ecosystem there is a "moderately high occurrence" of grizzly bears (COSEWIC Species of Special Concern) in the Prairie Creek area. In addition, the following SARA and COSEWIC listed species may occur in the project area (Species at risk in the Northwest Territories, 2008 edition):

Peregrine Falcon *anatum* subspecies (Threatened)
 Woodland caribou – Northern Mountain Population (Special Concern),
 Wolverine (Special Concern),
 Rusty blackbird (Special Concern), and
 Short-eared owl (Special Concern).

Wildlife Management

In addition to SARA and COSEWIC listed species, activities originating from the Prairie Creek Mine are likely to affect other types of wildlife that occur in the project area. For example Dall's sheep are known to frequent the Prairie Creek area. Dall's sheep are particularly sensitive to noise, and the sound of aircraft and vehicles. These types of disturbances can result in energetic costs associated with behavioural responses including fleeing, habitat shifts, increased movement and lower foraging and resting rates. CZN needs to develop explicit protocols to manage wildlife interactions with mine activities, and to mitigate disturbances.

Species such as grizzly bear, and wolverine are wide ranging and the potential for them to encounter human activities within a home range of hundreds of kilometers, is

high. Proper food storage and waste disposal is critical to minimizing attractants to the Prairie Creek Mine and ensuring that problem animals are not created. A problem animal at Prairie Creek Mine could endanger tourists in NNPR and would eventually need to be destroyed.

A Wildlife Management Plan for this project has been drafted (2003), however, ENR recommends that the wildlife issues brought forward in this letter be addressed in a revised edition of the WMP. In addition to (or as a part of) the Wildlife Management Plan, ENR recommends that CZN develop a Waste Management Plan for the camp that minimizes the potential for the attraction of carnivores. This plan should be developed in collaboration with ENR Regional Biologists. At minimum, it should include items such as:

- Proper food handling and storage
- Waste storage and disposal
- Incineration practices

In order to ensure the safety of wildlife that may occur in the project area, and the protection of CZN staff, patrons of the NNPR from habituated wildlife, wildlife management, and waste management (as it pertains to wildlife) should be included in this EA.

Wildlife Cumulative Effects

Aside from harvesting pressures, the Nahanni Complex caribou herd could, in the foreseeable future have three mineral related developments within its annual range. The projects may also fragment habitat for other species at risk that occur in the Greater Nahanni Ecosystem (as described in Weaver, 2005). These projects are: Selwyn Resources Howards Pass Project (land and air assisted mineral exploration), North American Tungsten Corporation Cantung Mine, and Canadian Zinc, Prairie Creek Mine. These projects may individually have small ecological footprints, however, when combined they have the potential to significantly decrease the effective habitat for not only the Nahanni Herd Complex, but other Species at Risk that share the project area.

In addition to fragmenting habitat, these developments may potentially decrease habitat quality, as numerous studies have shown that heavy metals (such as lead and zinc) when released into the environment via industrial activities bioaccumulate in wildlife (i.e. Tedarova *et al.* 2003, Poskorny *et al.* 2004, Falandysz 2005, Reglero *et al.* 2008). It is for these reasons (habitat fragmentation, and reduction of habitat quality) that ENR believes that wildlife cumulative effects should be included in this EA.

SOCIO-ECONOMIC

The GNWT believes that issues related to education, training, employment and medical/health services need to be addressed in this Environmental Assessment.

Education

Canadian Zinc (CZN) has stated a commitment to providing maximum economic opportunity to the region, and also education and support services (Project Description Report, p.100). Commencing in 2004, CZN established the CZN Community Scholarship Program in which \$6,000 is awarded annually to students from communities neighbouring the mine that are pursuing a post-secondary education. To date, scholarships have been awarded to 24 students from the communities of Fort Liard, Nahanni Butte and Fort Simpson (PDR, p.101).

Current and future CZN educational assistance programs that continue to support education in communities neighbouring the mine should be identified.

CZN has stated that it sponsored local people to enable attendance at various conferences with a view to advancing the education within the communities (PDR, p.101). Any current and future training or educational programs CZN plans to utilize to assist in the employment of local peoples should be identified in the EA.

Any plans CZN will initiate to encourage and promote the completion of high school, post-secondary or trades-based education and training in relation to the project should be identified.

Training

CZN has reported that it undertook to provide an Environmental Monitor Training program during the summer of 2006. To ensure training and employment benefits are maximized and sustained in the North, further information detailing CZN human resource strategies and plans for future pre-employment and technical training programs and initiatives are important in understanding how this project will enhance skill capacities in the North overtime. Information may include, but not limited to, the following points:

- Training partnerships and funding arrangements
- Measures of success or benchmarks
- Plans to promote training and employment opportunities to the impacted communities and other NWT communities;
- Pre-employment and technical training programs or initiatives;
- Number of planned apprenticeship positions;
- Career counselling and guidance plans for employees;
- Strategies to advance an entry-level employee from one level of employment to another (e.g. unskilled to semi-skilled or skilled); and
- On site essential skills and literacy support for workers.

Employment

CZN has indicated that the future operating mine at Prairie Creek will directly employ approximately 220 people on a year round basis for 14 to 20 years. Information on potential employment opportunities that occur prior to the operating phase of the project (e.g. to set up facilities) would be helpful in the total assessment of the project.

CZN has stated an objective to employ a northern workforce of 35%, with a minimum 15% First Nations workforce along with training programs for such jobs (PDR, p.5). CZN also states a target to retain First Nations people as 25% of the workforce, and meet or improve this percentage with training (PDR, Appendix L, p.5of7). Further clarification on the basis and rationale for CZN's employment commitments for both Northern and Aboriginal residents of the NWT.

CZN has indicated that local shifts would consist of a three week in, three week out basis on a 12 hour, 7 day per week cycle (PDR, p.102). CZN has also indicated that personnel will work a rotating work schedule comprising two or three weeks on site followed by a two or three week break (with variations as required) [PDR, Appendix L, p. 5of7]. Has CZN considered alternative work rotation schedules for the mine operations? If so, what other options have been considered and what is the preferred option for CZN and why?

CZN has stated a commitment to a "hire first" policy for the communities. To better understand the impact of this policy for Northerners, an elaboration on the "hire first" policy outlining what it means and for which communities or groups would be helpful in the assessment of the project.

CZN has stated that area non-resident personnel will be flown in to site on charter flights originating from Edmonton, Yellowknife or Vancouver. Employees will make their own way to these locations for travel to the Mine Site. Area resident personnel from local communities will also be flown in on charter flights from Nahanni Butte, Fort Liard and Fort Simpson. NWT residents beyond these communities will make their own travel arrangements to arrive at these pick-up points. In the event of flight delays due to weather, out-going crews will continue to work until incoming crews arrive. Remuneration adjustments will be made for days gained or lost over a year (PDR, p.76).

Does CZN plan to provide a travel subsidy or reimbursement to Northern employees for making their own travel arrangements to arrive at the identified pick-up points (e.g. Wrigley to Fort Simpson)? What are CZN plans are to help retain Northern worker residency in the NWT.

More information around the following points, but not limited to, would help in the assessment of the project:

- Employment projections for all phases of the project;
- Basis and rationale for Northern and Aboriginal employment commitments;
- Priority hire policies;
- Prior learning assessment recognition hiring policies;
- Camp policies on drugs and alcohol;
- Hiring policy for candidates with a past criminal record;
- Communication services for employees to stay in contact with family members;

- Transportation policies for local and regional Northern residents and southern hires;
- Northern attraction and retention plans and strategies;
- Mine closure mitigation plans to ease transition of employees; and
- Cultural orientation for workers.

Medical/Health Services

The workforce of the Prairie Creek Mine project is quite large given the site will house approximately 110 workers at any one time. Additionally, the proponent will use two transfer facilities to assist in the transport of products to and from the mine site along a 180km winter road. With industrial operations there is an increased probability that serious accidents requiring offsite medical treatment will occur. The nearest communities to the mine site are Nahanni Butte, Fort Liard and Fort Simpson. However, the Health Centres at Fort Liard and Fort Simpson and the Health Station at Nahanni Butte do not have permanent physicians or the necessary resources to accommodate an increased number of serious medical emergencies. Any proposed plans of the proponent in dealing with medical emergencies that occur on the mine site or enroute to/at the transfer facilities requiring offsite treatment need to be identified.

In their project description, the proponent discusses some potential socio-economic benefits that development will have on the communities in the proposed mining region. However, the proponents do not discuss the potential negative social/health impacts on the communities, particularly in Fort Liard. The proponent will be transporting materials at high volume during the winter months (up to 2800 loads or 40/day) to Fort Nelson, BC via the Fort Liard Highway. This means that the mine workers will have regular access to the community of Fort Liard during those winter months. In turn, regular community access may contribute to an increased potential for negative social and health impacts. Potential impacts may include, but are not limited to: an increased prevalence of alcohol and illicit drug use, physical abuse and sexually transmitted infections. What are the proponent's plans of mitigation for dealing with the possible negative social/health impacts from mining activities on the community of Fort Liard?

CULTURAL/HERITAGE RESOURCES

The GNWT has concern over possible negative impacts to cultural and/or heritage resources from the Prairie Creek Mine and associated transfer facilities. It is suggested the proponent provide the following:

- Identify all known archaeological and heritage resources, as well as sites or areas of cultural significance in or near the required study area,

- Identification of any areas within the area of interest that have moderate to high probability of containing currently unknown cultural and/or heritage resources;
- How the developer has taken the presence of Dene sacred sites into consideration,
- A synopsis of the correspondence and consultations exchanged with experts (traditional knowledge holders, archaeologists, anthropologists) used to make the above assessments;
- A listing of all recommended mitigation measures identified for the protection of local known and high potential areas of cultural and heritage resources;

2. What physical Works and activities should be considered during this environmental assessment?

The GNWT believes that issues related to project emissions and air quality, waste management, hazardous waste management, waste rock storage area, tailings management, mine/mill water management, monitoring and progressive reclamation and closure and reclamation need to be addressed in this Environmental Assessment. The potential for impacts from the transportation of hazardous materials and the increased traffic volumes should also be assessed.

Project Emissions and Air Quality

A detailed assessment of project air emissions and potential impact on ambient air quality (i.e. air quality dispersion modelling using an approved model capable of simulating the complex meteorology associated with the mountainous terrain in the mine area). The assessment should:

- quantify and characterize the emissions of common air contaminants (i.e. SO_x, NO_x, CO, VOC's and PM [as TSP, PM₁₀ and PM_{2.5}]) from all sources associated with the project including transportation of ore concentrate; model the identified emissions, including dust deposition and compare the predictions to appropriate ambient air quality thresholds (e.g. NWT Ambient Air Quality Standards; National Ambient Air Quality Objectives).
- quantify and characterize the emissions of greenhouse gases (as CO₂, NH₄ and N₂O; and CO₂e) from all sources associated with the project and assess them in the context of territorial and national emission estimates.
- document the use of Best Available Technology (BAT) and Best Management Practices (BMP) employed by the company to minimize emissions and demonstrate a commitment to Continual Improvement and Keeping Clean Areas Clean as required by the Canada-wide Standards for Particulate Matter (PM) and Ozone (CCME 2000)

Waste Management

ENR requests that the Proponent provide a detailed waste management plan including incineration strategies to ensure compliance with the Canada-wide

Standards for Dioxin and Furans (CCME 2001) and the Canada-wide Standards for Mercury Emissions (CCME 2000).

The Waste Management Plan should include, but is not limited to:

- The identification of non-hazardous, hazardous, combustible and non-combustible wastes, as well as plans for waste segregation, storage, and the strategy for its implementation;
- The identification of mitigative measures to prevent wildlife attraction;
- A detailed listing of waste treatment and disposal plans, including identification of contingencies;
- A detailed listing of hazardous and dangerous waste treatment and disposal plans, including identification of contingencies;
- Treatment, testing and disposal methods for all waste products proposed for release to the environment; and
- A listing of expected waste types and quantities to be transported off-site and identify the respective final disposal locations located both inside and outside the NWT.

The *Incineration Management Strategies* should address:

- Selected incineration technology and rationale for selection (the minimum requirement to accommodate camp waste streams should be a dual-chamber, controlled-air incinerator);
- Recycling and waste segregation for waste streams entering the incinerator;
- Operator training and qualifications, as well as the identification of trained and designated operators;
- Procedures for operation and maintenance, including record-keeping (i.e. completion of burn cycle and maintenance logs and recording of the weight of each waste load charged to the incinerator);
- A reporting requirement to summarize the tracking and record-keeping component;
- Weigh scales to record the weight of each load charged to the incinerator; and
- Incineration residue disposal procedures.

Hazardous Waste Management

ENR refers the Proponent and Board to GNWT's *Guideline for General Management of Hazardous Waste*⁴. The Guidelines state that responsibility for proper waste management rests with the generator of the waste.

As a generator, the proponent, must:

- Ensure that a waste manifest is properly completed and accompanies the shipment;
- Ensure that the waste is transported by a registered hazardous waste carrier to a registered receiver; and

⁴ http://www.enr.gov.nt.ca/eps/pdf/06HW_GEN%20REV.pdf

- Ensure receiving facilities outside the Northwest Territories (NWT) are registered in the receiving province or territory, and are approved to manage the associated wastes.

ENR requests that the Proponent demonstrate the incorporation of the GNWT Guidelines for General Management of Hazardous Waste into the Waste Management Plan.

The Proponent is currently registered with ENR as a generator of hazardous waste for PCBs and sodium cyanide; however, it is requested that the Proponent register with ENR, Gerald Enns (867) 920-8044, as a generator for other hazardous waste.

The Proponent is asked to provide:

- The name of a suitable contact person, address and phone number.
- Location and description of the activity taking place which results in the generation of the hazardous waste, and
- Expected type, quantity and method of storage of hazardous waste.

Waste Oil

Although potentially classified as an *Industrial Hazardous Waste*, ENR recognizes that, in some circumstances, used oil (waste oil) can have a secondary value as a resource if it is burned as a fuel (i.e. for space heating). However, used oil can contain metals and other contaminants, and improper burning can lead to the otherwise preventable formation and spread of contaminants in the workplace and in the environment.

The Proponent states in their Project Description, “A sizeable inventory of waste oil from vehicle and generator maintenance was left by Cadillac. CZN has consolidated this inventory in the Tank Farm enclosure, and has steadily been depleting it by using the oil to ignite camp refuse in the high temperature on-site incinerator”.

If used oil is incinerated, it should:

- Be burned in an approved used oil burner and tested for contaminants as required in the NWT under the *Used Oil and Waste Fuel Management Regulations*.
- If it cannot be demonstrated that the used oil meets the above-noted *Used Oil and Waste Fuel Management Regulations*, it must be burned in an incineration device that is capable of meeting the emission limits established by the CCME under the CWS for Dioxins and Furans and the CWS for Mercury Emissions.
- If the standards included in part (a) and (b) cannot be met, the used oil should be safely stored and transported in sealed containers (odour-free to prevent animal attraction) to a facility that is a registered recycling or disposal facility for these wastes.

ENR requests that further information regarding Used Oil Incineration be provided as a component of the Waste Management Plan and that the Proponent registers with ENR as a Receiver of hazardous waste in order to continue burning waste oil.

Asbestos

The Proponent states in their Project Description, “The age of the existing buildings at the Mine is such that the presence of asbestos-containing materials (ACM) cannot be ruled out. ACM may occur in insulation, roof and floor tiles and cladding. Some of the buildings are beyond repair and will be demolished. Before this occurs CZN will engage a contractor to conduct a full inspection of all buildings on-site, define where ACMs occur and develop an appropriate management plan”.

ENR refers the Proponent and the Board to the GNWT’s *Environmental Guideline for Waste Asbestos*⁵ for the following recommendations:

Bury asbestos-containing materials (ACMs) in the onsite landfill in the following manner:

- stored in sealed, airtight containers (that are sound, undamaged and not leaking) or double-wrapped 6mm poly bags labeled “asbestos”;
- immediately buried and covered with one half meter of cover material (cover material can be locally available soils, refuse or other materials provided the asbestos containment is not ruptured);
- located and buried where they won’t be disturbed;
- referenced on a map or diagram of the property, which will be supplied to Indian and Northern Affairs Canada and Environment and Natural Resources; and,
- designated onsite as an area of hazardous material disposal.

ENR requests that the Proponent provide reference to GNWT’s Environmental Guideline for Waste Asbestos and provide further information on the assessment and management of asbestos during construction activities or operations.

On-Site Bioremediation Cell

The Proponent states in their Project Description, “CZN is investigating the development of an on-site bioremediation cell in order to manage any contaminated soil from minor spills. Development plans will be presented to the appropriate agencies for review and authorization before embarking on construction of such a cell”.

ENR refers the Proponent to the GNWT *Guidelines for Contaminated Site Remediation* (2003) for the assessment and remediation of contaminated sites. These guidelines have been developed based on CCME CWS for Petroleum Hydrocarbon (PHC) in Soil (2001) and the *Canadian Environmental Quality Guidelines* (1999).

ENR also refers the Proponent to Environment Canada’s *Federal Guidelines for Landfarming Petroleum Hydrocarbon Contaminated Soils* (December 2005). This document provides details on design considerations, siting, monitoring and decommissioning.

⁵ <http://www.enr.gov.nt.ca/eps/pdf/ASBESTOS.pdf>

ENR requests that an On-site Bioremediation Cell Development Plan be provided.

Waste Rock Storage Area

The Proponent plans to place a proposed waste rock volume of 450,000m³, from mine development, near the 930 level portal in a compact, engineered facility created in a valley adjacent to Harrison Creek.

A conceptual design report for the Waste Rock Pile, *Conceptual Design and Preliminary Geotechnical Assessment, Waste Rock Pile Harrison Creek (Golder Associates)*, was conducted. ENR is pleased to learn that the design includes upslope runoff diversion and pile drainage collection during operations, routed via pipeline into the mine water management system.

However, in order for a preliminary design to be completed, the following recommended undertakings are requested:

- Geotechnical inspection of the site;
- Confirmation of the topography and slope stability information;
- Testing of the waste rock and underlying soil and rock; and
- Additional information of the overall site for the development of water management features.

ENR requests the Proponent identify their intentions for the above noted recommendations, and identify timelines for studies, or alternatively, provide results from the investigations.

Tailings Management

The Proponent is planning two temporary storage sites for tailings. One site will be a building adjacent to the concentrate shed which will have a concrete floor and heating. This site will have capacity for 10,000 tonnes. A second temporary storage site will be built on the north side of the Water Storage Pond, with a capacity for 40,000 tonnes.

Golder and Associates completed the conceptual *Temporary Tailings Storage Area DMS Coarse Reject Rock Storage Area and Water Storage Pond Design* report for the temporary storage site located at the Water Storage Pond.

Prior to final design, the following recommended undertakings are requested:

- Detailed ground survey of the facility area, specifically the north slope of the pond to determine slope stability;
- Additional field investigation work and instrumentation installations on north slope;
- Field investigation and laboratory testing program to confirm assumed strength parameters for underlying clay, later to confirm stability of dyke;
- Information on water levels in Prairie Creek, along with piezometric pressure head levels in underlying clay;
- Review of the design storm storage requirements; and,

- Installation of three monitoring wells; two located along the southern boundary and one on the eastern boundary of the facility, to confirm the performance of an underlying clay layer and new pond liner

ENR requests the Proponent identify their intentions for the above noted recommendations, and identify timelines for studies, or alternatively, provide results from the investigations.

Mine/Mill Water Management

ENR requests that revisions to the current Mine/Mill Water Management Plan result in a Comprehensive Mine/Mill Water Management Plan incorporating all activities associated with the proposed mine.

Monitoring

It is requested that the Proponent provide a clear overview of what monitoring programs will be implemented over the duration of construction and operation activities.

Progressive Reclamation and Closure and Reclamation

As outlined in INAC's *Mine Site Reclamation Guidelines for the NWT* (January 2007), a key concept for an effective Closure Plan is following an 'objectives-based' approach, which starts with clear statements of objectives and the subsequent development of closure criteria. These objectives take into consideration the physical stability, chemical stability and future use and aesthetics of the site after closure. Closure criteria should be specific enough for a third party to verify compliance or success.

ENR requests the Proponent explain its closure and reclamation approach and to what standards it will reclaim to. In addition, ENR requests that a more detailed Interim Closure and Reclamation Plan be provided, along with information on proposed Progressive Reclamation activities, including approach for consultation with regulators.

Trucking Weights

The Canadian Zinc operational season for transportation of materials is indicated as "January 15 onwards". Based on the Project Description reports, it is assumed that traffic is to take place primarily during winter road conditions (2.5 months). If operations continue into the spring and summer months, the Department of Transportation (DOT) will re-evaluate the project once traffic termination dates are specified. DOT maintains road restrictions on the Liard highway during the spring to fall months from approximately the middle of April to the middle of November. During this time, transport loads are restricted to 75% of actual loads or complete restriction of weight bearing loads, depending on road conditions at the time. Restrictions are determined through regular road check inspections by DOT. If road conditions are determined to not be suitable for transportation traffic, highways may be shut down for extended periods of time.

Based on increased use of the Liard Highway by Canadian Zinc, it is likely that additional highway areas will fail with the estimated traffic weight loading. During the winter months, DOT operations, maintenance, and road inspections of the Liard Highway are predicted to increase from a Category 4 basis--maintenance for low volume roads on an as needed basis--to Category 2: additional maintenance efforts required to allow for additional and timely snow plowing and gravelling on a more regular basis.

To properly determine loading impacts to the Liard Highway Canadian Zinc will need to specify the exact termination dates for transportation on the Liard Highway to the Fort Nelson load out facility.

Corridor Contamination Impacts

Transportation corridor contamination impacts on the Liard Highway will likely occur due to the high volume movement of contaminated and/or hazardous materials. In addition, the LTF transfer facility is physically located at the junction between Canadian Zinc's Winter Access Road and the Liard Highway, resulting in a high probability of leaching contaminants into DOT's jurisdiction. Vehicles contribute significantly to nonpoint source pollution in the form of oils, greases, and toxic chemicals leaked from vehicles and cargo that are deposited into the air and on road surfaces. Typically, the pollutants deposited on road surfaces are moved or carried away during precipitation events and re-deposited.

Fuel and/or hazardous material spills along the Liard Highway are a concern since spills may quickly enter into the surrounding Nahanni watershed. Spills are more likely to occur when trucks go off the road in deep or higher fill areas, where creeks usually reside at the bottom of fill areas resulting in high potential for materials to enter into the corridor. In the LTF Project Description Section 2.2 the facility location selection description is provided as: "The area appears to be a gentle slope towards the river". Due to the increased likelihood of transportation contamination in a sensitive valley and wetlands area which provides habitat to a number of species, and close proximity to the Nahanni National Park, Canadian Zinc should provide a comprehensive Controlled Road Use Plan that includes but is not limited to the following:

- Road Safety Program including a debriefing start-up meeting and communication protocol for road users;
- Emergency Response Procedures;
- Information on prescribed maximum speeds and driving guidelines along the Liard Highway;
- Incorporation of Transportation of Dangerous Goods Act and Regulations (Canada);
- Comprehensive Spill Management Plan for road users.

Terrain

The evaluation of both the TTF and the LTF operations cannot be separated from use of the Liard Highway to transport materials to Fort Nelson. The Liard Highway is situated in a rolling terrain with low-lying areas containing several tributaries that flow into the Liard River. In rolling topography terrain with deep fills, roads are narrow in

width and lacking of barriers. Grading of the road side slopes to gain extra width is not possible on the Liard Highway. As such, the width of the Liard Highway and lack of side slopes should be considered as a safety precaution, and a high degree of caution should be exercised on the highway due to these characteristics. DOT asks that Canadian Zinc should submit Terrain Description information evaluating the topography of the terrain on which both transfer facilities are situated and include all areas on both sides of the Liard Highway. The purpose of this information would be to provide Canadian Zinc with a basis to formulate a Controlled Road Use Plan to determine appropriate driving guidelines and procedures.

Terrain Description information should include:

- topographical features
- hydrogeology, including presence and location of water bodies, surface water flows (freshet and year round flows), drainage patterns and the groundwater regime
- geological conditions
- soil characteristics
- presence of permafrost
- depth and volume of topsoil and subsoil present
- map identifying rivers, streams and their associated tributaries, and critical habitat features.

General Comments

More information should be provided in transport protocol for loading/offloading concentrate bags in the LTF, and a Spill Management Plan provided for the TTF and LTF.

More information should be provided on the type of industry standard bags in which concentrates are stored.

During the Technical Scoping Sessions in Yellowknife on October 9, 2008 Canadian Zinc indicated their intended use and/or development of a quarry to construct the LTF base. Canadian Zinc is required to provide more information on quarry location, and quantities of gravel required.

3. What are the appropriate time periods and distances from the development for consideration of potential impacts?

The geographic scope of study must be appropriate for the potential Valued Component being assessed. The Prairie Creek Mine operation is comprised of several different project components (e.g. mine site, transfer facilities) with each component having its own possible range of geographic influence. The geographic scope must consider potential project effects on all areas that may be impacted in some identifiable way by the mine and transportation, including upstream and downstream of the Prairie Creek Mine, the ranges of wildlife using the entire area and

the areas potentially-impacted by transportation activities, including the temporary winter road and the increased use of the Liard highway.

The geographical scope for assessing impacts on the human environment shall include, but not necessarily be limited to communities that use areas which may be impacted by the mine and transportation activities, including, but not limited to communities in the Deh Cho region of the NWT.

4. What evidence from previous studies, management plans, or environmental assessments should be moved onto the public record for this environmental assessment, and why?

Since operations on the Liard Highway are directly linked to operations conducted on Canadian Zinc's Winter Access Road (LUP MV#2003F0028), information from the Environmental Assessment for the above LUP should be transferred onto the public record for both the LTF and TTF Environmental Assessments (MV#2008T0012 and MV#2008T0013).

ENR would like to thank the Board for the opportunity to comment on the Scope of the EA for Canadian Zinc Corporation, Prairie Creek Mine and associated transfer facilities. We hope that these technical comments and recommendations are useful to the Board in preparing a Terms of Reference and Work Plan.

Should you have any questions or concerns, please do not hesitate to contact Joel Holder, Environmental Assessment Analyst, at (867) 920-6593.

Sincerely



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