Environment Canada
Environnement Canada

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July 2, 2010

Our File:

Mackenzie Valley Environmental Impact Review Board
P.O. Box 938,
Yellowknife, NT X1A 2N7

Attention: Chuck Hubert/Paul Mercredi

By Email chubert@reviewboard.ca

Re: EA0809-002 Information Requests on the Canadian Zinc Corp. Prairie Creek Mine Environmental Assessment – Round 1

Environment Canada (EC) has identified a number of questions in connection with the Developer's Assessment Report (DAR) and related materials submitted by Canadian Zinc Corporation (CZN).

We have had the opportunity to discuss Information Requests (IRs) with other Parties, and have reviewed IRs submitted by Parks Canada, DFO and INAC. Rather than replicate IRs, I would like to note here that EC echos the questions and concerns relating to water quality aspects as raised in the following IRs: PC 32, 34, 39 and 47; INAC 06 and 10.

Please to not hesitate to contact me at 867-669-4735 or by email at anne.wilson@ec.gc.ca with any questions or concerns.

Yours truly,

Anne Wilson
A/Head, Environmental Assessment – North
Environmental Protection Operations

cc: Susanne Forbrich (Manager, Environmental Assessment, EPOD, PNR, Edmonton)
EC Review Team Distribution List

IR Number: EC-1
Source: EC/ENR
To: Canadian Zinc Corp.

Subject: Contaminant loading from mine operations and transport of lead and zinc concentrate.

Preamble:
Fugitive dust from the mine operations and the transport of concentrate can result in contaminant loading to land and water. The following describes the most common sources of the fugitive dust:

Mine Operations:

- **Dust generated by mining activities—**Dust can be generated from drilling, blasting, material handling, and truck haulage activities.
- **Dust emissions from materials handling—**Dust can be generated from materials handling activities, including truck haulage activities, placement of waste rock on waste rock stockpiles, and the stockpiling of ore.
- **Dust emissions from mill and concentrate storage facilities—**Dust can be generated from the ore crushers, the coarse ore stockpile building, and from concentrate storage and loading operations.
- **Mechanical or wind-generated dust from surfaces—**Windblown dust can be generated from surfaces around the mine, including the access roads and yards, and other mineralized surfaces.

Transportation:

- **Tracking along roads —**Ore concentrate can be tracked out of loading and unloading facilities on haul truck tires and other truck surfaces and subsequently deposited onto the road.
- **Concentrate spillage and escapement from haul trucks—**This includes leakage from bags of concentrate, blowing of dust collected on the outside of the bags of concentrate on the trucks, or spillage from overturned trailers following accidents.

The Red Dog lead and zinc mine in Alaska provides an example how mine activities and transportation of lead and zinc concentrate can lead to the contamination of soil, vegetation and water bodies. Although the Red Mine is larger than the proposed Prairie Creek Mine, both mines will have similar activities: both are lead and zinc mines that include on-site processing of ore and transportation of lead and zinc concentrate by trucks through a national park. Therefore, there is potential that the Prairie Creek Mine will have similar environmental issues as the Red Dog Mine.

The Red Dog Mine transports lead and zinc concentrate along an all season road 24 miles from the mine site to the sea port. Studies have linked the transport of concentrate from the Red Dog Mine to elevated levels of lead, zinc and other metals in the environment. Ford and Hasselbach (2001) found a strong road-related gradient in heavy metal

deposition along the all season road. They found lichens (Hylocomium splendens) “to be highly enriched in lead (Pb > 400 mg/kg), zinc (Zn > 1800 mg/kg) and cadmium (Cd > 12 mg/kg) near the haul road. Concentrations decreased rapidly with distance from the road, but remained elevated at the transect endpoints 1000 m – 1600 m from the road (Pb > 30 mg/kg, Zn > 165 mg/kg, Cd > 0.6 mg/kg)”. In a follow-up study, Hasselbach, et al. (2004) found that elevated levels of heavy metals extend up to 25 km from the haul road. Elevated levels of lead and zinc were also found in streams and streambed sediments along the haul road (Brabets, 2004). In streams near the mine, cadmium and lead concentrations in tissue of juvenile Dolly Varden were significantly higher in fish downstream from the haul road compared with upstream fish (Ott and Morris, 2004).

Another example of contaminant loading is found at the original Pine Point Mine, NWT. Lead and zinc concentrate was transported from the mine to Hay River along an old CNR railway. Indian and Northern Affairs Canada (INAC) have tested soil samples from the railway bed and found that lead and zinc concentrations exceed the Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines for these metals. The sampling program was site specific and too limited to say with certainty, but the pathway of this contamination was potentially linked to the transportation of the mine concentrate. Further details on the INAC soil testing can found on the MVLWB public registry, file number MV2004Q0019.

The Red Dog Mine is managing the contaminant loading by implementing mitigation strategies to reduce fugitive dust from the mine site and transport of concentrate. For example, the Red Dog Mine replaced the concentrate haulage fleet with trailers that have hydraulically operated steel covers to minimize spills, solid sides to eliminate potential for concentrate leakage and more stability, thereby reducing the risk of accidents. The mine also implemented a number of mitigation strategies to control dust at transfer points including negative pressure and bag houses in the concentrate loading building, enclosed conveyors, and truck washing bays to minimize tracking issues. A complete list of mitigations strategies can be found in DMTS Fugitive Dust Risk Assessment Report Appendix L (Tech Cominco, 2007). To ensure that the mitigation is effective the Red Dog Mine has an intensive monitoring program including twenty-five dustfall monitors (Teck Cominco, 2005).

The Prairie Creek Mine is proposing to load lead and zinc concentrate into bags and to transport the bags across the winter road on flat deck trailers. Each truck load will have, at minimum, 30-tonnes of concentrate and 120,000 tonnes of concentrate will be hauled out from the mine each year (4000 truck loads). Limited information is provided on mitigation strategies to be implemented to control dust during the handling and transport of the concentrate.

EC/ENR notes that the proponent has provided an outline of a “Best Management Practices Plan to Control Fugitive Dust and Metals Emissions” (Air Quality Assessment, Section 5.2) which will be completed if the project progresses to the permitting stage. However, for the MVEIRB process it would be helpful to obtain some additional details of potential contaminant loading mitigation strategies.

Requests:
EC/ENR requests that the proponent provide a list of potential mitigation strategies that could be used to minimize contaminate loading from fugitive dust associated with mining activities, and the handling and transport of ore and concentrate. In particular, EC/ENR requests that the proponent discuss the mitigation strategies used at other mines, such as the Red Dog Mine, and the potential for implementing these mitigation strategies at the Prairie Creek Mine.

EC/ENR requests that the proponent discuss and justify its decision to use bags on flat deck trailers to transport concentrate rather than using mechanically sealed trucks similar to the trucks used at the Red Dog Mine. EC/ENR further requests an assessment of alternative methods of containment during transport, including secondary containment options for the proposed method.

References:

Brabets, T., 2004, Occurrence and Distribution of Trace Elements in Snow, Streams, and Streambed Sediments, Cape Krusenstern National Monument, Alaska, 2002-2003, U.S. Department of the Interior and the U.S. Geological Survey, Scientific Investigation Report 2004-5529.
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Ford, J., Hasselbach, L., 2001. Heavy Metals in Mosses and Soils on Six Transects Along the Red Dog Mine Haul Road, Alaska, National Park Service.
http://www.dec.state.ak.us/spar/csp/docs/reddog/reddogrpt2.pdf

Hasselbach, L., Ver Hoef, J., Ford, J., Neitlich, P., Crecelius, E., Berryman, S., Wolk, B., Bohle, T., 2004. Spatial patterns of cadmium and lead deposition on and adjacent to National Park Service lands near Red Dog Mine, Alaska, National Park Service.
http://www.nps.gov/akso/NPS_CAKR-Metals_2004.pdf

Horvath, S. (editor). 2007. British Columbia Environmental Laboratory Manual. Water and Air Monitoring and Reporting; Environmental Quality Branch; Ministry of Environment; Victoria BC; Canada.
http://www.env.gov.bc.ca/air/wamr/labsys/lab_man_07.html

MVLWB – MV2004Q0019, Details on the INAC soil sampling program of the old CNR railway bed.
http://www.mvlwb.com/scr/search.php?landid=%20222

Ott, A.G., and W.A. Morris. 2004. Juvenile Dolly Varden whole body metals analyses, Red Dog Mine (2002). Technical Report No. 04-01. Alaska Department of Natural Resources, Office of Habitat Management and Permitting.
http://www.habitat.adfg.alaska.gov/tech_reports/04_01.pdf

Tek Cominco Alaska Incorporated, 2005, Summary of Mine Related Fugitive Dust Studies: Red Dog Mine Site.
http://www.dec.state.ak.us/air/doc/RD_Mine_Fugitive_Dust_Studies_3-05.pdf

Tek Cominco Alaska Incorporated, 2007, DMTS Fugitive Dust Risk Assessment Volume I -- Report.
http://www.dec.state.ak.us/SPAR/csp/sites/reddog.htm

IR Number: EC-2
Source: EC/ENR
To: Canadian Zinc Corp.

Subject: Incineration of sewage

Preamble:

The project fact sheet, page 3, indicates that garbage and sewage sludge will be incinerated on-site. In Table 6-6 in the Development Description, page 205, it states that sewage sludge will be disposed in the landfill. EC/ENR seeks clarity on if sewage sludge will be incinerated on-site.

Sewage sludge should not be burned in batch waste incinerators that are typically used in the north. Sewage sludge has high moisture content and low heat content that will increase operating costs dramatically and lead to poor incinerator performance. Poor incineration performance produces and increases the release of numerous toxic pollutants to the air, and ultimately the land and water,, such as dioxins and furans, that lead to direct and indirect hazards to human and environmental health. Furthermore, it is unlikely that the sewage will be completely combusted and could lead to the release of pathogens into the environment. High moisture materials can leak from the incinerator hearth and lead to equipment damage and present health hazards to workers.

Sewage sludge should only be burned in incineration equipment designed for this type of waste. If the proponent decides to pursue sewage sludge incineration, it should provide the Board with the design specifications of the incinerator and a letter from the manufacturer stating that this equipment is suitable for burning this type of waste. Any emissions from sewage sludge incineration must be reported to the National Pollutant Release Inventory (NPRI), under the authority of the Canadian Environmental Protection Act, 1999 (CEPA 1999).

http://www.ec.gc.ca/npri

Requests:

EC/ENR requests that the proponent clarify if sewage will be incinerated at the Prairie Creek Mine site. If sewage is to be incinerated, EC/ENR requests that documentation be provided indicating that the equipment is designed to handle this waste stream, and the conditions under which it must be operated.

IR Number: EC-3
Source: EC/ENR
To: Canadian Zinc Corp.

Subject: Air quality modelling input and output data

Preamble:

The quality of model predictions is dependant on the quality of the input data used in the model. The selection of model options and the configuration of model domains and grids can also affect the quality of predictions.

To provide confidence in the air quality model predictions provided in the DAR, all input data and selected model options and configurations must be reviewed.

Requests:

EC/ENR requests that the proponent provide all input and control files used in the CALPUFF model to generate the air quality predictions presented in the DAR. All files should be in a format that can be used directly into CALPUFF. Please include all output files in the raw CALPUFF format.

IR Number: EC-4
Source: EC/ENR
To: Canadian Zinc Corp.

Subject: Air quality modelling results

Preamble:

The proponent introduces a novel concept of a buffer zone, which extends 200 m around the surface mine lease (Air Quality Assessment, Section 2.4). There is no discussion of the significance or the justification of employing the buffer zone in regards to air quality impacts from the mine emissions. EC/ENR notes that the section of Prairie Creek (stream) which runs along the mine site is captured within the buffer zone. This stream could be an important receptor, particularly to the deposition of lead and zinc.

The proponent provides predicted maximum ambient concentrations and deposition rates based on CALPUFF modelling for receptors within the mine lease, receptors on the surface lease boundary, receptors within the buffer zone, receptors on the buffer zone boundary and receptors outside of the buffer zone (Air Quality Assessment, Tables 14, 15, and 16). The model predictions are further discussed in Section 4.2.3, and Section 4.2.4. Spatial plots of the predicted concentration isopleths were not provided. Spatial concentration isopleth plots are commonly included in air quality assessments and are essential to understanding the extent and severity of potential impacts as well as locating appropriate monitoring sites. Other jurisdictions, such as Alberta (Alberta, Air Quality Model Guideline, 2009), require spatial concentration isopleth plots of model predictions to be provided with air quality assessments.

Request:

EC/ENR requests that the proponent discuss the significance and justification of using a buffer zone in the air quality assessment.

EC requests that the proponent provide spatial isopleth plots of predicted maximum ambient concentration and deposition rates for each species modelled.

Reference:

Government of Alberta, 2009, *Air Quality Model Guideline*.
http://environment.alberta.ca/01004.html

IR Number: EC-5
Source: EC/ENR
To: Canadian Zinc Corp.

Subject: Air quality monitoring plan

Preamble:

In the outline of the of air quality monitoring plan, the proponent has identified the parameters to be measured, frequency and location of the monitoring and project phase in which the monitoring will occur (Air Quality Assessment, Table 24). Information on the types of monitoring was not provided. It would appear from the monitoring frequency that TSP, PM_{10}, and $PM_{2.5}$ will be measured using integrated monitors such as a dichotomous sampler, SO_2 and NO_2 will be measured using passive monitors, and lead and zinc will be measured using dustfall samplers. EC/ENR requests that the proponent confirm of types of monitors being proposed in the monitoring plan.

The number of monitors is unclear. The Red Dog Mine has established a network of 25 dustfall monitors at the main mine site, along the haul road and at each transfer site. The Prairie Creek Mine should implement an adequate monitoring program to ensure that fugitive dust mitigation is effective and that dust containing metals are not contaminating areas around the active mine site, haul road and transfer sites. Deposition of lead, zinc, and other contaminants into Prairie Creek is of particular concern.

Obtaining spatial isopleth plots of predicted ambient concentrations and deposition rates is essential to determining the number and location of monitoring sites.

Request:

EC/ENR requests that the proponent provide additional information regarding the air quality monitoring plan. Please provide the type of monitoring planned for each parameter and the number and location of the monitoring sites.

IR Number: EC-6
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Closure and Reclamation

References: Appendix 27

Preamble:
The closure and reclamation objective for the Waste Rock Pile (Section 3.5 of Appendix 27) is given as "The WRP…must not leach metals to an extent that groundwater and surface water quality are significantly impacted". However, in order to limit ambiguity of the objective it is important that the term significantly is clearly defined. As well, in Section 3.11 it is stated that "surface water quality should not be significantly different from operating period." Again, clarification as to the type of significance being referred to would improve the statement.

Request:
When the term 'significant' is used, please either define the term or provide a context for its use.

IR Number: EC-7
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Closure and Reclamation
References: Appendix 27

Preamble:
Section 3.8 of Appendix 27, Mill and On-Site Infrastructure, makes mention of various buildings on site and the berms lining Harrison Creek channel, indicating that they will be lowered in elevation; however, no mention is made of the flood protection berms lining Prairie Creek.

Similarly, in Section 3.9 of Appendix 27 details are provided on the reclamation plan for the all-season road bed along Funeral Creek, but it is unclear what reclamation is planned for the full length of the winter road.

Request:
Include a comprehensive list of all structures/facilities on and off site and the intended and/or potential closure options for each.

IR Number: EC-8
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Closure and Reclamation
References: Appendix 27

Preamble:
Section 3.10 of Appendix 27 is title “Monitoring, Maintenance and Reporting Program” although no mention of maintenance activities are addressed in the section or elsewhere in the plan. As such, the role of maintenance activities in relation to the overall closure plan and schedule, and the interaction between maintenance and monitoring it is not clear.

Request:
Clarification on what is meant by maintenance in terms of closure activities is requested, as well as the criteria to be used to determine that maintenance activities should be implemented.

IR Number: EC-9
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Waterfowl use of water impoundment pond at mine site

References: Prairie Creek Mine Developer's Assessment Report (Section 10.3.1, page 312); Vegetation and Wildlife Assessment Report (Appendix 17, Section 4.3.1.5.2, page 54)
Terms of Reference Section: Wildlife and Wildlife Habitat, Section 3.3.6

Preamble:
Section 5.1 of the *Migratory Birds Convention Act* prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area. The Developer's Assessment Report and the Vegetation and Wildlife Assessment Report identified that waterfowl have been known to use the large water impoundment pond on the mine site during the spring and summer. It is our understanding that this water impoundment pond could potentially hold tailings from mining activities at least during some of the mine operations. As such, there is a potential that waterfowl and any other aquatic birds that use the pond could be exposed to harmful substances.

The Terms of Reference require the Developer to describe the potential for increased contamination of food and water (Section 3.3.6, 1f), and to describe how planning has considered potential impacts to wildlife and wildlife habitat, best management practices to minimize impacts on wildlife, and what mitigation commitments have been made (Section 3.3.6, 4). The Terms of Reference also require (through the wildlife management plan) the identification of adaptive management measures to avoid, minimize, and mitigate potential impacts to wildlife when detected through wildlife monitoring (Section 3.3.6, 5d).

Request:
For Canadian Zinc Corporation to:

1. Describe potential impacts to waterfowl and other aquatic birds from possible contaminants and other harmful substances that may be found in the water impoundment pond on the mine site;
2. Outline mitigation measures that will be done to ensure that waterfowl and other aquatic birds are not exposed to harmful substances that may be found in the water impoundment pond; and
3. Discuss monitoring that will be done to ensure that the mitigation measures are effective.

IR Number: EC-10
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Wildlife Management Plan

References: Wildlife Management Plan (Appendix 32)
Terms of Reference Section: Wildlife and Wildlife Habitat, Section 3.3.6

Preamble:
In Section 3.3.6 of the Terms of Reference, the Developer is required to provide a Wildlife Management Plan (WMP) as outlined below.

5. *Provision of a wildlife management plan appropriate for full-scale mining covering all activities occurring at the mine site and along the transportation corridor, including discussion of:*

    a. Which other interested parties have been involved in the development of the wildlife management plan;

    b. The adequacy of all pre-existing wildlife mitigation and management plans and commitments in light of increased activity levels during full-scale operations;
    c. Efforts to be undertaken to monitor wildlife in the EA Study Area and report the presence of species to the appropriate authorities when necessary;
    d. Identification of adaptive management measures to avoid, minimize, and mitigate potential impacts to wildlife when detected through wildlife monitoring; and
    e. How monitoring results and mitigation efforts will be reported to regulators, responsible authorities and potentially-affected communities.

It is Environment Canada's view that the WMP submitted with the Developer's Assessment Report did not fully address the requirements of Terms of Reference to provide a WMP appropriate for full-scale mining covering all activities at the mine site and along the transportation corridor. The WMP should include all the impacts to wildlife that may result from this project, mitigation measures to avoid or lessen the specific impacts, and monitoring that will be done to ensure that mitigation measures are effective or to identify where further mitigation measures may be required. Specific details on the methods for monitoring and when adaptive management will be used should be included. Discussions will be required with the appropriate wildlife management authorities to ensure that the WMP is adequate. Environment Canada also encourages the Developer to review WMPs submitted for other northern mining projects in order to assist the Developer in determining the amount of information and level of detail that is required for a large-scale industrial development such as the proposed Prairie Creek Mine.

Request:
EC asks that Canadian Zinc Corporation provide a revised Wildlife Management Plan that addresses all wildlife impacts, proposed mitigations, and monitoring; adequately covers the specific requirements as outlined in the Terms of Reference (Section 3.3.6); and incorporates feedback from other wildlife management authorities, as appropriate.

IR Number: EC-11
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Source of toxicity in treated process water

Preamble:
Water will be managed on site through use of a Water Storage Pond (WSP) to enable recycling of water to the mill, treatment of excess process water and its release to a catchment pond and then by controlled release to adjacent Prairie Creek.

This release to Prairie Creek represents the final discharge point for an effluent as defined under the Metal Mine Effluent Regulations (MMER) of the federal *Fisheries Act*. These Regulations enable the discharge of effluent to fisheries waters as long as certain conditions are adhered to. One of these conditions is that the effluent is non-acutely lethal as defined by a standardized trout toxicity test.

The proponent describes the process reagents used in the mill as non-hazardous (section 6.10.2, page 190). However, water treatment testing, as presented in Appendix 2. Table 20 describes the tested process water (mislabeled as Mine Water in the title) as acutely lethal. An acutely lethal effluent cannot be released to the environment.

Request:
The proponent should more fully investigate the source of the observed toxicity in the treated process water and identify how it would be mitigated at the site, including but not limited to the water treatment plant. The proponent should fully develop contingency plans to manage toxicity in wastewater, including routine testing of water throughout the treatment system so as to ensure that toxic effluent is not released.

IR Number: EC-12
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Potential treatment requirement for Radium -226 removal

Preamble:
Effluent from the Prairie Creek mine would be administered under the Metal Mining Effluent Regulations (MMER) of the federal *Fisheries Act*. These Regulations require, among other provisions, the monitoring of effluent for radium-226 concentrations. Should the effluent be of sufficient quality, this monitoring requirement could be reduced in frequency.

Some non-uranium mines have encountered elevated radium concentrations that required addressing. Radium-226 removal can require specialized water treatment. Often it is best accommodated by design from the start rather than retro-fitting a solution.

It would appear that the proponent has not assessed potential radium-226 in the effluent.

Request:
The proponent should assess the necessity for any radium-226 removal in the proposed water treatment plant.

IR Number: EC-13
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Site Water Balance

Preamble:
Water from divergent locations will be managed through the Water Storage Pond (WSP), with the exception of some site drainage reporting directly to the Catchment Pond. A key to properly sizing the WSP and associated water treatment plant, as well as managing the controlled release to Prairie Creek from the Catchment Pond, is a reasonable understanding of the site water balance. An overall understanding is needed of the long-term balance of inflows and outflows, and in the short-term handling of extreme or seasonal variations.

Section 6 presents the site water balance for summer and winter, reflecting the seasonal variation of inputs. Tables 6-18 and 6-19 graphically present the assumed flow volumes (rates) for the components. A summing of inputs for the summer flows indicates a net inflow into the WSP of about 8.4 liters per second. A similar calculation shows that the winter balance also has a net inflow to the WSP of 9 liters per second. These values do not consider any water added to the WSP as a consequence of Catchment Pond safety return. Although it is recognized that in a season water could accumulate in the ponds; typically, water over the course of the year should be net zero, with no net storage of water in the WSP.

Request:
The proponent should provide clarification on the operation of the WSP and any revised inflows and outflows for this key water management component. And in related matter, the proponent is required to revisit its “event” water management plan to confirm the statement that extreme runoff and precipitation events could be accommodated in the WSP and related catchment ponds at the waste rock pile and underground sumps.

IR Number: EC-14
Source: Environment Canada/DFO
To: Canadian Zinc Corporation

Subject: Total Dissolved Solids within Prairie Creek

Preamble:
Canadian Zinc Corporation has estimated the total loads of zinc, cadmium and sulphate concentrations from treated mine water and process water into Prairie Creek, however, did not provide estimates for total dissolved solids (TDS) and total suspended solids (TSS). CZN did predict that the magnitude of the TDS loads would be similar to the predictions made for sulphate (approximately 50 tonnes annually). Later in the DAR, specifically in Section 8.6, CZN concluded that treated water and discharge from the catchment pond are expected to have low suspended sediment levels.

Request:
1) Provide the predicted TDS and TSS loading into Prairie Creek.
2) Provide the expected impacts to the receiving environment from an increase in TDS and TSS loads
3) Assess the impacts to the aquatic ecosystem from an increase in the TDS and TSS loads to Prairie Creek and describe mitigation measures.

IR Number: EC-15
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Spill Contingency Plan

Preamble:
CZN has provided a spill contingency plan for the current maintenance status of the mine site. The DAR indicates that a large quantity of sulphuric acid will be transported along the access road. Sulphuric acid is highly soluble and can rapidly decrease the pH in a receiving environment.

Requests:
1) Contingency for acid spills

On page 266 of the DAR, it is indicated that "great care and precautions will be taken to limit the potential for spills and leaks during the acid transfer and storage".

a) Please identify all specific measures that will be taken to exercise "care and precautions" for all aspects of acid transfer and storage.
b) Please provide a spill contingency plan with the worst case scenario spill of acid during transport along the winter access road as well as on the mine site

2) For all types of spills

a) Please identify the procedures that would occur if there was a spill on the access road, including preventative measures, how equipment and resources would be mobilized to site in case of a spill, mitigation measures, etc.

Under section 5.2.1 of the access road protocols provided in Appendix 28, it states that "any significant fuel spill will be reported to the environmental and minesite manager."

b) Please quantify a "significant fuel spill".
c) Please confirm that spills that are not fuel will also be reported.

3) Materials not amenable to landfarming

How will contaminated materials such as gravel and rocks be remediated and disposed of?

IR Number: EC-16
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Sewage treatment plant effluent quality

Preamble:
Monitoring of sewage effluent is proposed to be done monthly, and only for ammonia and nutrients. The DAR states in Section 6.18 that "monitoring need not be frequent. …Other constituents are not of concern because of the residence time and dilution in the WSP." The DAR also states that effluent targets are <20 mg/L for both TSS and BOD_5.

The contribution of camp wastewater to the nutrient loading may also have been underestimated as the sewage effluent has been discounted as a source of phosphorus, which tends to be a key limiting nutrient in productivity of oligotrophic waters in the North. It will be important to fully characterize the camp wastewater both for system operation and for tracking of nutrient loading, so that appropriate management response can be actioned.

Request:

1. How will an understanding of the treated effluent quality be gained in order to track and optimize performance of the sewage treatment system?

IR Number: EC-17
Source: Environment Canada
To: Canadian Zinc Corporation

Subject: Fuel Storage Tanks

Preamble:
On June 12, 2008 new regulations governing storage tank systems were enacted (*Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*). These regulations were enacted to reduce environmental risks associated with the storage of fuels and allied products.

Requests:
How will the project comply with the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*?