



EA0809-002: Canadian Zinc Corporation – Prairie Creek Mine

Meeting Report from the Yellowknife Technical Issues

Scoping Session

Compiled by: Mackenzie Valley Review Board (“Review Board”) staff
Location: Tree of Peace Community Hall
Date: October 9, 2008

INTRODUCTION

Review Board staff hosted five scoping sessions in several Dehcho communities between September 30 and October 3, 2008, to gather issues and concerns from all parties about the proposed Prairie Creek Mine, approximately 90 kilometres northwest of Nahanni Butte. In addition, the Review Board hosted a Technical Issues Scoping Session in Yellowknife on October 9, 2008. The Review Board will be using this meeting report, reports from other scoping sessions, all of the information on the Public Record (available at www.mveirb.nt.ca), and any follow-up scoping submissions from any interested parties (due October 20), to determine how to proceed with this environmental assessment.

While this meeting report is as comprehensive as Review Board staff could make it, this is not a verbatim document. It is based on notes by Review Board staff. Unlike the official statements made at Review Board hearings toward the end of the environmental assessment process, scoping sessions are less formal dialogues.

People’s names (other than developer’s responses) have not been associated with the individual statements they made at the session in this document.

Interested parties are reminded they can submit comments to be placed on the public record of the environmental assessment at any time. A digital recording of the session will also be stored in the public record.

Contact Alistair MacDonald at the Review Board with any questions or comments:

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ATTENDEES

In attendance (only those people who signed in or made their names known):

Alistair MacDonald – MVEIRB
Nicole Spencer – MVEIRB
Jessica Simpson – MVEIRB
Martin Haefele – MVEIRB
Tawanis Testart – MVEIRB
Paul Mercredi - MVEIRB
David Harpley – Canadian Zinc Corporation
Wilbert Antoine – Canadian Zinc Corporation
Alan Taylor – Canadian Zinc Corporation
Leon Konisenta – Nahanni Butte
Bob Wooley – AECOM
Yvonne MacNeill – Department of Justice, Canada
Karin Taylor – Department of Justice, Canada
Anne Wilson – Environment Canada
Jane Fitzgerald – Environment Canada
Myra Robertson – Environment Canada (Canadian Wildlife Service)
Ryan Silke – NWT & Nunavut Chamber of Mines
Joe Acorn – Nahanni Butte Dene Band
Peter Redvers – Crosscurrent Associates
Ryan Mazan-GNWT Health and Social Services
Joel Holder – GNWT Environment and Natural Resources
Gavin More – GNWT Environment and Natural Resources
Kelly Mahoney – GNWT ITI
Terri Bugg – GNWT Department of Transportation
Erika Nyyssonen – GNWT Environment and Natural Resources
Krystal Thompson – Indian and Northern Affairs Canada
Lorraine Seale - Indian and Northern Affairs Canada
Carol Mills – Indian and Northern Affairs Canada
Priscilla Canadian – Fort Providence Resource Management Board
Joseph Canadian – Fort Providence
Nathen Richea – Indian and Northern Affairs Canada (Waters)
Marjorie Fraser – Indian and Northern Affairs Canada (Lands)
Velma Stevenberg – Indian and Northern Affairs Canada (Mineral Development Division)
Lani Cooke – Canadian Parks and Wilderness Society
Sarah Olivier – Department of Fisheries and Oceans
Sheena Majewski - Department of Fisheries and Oceans
Kathryn Cummings – Park Canada

MEETING REPORT

The meeting commenced at 9:09am. Review Board staff member Alistair MacDonald provided a brief presentation on the environmental assessment process and the goals and role of the scoping session.

David Harpley of Canadian Zinc Corporation provided a presentation on the development description, comparing how the mine looks today (much of the infrastructure already exists) versus future plans. *NOTE: This presentation and the other presentation made by the developer are both available on the Review Board's website public registry for this file.*

Highlights of the development description presentation included the following:

- A list of existing permits and some notable components/management and contingency plans from six previous environmental assessments
- The developer's perspective that
 - a 2005 NWT Supreme Court ruling allows the winter road permit to be exempt from EA
 - CZN interprets this to mean it could apply for the original project proposed by Cadillac and go straight to permitting without EA
 - CZN's perspective is that Cadillac's plans do not meet waste and water management expectations of 2008
 - CZN's view is that this EA should not re-assess previous aspects of project that have already been assessed
 - The communities have stated time and again that main consideration is water, so that is what developer wants to focus on
 - The developer took the perspective away from the Dehcho scoping sessions that people feel there are good plans in place already, they need the jobs, and there is no need to re-evaluate components and plans that are already in place
- Three inspections for fuel farm; all three indicate it is acceptable for use
- Max Flood elevation re-assessment (2004); Cadillac over-predicted flood heights so the 10-12 metre berm is deemed safe from a 1 in 10 000 year flood event
- Some winter road sections eroded and the developer has been rehabilitating them. For example the Prairie Creek channel has moved, washing out the old road from 1981. Rock armor has been placed along the creek side to protect it from erosion
- Minewater has been coming out of the mine since 1980 via gravity; CZN was first to treat it starting two years ago.
- The developer's plan to backfill all tailings and some DMS float rock in a cemented pasted backfill to close off the underground works

- The repacking and removal of all sodium cyanide from the site in the summer of 2008; no plans to use cyanide in the milling process
- Runoff water from the hillslopes around the site have diversion ditches to ensure it does not intrude on site operations
- The Memorandum of Understanding with Parks Canada recognizing mutual interests, from the summer of 2008
- A walk through the mining and milling process – cut and fill stoping, followed by crushing, DMS, additional crushing/grinding in a ball mill, and flotation with non-cyanide reagents (analogy was detergent in a series of bathtubs), sand-like tailings left behind
- Tailings and float will become backfill, with cement added
- The developer also indicated there is slight potential for metals leaching in the waste rock (although not acid rock drainage), which is why they plan to locate the waste rock in one engineered facility rather than all over the site, with the drainage able to be placed into the site water management system.
- 440,000 cubic metres will be disposed in the “valley fill” waste rock pile
- Part of the former tailings pond will be used as a dry land temporary tailings storage pad facility, but all tailings will be placed underground by closure. Any runoff from pad will go into pond. Upslope diversion will stop water from infiltrating tailings pad except for direct precipitation.
- Part of backslope above water ponds slumped in recent years from melting permafrost.
- The developer has heard concerns about whether the pond was water tight. The developer will be relining it so it has a geotextile liner as well as a clay substructure. Pond A will be main feed source for the mill water needs. Pond B will take recycled water from mill and feed the water treatment plant. Old Cadillac plan was to use fresh groundwater all the time.

Questions and Answers

A variety of questions were raised in association with this presentation:

- A participant asked about the paste backfill plant. The developer noted that the tailings (sand size) and the DMS float (gravel sized) are mixed in the backfill plant, and then cement is added (different percentages for different underground applications) to make a concrete
- A participant asked, given that the concentrate and waste rock is being removed from the system and placed aboveground (either shipped off site or put in the waste rock pile, how the developer is making up the volume so that there is enough backfill to fill all the voids? The developer responded because the ore is so rich, there will be a substantial loss (in some places 50% by weight of the rock is ore); however, there will still be substantial volume left behind; the developer is absolutely certain that all the tailings and most of the float rock will be sent back underground. The issue is that volume is added to what is left behind (Tailings and float rock) through crushing, so the big concern is not leaving a void, but making sure the maximum amount of rock

goes back underground. The developer's priority is to put tailings underground first, then float rock, then waste rock if necessary.

- A participant asked what conditions might be present that would hamper the consolidation/curing of the pasted backfill. The developer indicated that it takes time to cure and set and this is important, because it needs to be pumped or trucked back into the mine. It is like the transport of regular concrete – it needs to be fluid.
- A participant asked what conditions are required for proper curing of the paste backfill and how mine water will affect those conditions? The developer felt the backfill will not be affected by temperature, but that water might affect setting. Temporary sumps may help to divert water away from setting areas. The participant asked about temperature effects again. The developer indicated that Golder Paste, their backfill experts, were likely including temperature in their considerations.
- A participant asked what is source of waste rock. The developer indicated the waste rock source is tunnels through the host rock to access ore.
- A participant asked if any of the site was constructed with previous waste rock? The developer was not sure, but indicated an opinion that most of the underlying material was from the quarry. Some of the waste rock is included in the mill feed pile in front of the mill, and some is on the slopes outside the adits. The participant asked if geochemical testing around site included the existing stockpile and the developer indicated it had and that material is relatively inert with some metals leaching potential.
- A participant asked if slope stability on site is being monitored now. The developer replied that inclinometers are being installed right now for that purpose and information from them will be provided during the course of the EA.
- A participant asked what the retention times for cells A and B are The developer indicated it is seasonal, depends on inflows and outflows, but the developer felt retention times are 3 to 4 months on average.
- A participant noted that by infilling portions of the existing ponds you decrease their volume. If, under normal operating conditions, there are problems with the water treatment facilities, what are holding times before water will have to be released? The developer indicated that water level management is important, in case of accedence's or seasonal variations. They noted that the ponds are very large, however. A peak 24 hours storm event would not raise the pond level more than a centimeter. The developer would use the mine as a temporary sump if need be so that water would not be coming out.

- A participant asked if the excel spreadsheet that produced the storage pond water balance information could be put on the public record for independent evaluation (referring to slide #44 in the developer project description presentation, available on the Review Board's website). *Review Board staff notes that Table 4-8 in the developer's Project Description Report refers to Developer's evaluation.*

10:27am - Health break

10:42am – The developer resumed its presentation, turning to consideration of transfer facilities and other transportation issues.

Questions and comments were fielded.

- A participant noted that the application for the transfer facilities indicate a desire to activate the Tetcela facility as early as November. This does not jibe with the 2007 Winter Road Permit, where the earliest allowable usage dates are later than November. Can the developer provide details of the 2007 permit, including permitted uses? The developer replied from memory that the winter road ends March 31, subject to the land use inspector.
- The participant also noted that the 2007 permit relates more to advanced exploration activities and cyanide removal. Does not seem to include transfer stations and moving of concentrate. What does permit allow Canadian Zinc to do? The developer referred the participant to the LWB website for the 2007 permit, and the LWB for their interpretation of the permit. The developer's interpretation is that the permit allows us to use the winter road as they see fit. The participant then read directly from the permit application, Section 5a, focused on rehabilitation of the existing road for site cleanup and advanced exploratory activity. This does not seem to include operational activities and the use of transfer stations. The developer noted that the transfer stations are new, and that is why they are subject to this EA, but referred questions of interpretation to the Land and Water Board for interpretation on how to use road.
- Another participant pressed on this subject, asking what was your intended purposes/intended uses for the road with respect to permit and did this include for actual concentrate removal? The developer again referred the question to the Land Use Permit application for the 2003 LUP application (issued in 2007). The developer did not want to get into the legal debate in this venue. Review Board staff noted that currently the Winter Road permit and its application documents are not on PR for this EA and that scoping submissions should indicate any concerns /points of legal interpretation with respect to the winter road use.

- The Canadian Parks and Wilderness Society identified that they may consider a Request For Ruling with respect to winter road permit interpretation.
- Some debate continued on whether the grandfathered road included the transport of concentrate. No resolution was come to; the developer's opinion differed from that of some of the parties.
- A participant asked whether cleanup for Kat and Granger camps would also be scoped into the assessment. The developer didn't see a need for it to be scoped in. INAC asked CZN what they wanted to do with those facilities, which has some infrastructure and materials on site. There is also some minor contamination, with soils, and at Cat some asbestos and lead paint. The developer has committed to appropriate cleanup at those sites under relevant federal and territorial rules. Some remediation will be done in accordance with legislation, but has no bearing on mine operations. The participant restated that they feel the contamination at those sites might add to cumulative effects, so the timing and plans for dealing with those contaminants may be relevant. The developer felt that asking the Review Board to help manage that tangential situation was "a bit of a stretch" and an unnecessary complication of the process. The developer felt they would likely take any contaminated soils out to a third-party facility.
- A participant asked about treatment of tank sludges. The developer did not think tank sludges were an issue in any reports they saw from inspectors. *Review Board staff noted that parties should provide as much detail as possible to the Review Board as to what are the major concerns here and why they should be scoped into the assessment. This issue (Cat and Grainger camps) had not been talked about in this EA previously.*
- A participant noted that the Nahanni Butte chief wants some element of evaluation with respect to winter road included in the EA. Annual haul time period should be clarified. It was their understanding that December 15 was identified in the existing permit as the earliest date for winter road use. This is important especially for woodland caribou TK discussion because overwintering caribou shift habitat use patterns during this time period. When will this timing be clarified? The developer responded that clarification will be provided before they use the road and that they will not use road without consultation with the regional biologist and communities. Certainly this will be taken into consideration.
- A participant noted that the 2003 application documents and the 2007 Reasons for Decision from the LWB both state that Winter Road will not be used until December, but new applications for the transfer facilities indicate that late November can see usage. The developer responded that the original, grandfathered permit had no restrictions on Cadillac's usage of Winter Road. *Review Board staff noted that the Board will make a*

determination regarding the scope of development using (as it always does) the input of legal counsel. If parties feel that certain aspects of development should be in scope, they should make it clear in their submissions. Anything else takes the form of legal debate and interpretation that we are unlikely to solve in a scoping session. We are here to hear your concerns, not necessarily to solve them today in this forum.

- A participant noted that there is a forthcoming Nahanni Butte Traditional Knowledge Project with respect to the South Nahanni River, up Prairie Creek and the Winter Road route– Nahanni Butte has whole route videotaped from a helicopter on DVD and will be giving that information to the Review Board. Other parties can contact them for copies.
- A participant asked whether the transfer facilities would only be used in winter. The developer replied that the Liard TF would primarily be used in winter, but some other functions for storage during the summer months of incoming supplies.
- A participant asked whether the developer anticipates any other permits for the development. The developer replied that it would likely need a couple of other permits fairly soon for a quarry at the mine site and an existing quarry along the Liard Highway. The developer has not made that application yet because they have not determined the amount of quarry material they require. Quarried rock will be used as base material for transfer facilities.
- A participant asked if Will CanZinc be storing chemicals in the same facilities as now – the reagent pad? The developer identified they probably would put some reagents at that site, although the developer may use other facilities they are building on site.
- Does CZN have plans with respect to maintenance/upkeep of the Liard Highway, since traffic will increase and the highway is in pretty bad shape to begin with? The developer's opinion was that was not their role, it is the GNWT's role. They have had some discussions with the territorial government. Obviously mine operations will increase the traffic. Any plans for a shared responsibility will have to be addressed in the future. Discussions have not reached that stage and it had not been broached by DoT with the developer yet.
- A participant noted that the winter road passes between two valleys and what work to map wildlife has been done, especially with respect to incorporation of TK? The developer noted that a winter road helicopter wildlife survey was completed in April (of 2007?). Traditional hunting occurs, some trapping as well. We know where some of the trap lines are. Discussions with the communities have ensued, and the offer of compensation has been made (to Nahanni Butte), negotiations have not concluded at this time. CZN is open to

further consult with the bands. The wildlife survey results were filed as part of the Tetcela Transfer Facility application.

The developer then provided a presentation on their initial environmental impact assessment on key Valued Ecosystem Components (VECs). This focused on:

1. **Air Quality**
2. **Water Quality and Fish**
3. **Wildlife and Habitat**
4. **Cumulative Effects**

Questions and Answers

Questions were fielded on each VEC in turn.

AIR QUALITY

- The developer clarified that they would not be completely eliminating the use of propane to heat the mine in the dead of winter. Most of the heat will be coming from a glycol recovery system.
- A participant asked about Dust Suppression methods? Will you use Calcium Chloride? The developer stated that water would probably be utilized. Mills also have dust suppression systems to minimize health risks. The site does not get too dry so water use is not expected to be high.
- A participant asked of the incinerator is a “dual chamber, high temperature” unit. The developer replied that it was. The participant suggested that burning of sewage sludge is not appropriate because it requires high temperatures and causes increased emissions. Is the developer open to other alternatives for treatment of sewage sludge? The developer replied yes they are open to other solutions, but this will require GNWT consultation. The developer’s primary concern is to minimize wildlife attractants
- Can developer provide further info on sewage treatment plants and the nature of the sludge and how it would be dewatered. Yes, although it was felt that was more of an engineering stage question. The developer noted that other alternatives include putting sewage sludges in with paste backfill. A participant noted that other proponents have been putting sewage sludges in their waste rock piles.
- The developer felt that the transfer facilities will have few air quality effects. A participant asked how the noise will reverberate down the valley. The developer replied that the noise in the transfer facilities themselves will be trucks stopping starting, offloading at transfer facilities. Noise with respect to transfer facilities limited. Noise on road is on road and unrelated to the

transfer facilities. The participant asked about smells from burning gases at the transfer facilities. The developer did not feel this would be a big issue.

- A participant asked what baseline monitoring for Air Quality has been occurring. What parameters are you monitoring for? CZN replied it has considered passive monitoring for NO_x and Sox, but not for particulate matter because their consultant Golder Associates feels that parameter is not relevant. The representative from Environment Canada noted that particulate matter is relevant from a human health perspective, and recommended that the developer talk to the EC expert, Dave Fox, about setting up a monitoring program with appropriate parameters.

WATER QUALITY

- The developer noted that right now, the mine water is coming out with elevated zinc between 5 and 15 ppm. Currently using sulphide which is a good reagent to remove metal. Lime is not used because it is too heavy to fly in. Water will sit in ponds for some time, and much of the metals will settle out there. It is felt that the water will actually reduce in metals content for that reason, and also because of the new water treatment plant. Developer is still refining the treatment process and does not know which reagent will be used during operations – alternatives being considered.
- A surveillance network program will be required by the LWB, and the developer will be required to have an Environmental Effects Monitoring Program (as required under the Metal Mining Effluent Regulations) and an Aquatic Effects Management Plan (as a part of the water license).
- The developer feels that the huge dilution potential of Prairie Creek is of benefit. Flow rates near the mine indicate that mine outflow will represent only a tiny fraction of Prairie Creek flows. All CCME parameters should not be exceeded. The developer noted that water samples from downstream last year suggests that current releases have not been significant. Review Board staff asked where the downstream locations were; the developer responded it is about 2-300 metres. Upstream numbers were much the same, maybe slightly lower – all that info is on the website.
- A participant asked how the dilution factor was figured? Water survey of Canada data was used.
- A participant noted that there was evidence water from the mine may have elevated levels of mercury and arsenic and this was cause for serious concern. The developer responded they do not see this in the mine water. Mercury and arsenic is present in the ore, but it is bound in the lattice with the concentrate and will not leach out.

- The pond has water in it that is pumped in from the creek. Will water remain in pond when developer alters pond? The developer will use cofferdams to accommodate reworking and re-profiling, relining of pond.
- A participant noted the developer feels site runoff diversion is working well – has the amount of runoff been tested? The developer noted that it has not been tested, but that the groundwater table is shallow in the area so any runoff that infiltrates the site will likely report to the catchment pond and not directly to Prairie Creek.
- The developer noted they are doing additional groundwater testing and will report on that. A participant asked how many groundwater sites they are you testing. The developer noted there are about six sites being tested.
- A participant asked what are the anticipated lead concentration in water? The developer noted that they are within compliance limits and lower than zinc.
- A participant noted the developer will likely be doing exploration for future mine use. In your plans, are you incorporating a larger waste rock pile to fit with this expansion? The developer felt there is lots of room above the existing planned waste rock pile to expand as necessary.
- A participant noted that runoff will be diverted around the Waste rock pile. Will the pile itself be lined? No, for two reasons. One, the rock is not high in metals content, according to geochemistry studies. Secondly, the pile is above the mine workings and it will flow into the underground works instead.
- Is there any thought for groundwater wells downstream of the waste rock pile? Yes, to test water quality in Harrison Creek.
- Are you performing freshet characterization studies? The developer can estimate that spring runoff using numbers from flow chart.
- Review Board staff asked about the use of the word ‘potential’ on designs and plans for a sediment settling pond at the base of the waste rock pile? The developer replied that was a poor use of words and there will be a sediment settling pond at the base of the waste rock pile. The developer noted one main factor for putting the waste rock pile up at that location is to get the waste rock away from the Prairie Creek floodplain.
- A participant asked if the developer would address the sensitive and rare nature of bull trout in creek (i.e. impacts from sedimentation, construction of winter road)? Developer knows that bull trout are in Prairie Creek. Developer does not feel the discharge of sediment will be an issue. Concerns came up previously and the developer did some monitoring and the findings were that nature itself is by far the biggest contributor to sedimentation. The developer

will use sediment control wherever necessary. The large amount of water in the system mean that the mine will not cause high elevations in metals to affect fish.

- A participant asked whether there are any fish downstream of the development that have protected status? There are bull trout up and downstream, arctic grayling. No known protected status.
- With respect to compliance, where does the developer define as the “end of pipe”? The developer replied that they were assessing at the discharge from site, out of catchment pond into Harrison Creek. The participant felt the compliance point should be at treatment plant because this is the last point of control, there is minimal control at the polishing pond or catchment pond. This would likely be the compliance point of the MMERs; the developer should talk to MMER folks about location of the compliance point. The developer felt that the internal compliance point should be at the catchment pond, where they could close the gate to stop water release. The participant asked how much retention time in cells if not water for discharge is not compliant? The developer stated it was not indefinite. Environment Canada would like to see prediction of Water Quality at the last point of control.
- Developer predicts a water inflow to mine at 40 litres per second. How were numbers derived? The developer is not sure how much water will come in, that is a projection only, and that is why the water treatment plant capacity will be adaptable. Right now, the winter mine outflow stops completely. How much water will come with expansion of mine workings is subject to debate. The developer is not sure how the rock mass will behave during mine operations. Currently, water only comes into mine through cross cuts in tunnel. The tunnels are usually dry their entire length. The developer considers it feasible that using paste backfill to replace the high water flow through the mineralized vein will choke off mine outflows over time, and that outflows may actually reduce.
- A participant asked has the developer considered Impacts of environment on project (ie significant rain events.) The developer has noted small increases in inflows after rainfall but doubt it will be catastrophic. The developer expects that mine pumping rates will reduce over time rather than increase.
- A participant asked about water monitoring and management requirements post closure. The developer noted that Cadillac built the mine to drain water via gravity which will be a challenge. Paste backfill may close off that drainage point over time. There is still the possibility of interaction between backfill and groundwater, which the developer is assessing. As the mine moves deeper underground, the gravity flow will alter and move into the deeper portions of the mine, making it a pump out operation. Current concerns are that with gravity outflow, there are no options to increase water

retention times (ponds will fill up) if there are accedence's or system treatment failures. That is a consideration that needs to be looked at closer, according to the participant. INAC's closure and reclamation guidelines were recommended for the developer to study.

- A participant raised concerns that the developer is not sure of the interaction b/w groundwater and paste backfill over time after closure, given the South Nahanni River is at risk. The developer noted they are not completely clear on how much interaction will be, or the limit of leaching, but they are going to look at this closely during the environmental assessment.

12:01pm lunch break

At 1:15pm, the session reconvened with the developer continuing discussion of water quality.

- A participant asked what the source and volume of water for winter road operations would be. The developer stated that for many portions of the winter road water will not be needed. Removal of brush is required in many stretches. Where water is needed it will be sourced from a number of small lakes along the road subject to DFO and MVLWB requirements for maximum water extraction. Terms and conditions apply.

WILDLIFE

- A participant noted that despite being grandfathered the winter road still has to conform to contemporary standards, and that therefore, even if there is no significant change in operation different treatment may be needed. Caveat of the Supreme Court ruling. Therefore, hopefully some of the new traditional knowledge will be incorporated by the developer. Canadian Zinc does not have any problem with living up to territorial and federal regulatory requirements. The point CZN was making is that wildlife has been looked at closely already, and secondly, since no significant changes are proposed there should be no need for new wildlife studies.
- A participant asked whether all existing documentation would be provided for the public record. CZN will submit a list of documents they feel are relevant to MVEIRB.
- A participant noted that wildlife surveys were not done in winter when transfer station in use, how can results apply? The survey the developer did was done in April, i.e. end of winter road season, updated prior work by Cadillac, and the results found several tracks but very few animals, not many animals expected in winter.
- A developer asked how the developer would deal with SARA species during the EA. The developer thought this was part of regulatory, and was

addressed in phase 3 Drilling EA, and didn't think needs to be included in this EA. *Review Board staff noted that Section 79(1) of SARA requires the MVEIRB identify any species that need to be assessed to the responsible authorities (EC and Parks Canada in this case). Section 79(2) also needs to be considered when impacts and mitigation determined. Environment Canada recommend MVEIRB include SARA requirements in its ToR.*

- A participant noted that the scope of the Phase III Drilling EA was obviously different then, so whether or not wildlife impacts can be compared is in question. It was also noted that there is no significance test for SARA mitigation, just a test for adverse effects, all of which require mitigation.
- A participant noted that most operations now have a land farm? Yes, there may be a small facility to deal with contaminated soil.
- A participant from Nahanni Butte wanted all of the winter road included in the environmental assessment and stated that separation of the elements such as the transfer facilities from the winter road was not appropriate for the purposes of environmental assessment. The developer noted that the Majority of Nahanni Butte does not feel as the participant indicated.
- The participant also argued that the presence of a permit is irrelevant; the fact is that new impacts will occur and the only possible distinction is between cumulative vs. direct impacts – they will need assessment somehow. The developer again disagreed with the participant and reiterated the point that the community of Nahanni Butte as a whole did not feel this way.

CUMULATIVE EFFECTS

- The developer noted that water quality protected by big dilution factor alone, but also that current study results show minimal impact from many years of mine water release. Studies by the University of Saskatchewan cited. Increased algal growth noted but minimal (no noticeable) impacts on fish.
- A participant asked whether an all season road is still envisioned. The developer replied this was planned a few years ago but eventually found that for various reasons including environmental considerations and cost this was not the preferable option. Information on the CZN website about vision of all-season road should not be on there.
- A participant asked about renewal of existing permits. The developer noted that they have applied for new permits to continue treating water. Water license has been renewed for five years and LUP for two years. They have no plans to do more work on decline and pilot plant per se.
- A participant asked what “detergents” are used in the flotation process? The developer replied that there is copper sulfide which is a metal based

compound, but the rest is organic; all are non-toxic and will precipitate or settle and break down in water ponds. No cyanide will be used.

The developer's presentations were completed at this point. Review Board staff opened the floor for discussion.

A participant gave an update on Nahanni Butte's Traditional Knowledge Assessment:

- Initiated by chief and council to gather information in an organized fashion to make sure EA process (and other processes and developer) is fully informed of ecological and traditional values in the landscape.
- Chief and council want information from all sides, traditional and technical
- Mandate is to look at values embedded in the entire landscape not limited to scope of this assessment necessarily.
- Nahanni Butte has a three-pronged approach to this development assessment, with some money funded by INAC and Resources Pressures Funding. The three prongs are:
 1. Traditional Knowledge Study
 2. Regulatory expertise and support/consultant
 3. Community economic development planning and capacity building to take full advantage of the proposed development, including IBA and other consultations (not yet funded)
- Nahanni Butte's general boundaries for the spatial scope of the EA are the area from Nahanni Butte village up the South Nahanni to the mouth of Prairie Creek, up Prairie Creek and along the haul road back to the Liard Highway.
- Nahanni Butte has videotaped all the route up Prairie Creek and the winter road and elders and other land users are looking at that video and identifying potential impact areas and how those impacts can be mitigated.
- The developer responded to the comments made about traditional knowledge, stating they were unsure what role TK plays in EA vs. regulatory. They respect the Nahanni Butte Dene Band's desire to document traditional values. They see it more as a tool to design project in early stages but since most of this project is already in existence they question relevance of any new TK study. *Review Board staff ensured all present that TK inputs are required under the MVRMA alongside scientific knowledge and will be included in any Terms of Reference.*

A representative of the Canadian Parks and Wilderness Society gave a verbal presentation (most of which is also available in the CPAWS formal scoping submission of October 20). Highlights included:

- Nahanni National Park Reserve creates legal obligations (under Canada National Parks Act) for Canada to protect the ecological integrity of the park and world heritage site, unimpaired for future generations.

- UNESCO concerned about ongoing exploration and recommended that park be further expanded to protect South Nahanni watershed, specifically citing mineral exploration pressures.
- Dehcho First Nations and LUP Committee are working hard to protect the land and this is reflected in proposed expansion of NNPR
- Northerners are committed to protecting ecological integrity
- UNESCO World Heritage site designation adds additional impetus for federal government protection of this area; World Heritage Site belongs to all people of world but Canada is responsible to ensure its protection
- CPAWS recommends the development proceed to an Environmental Impact Review based on fragility and importance of the ecosystem, its local, regional, national and international importance
- The developer responded, stating it also wants to protect ecological integrity of the national park. They referred to the Memorandum of Understanding CZN has with Parks Canada; not talking about park *or* mine, we are talking about park *and* mine; Prime Minister has mentioned about expanding park but only if respecting existing rights. CZN feels the best thing the Government of Canada can do is let CZN mine, that is the best way to resolve existing mine drainage issues, which will be ongoing if the mine does not remove the minerals and plug up the mine. The developer feels the referral to EIR is premature; communities in the Dehcho are in favour of the mine going ahead; we need to think carefully and focus the assessment on key issues and new components and not unduly delay the process.
- A participant asked if anyone from Parks Canada could explain the MOU. A representative from Parks stated that the mine will be a neighbour to the park if it proceeds. MOU recognizes Parks Canada's mandate to preserve nature, and that Parks Canada will not affect reasonable access to the Prairie Creek Mine. The mine site will never be part of the park. It will be surrounded by the park, but not part of it.
- A participant asked what the MOU says with regards to road and the transfer facilities? Will the road be in the park or excluded from it? The representative from Parks Canada noted the road decision has not been made yet and no deadlines have been established for that decision or for the expansion being finalized.
- Wilbert Antoine, an employee of Canadian Zinc and member of DCFN gave a presentation. Impacts on the waters in that area are impacts on each and every member of the Dehcho, especially people of Nahanni Butte. The developer has committed to do everything in its power to protect the water and the land. He noted that in the communities during scoping sessions, concerns were raised about traditional land use, water, socio-economic effects, effects on wildlife. He stated his opinion that CZN will do everything to

prevent adverse effects on environment. Communities are in favor of development.

- Leon Konisenta of Nahanni Butte, who has worked with CZN since 2004, also spoke. Nahanni Butte has few opportunities for development; therefore, project will bring badly needed jobs to area. Cost of living is so high, no money in community to build an all-season road. There is nothing for young people to do in Nahanni.
- *Review Board staff clarified that positive comments about the development should be brought forward where they exist – the Review Board considers beneficial effects against adverse impacts very carefully.*

A Health Break was called at 2:30pm. Participants were invited to look at the comment cards on the wall, and the group reconvened at 2:47pm.

Review Board staff recapped the discussion so far and put the four main scoping questions up for final comments from the floor.

Final Questions and Comments

- A participant noted that risk assessment need to be considered during the EA, especially what contingency plans will be in place? Specifically, the potential for groundwater erosion and contamination from the concrete tailings backfill was cited as an example.
- A participant noted that geotechnical stability of project components has not come up much during this scoping session and asked what work was being done. The developer replied that the stability of the main dyke is assessed annually. An upcoming engineering study will assess seismicity and landslide possibility on site, especially of water ponds and waste rock pile site for landslide risk. The developer noted that Worker's Compensation Board deals with safety underground and this has already been assessed.
- A participant noted concerns about cumulative effects from losing concentrate during transport along the winter road corridor – Red Dog Mine in Alaska was an example of contamination from a transport system. Will there be mitigation and monitoring along the corridor? The developer stated that they will only be moving bags in winter. They have no intention of losing concentrate for environmental and revenue reasons. Moisture content will freeze concentrate and it will not be mobile. It is easily cleaned up in winter conditions if there is a spill.
- A participant asked whether trucks will be covered. No, but it will all be in bags.

- A participant asked how will bags be moved around. The developer identified by loader or forklift, as pictured in the presentation. The participant felt those bags are notorious for ripping. The developer replied that the bags are actually very strong and can only rip if a fork goes into them. Each site will be prepared for spills. CZN will maintain clean operating environment.
- Will the road be private use only or will community access be allowed? The developer noted lots of different opinions on this matter. INAC considers it a public road, GNWT believes it to be a private road. Communities are concerned because they don't want to be prevented from using the road, and CZN has no problem with that. CZN would like to have the ability to control road so that people from outside the region don't use it for hunting. Potential for that is limited given much of it is in a no hunting National Park. Bigger issues is public safety along the road and collision avoidance.
- Will/can the road be used for Public access into park by Parks Canada? Parks Canada did not know yet.
- A participant asked whether the developer will use international standards for bag strength. The developer indicated they have already sourced some bags that meet international standards.
- Risk assessment of climate change scenarios. With regards to 100 year events, how will these affect the economics of the operation? What if there was no precipitation or high precipitation, annual or over a storm event? How would this influence geotechnical stability? The developer noted that low snowfall might influence the annual time period of the winter road. The dyke is high enough for a 1 in 10,000 year event so the developer feels secure in that regard. Runoff diversion systems might be put under more pressure by high precipitation.
- A participant asked what would happen if concentrate was stranded at Tetcela by premature closure for a summer. The developer felt it would be fine. A follow-up question was What are the developer's emergency plans for stranding fuel, concentrate etc. if road shuts down early due to spring thaw? The developer indicated that the removal would either be by air or waiting until the following winter. Fuel especially might have to be flown in.
- A participant asked what is the fuel capacity at transfer facilities. The developer stated that there would be no fuel at Tetcela. Storage at Liard is not a huge tank. Big enough to keep trucks refueled as they come in. Information in the Project Description Reports. (10,000L was the stated amount)
- What are the plans for hazardous waste disposal? It will be hauled out to a suitable disposal location. What facilities they will you use for disposal depend on the type of waste. A participant noted the GNWT has an unwritten policy

that the waste-accepting community not be in violation of their own water licenses and land use permits. What are the developer's plans with respect to waste disposal? The developer will not use community landfills, only specialized facilities for hazardous wastes.

- Could settled material (in ponds) be used to cover the Waste Rock pile? The developer indicated the settled material will be considered tailings and used as backfill.
- What are the reasons for lids on concentrate? To keep moisture out, this can cause penalties at the receiving smelter.

Review Board staff thanked all those present, as did the representatives of Canadian Zinc Corporation. The next steps in the EA were discussed with participants.

The meeting was adjourned at 3:30pm.

COMMENTS FROM INDEX CARDS SUBMITTED OR NOTED DURING THE SCOPING SESSION (Note: Review Board staff has subcategorized them):

Questions/Comments on How the Project Works

- What is the composition of all the reagents used to separate minerals?
- Could settled organic material from reagents be put into the Waste Rock Pile or [paste] backfill?
- Are the bags being used for transport safe and certified?
- What is the estimated amount of quarry material?
- How much time will it take for the "paste" to harden?
- Where is the waste rock from previous underground work (Cadillac)?
- What is Paste Backfill made up of?
- How will temperature affect the paste inside the mountain?
- What are the retention times of both ponds?
- What consideration has been given to impacts of the environment on the development?
 - Pond ice effects on capacity or water transfer
 - Ice entrainment in tailings
 - Effects of climate change—"cradle to grave"
- Other permits will probably be ones for quarry sites.
- Vein is convolute of water.
- Where is the compliance point?
- There is a plan to have a settlement pond for WRP.

- Is the WRP going to be lined? No.
- Will current water in pond be pumped out? What will happen to it when the liner is put in?
- Which consultants are being used?-Golder
- Will Tetcela TF be used beyond winter months? Import use and export use.
- Closure
 - Full decommissioning details are needed.
 - Where will soil cover be obtained for WRP?
 - Effects of sourcing soil?

Winter Road

- Impact of road and transfer facilities on traditional harvesting; need to protect local interests and limit access to outsiders
- Where is the water coming from to build the Road? How much water is needed?

Materials Management

- Where will chemicals be stored? On storage pad near magazines?

Terrain and Soils

- Slumping of hill slope near ponds; will this continue?

Monitoring and Management Systems

- Will the slopes around the mine be monitored [for seismic activity/slumping]?
- How far downstream is the extent of current and proposed water quality testing done/envisioned?
- Are groundwater wells being monitored regularly?
- The developer should present a monitoring framework that:
 - Demonstrates proponents ability to detect change and use adaptive management before changes become impacts
 - Harmonizes monitoring requirements of the SNP [surveillance network program], water license (Aquatic Effect Monitoring Program), and Environmental Effects Monitoring (under the MMERs)
 - Covers air, water wildlife, climate

Water and Fish

- What are the results of lead testing on site water?
- What are the results of sediment turbidity tests?
- Will there be any efforts to curtail inflows from the underground works [during mining]?
- A test should be done on whether there is drainage of groundwater from the mine that is not being captured by the site catchment system

- Mercury and arsenic leaching is a great concern of some parties, especially impacts on water and aquatic life
- Bull trout sensitivity, both at the minesite and along the winter road
- The developer should identify fish species that may be overwintering in rivers/creeks along the haul road, and mitigate accordingly
- What is the protection status of fish upstream and downstream of the site?
- The developer noted that currently there is no way to control the outflow from the mine, all of which currently comes out of the 870 level
- Water Permit was applied for. Have it for another 5 years. Was applied for so that CZN can treat the water.
- Effluent Quality
 - Ammonia – source control
 - Predicted concentrations
 - Demonstrate non-toxin at the end of pipe
 - Treatment contingencies
 - Metals- concentrations
 - Salinity- deep groundwater?

Accidents and Malfunctions

- Emergency planning and preparedness required for the mine site, winter road, and the transfer facilities; plan should predict [possible failure modes] and propose mitigation [for scenarios]
- Will Canadian Zinc be using proper bags for concentrate that meet safety standards?

Air Quality

- Is Canadian Zinc open to alternatives for incineration – e.g., should sewage be incinerated?

Socio-economic Impacts

- The developer holds that the community wants the mine for jobs but in an environmentally sustainable way
- A participant noted that Nahanni Butte needs the economic benefits of the mine and reiterated a concern earlier brought up at the Nahanni Butte scoping session – that training certifications are starting to lapse and will need to be renewed while waiting for the mine and winter road to start
- “A portion of mine profits should be diverted to supporting alternative sustainable economic developments in surrounding communities – so that local people are not dependent on mining. Canadian Zinc should profit share equally with local communities and contribute to local development infrastructure (not just via disposable income).

Wildlife

- Landfarm
 - Deterrence of birds from landing in liquids ponded
 - Operation & closure aspects

- Wildlife Management Plan will be put on PR site
- TF and wildlife management issues
 - Study conducted at the end of operation season
- Species at Risk (SARA)
 - Regulatory requirements that will be followed by CZN
 - Section 79 –SARA any species must be identified if any potential adverse effects exist
- Waste Management and Wildlife
 - Landfarm for containment soil
- Evaluation of Waste Rock-clarify with respect to caribou habitats in December ...
- What work has been done on waste rock regarding wildlife-spring 2008 study

Public Safety

- Safety of workers inside shafts

Cumulative Effects

- It is in the best interest of the Environment for the Mine to operate (developer)
- Cumulative effects regarding old sites

Social Impacts

- Social problems of increases income need to be addressed wrt drug/alcohol/violence.
- Decision making processes must support consensus in affected communities & not cause divisions (ie, pro/con certain aspects of project)

Cultural / Heritage Impacts

- Impact on cultural sites & values identified through TK research-some key site have not been identified publicly
- What role does TK serve in this EA? As TK is usually for facilities construction, this Mine is already built (Developer)
- TK will help with wildlife management information.

Park

- Need to know who is using the Road
- The mine would not be a part of the Park
- CPAWS recommends EIR
- Have to make sure the Mine will Not have negative impacts on the Park-ecological integrity of the Nahanni.
- We all have responsibility to protect the integrity of the Nahanni.

Baseline Data Gaps

- What is interaction potential og backfill and groundwater runoff?

- Any studies on WRP area?
- Retention of catchment pond- predictions?
- Filling stopes in this manner - has it gone under review before?
- A participant would like to see studies of wildlife, water and air quality all in one synthesizing results history report
- Demonstrate comparability and adequacy for EA
- Need to provide supporting docs on the Backfill method, specifically the effects of moisture/ water on curing rates of backfill mixture (tailings)
- More information on remediation plans of the mine. Cat-Grainger camp has been transferred to INAC for tax payers to pay for. CZN should pay for it, yet they propose more developments
- Has there been any study on WRP being increased or extended if Life of Mine increases?

Scope of Development

- Any maintenance plans on Liard Highway. Plans for CZN?
- Noise study from Tetcela TF-is there a need
- Air quality impact on road.
- Dates on winter road permit?
- Is operation of Mine included in 2007 permit of road
- Spatial Extant- transportation route over time leaves a big footprint
- Ore transport
 - What mitigation will be used to prevent contamination along the transportation corridor
 - What monitoring will be done for concentrate constituents along the corridor
- Scope of last EA is different than the current
- The proposed use of winter road and TF is different from 1982 permit scope which was grandfathered for current use. Therefore the new use requires a new LUP application or consideration in these EAs
- Tetcela and Liard TF LUP applications should be reviewed as 1 LUP including the Winter road. – Because current project splitting does not accurately and completely reflect actual proposed use (using ore road w/r transfer facilities)
- Cat/ Grainger?
- Need to assess the vehicles going into and out of TF and not just TF
- Road is legal issue that has been settled (developer)
- Will old camps be scoped in?
- Grandfathering would cover operations (developer)
- Legally what can road be used for?
- Existing studies/ plans that should be considered?
- CZN needs to engage with the GNWT-DOT in regards to plans to prevent contamination along transportation corridors –also to discuss CZN quarry plans and road maintenance

- Rout in on Video by Nahanni Butte from facilities to Mine site (for information)
- Any talk on privatizing the Road?

Hazardous Waste

- Will not be kept on site(developer)
- Is there agreement with any community for waste?- no community will get any hazardous waste.

Risk Assessment

- High and lows of snow and consequences. Rain effects.
- Climate change effects on Mines economics
- Emergency plans for supplies-fuel, concentrate etc. vehicles
- Possibility of shorter winter season-how it would affect moving concentrate
- Problem of losing concentrate on road from bags –ie, red dog project
- Is CZN prepared for cleanup if bags tear open?
- Harrison Creek-geotechnical stability-WRP-berms?
- CZN needs to provide a full Risk Assessment Study identifying all ecological receptors, migratory pathways, impacts, guideline criteria and proposed mitigation plans