Mackenzie Valley Review Board

June 24, 2015

Mr. David Harpley
VP, Environment and Permitting Affairs
Canadian Zinc Corporation
Suite 1710 – 650 West Georgia St
Vancouver, BC V6B 4N9

To Mr. Harpley,

RE: Review Board response to CanZinc letter dated June 16, 2015

The Mackenzie Valley Environmental Impact Review Board (Review Board) has carefully considered the letter submitted by Canadian Zinc Corporation (CanZinc) on Tuesday June 16th, 2015 outlining its primary concerns with level of detail of the Adequacy Review. The letter described concerns which could broadly be categorized as relating to baseline information requirements, the level of engineering detail, and the management plan requirements.

The goal of the environmental assessment is for the Review Board to determine if significant adverse impacts are likely. The Review Board determines this by developing a firm understanding of the risks associated with the development and its components. It is only once the Review Board understands the risks (considering their likelihood and severity) that it can assess the potential for likely significant adverse impacts. Only then can the Review Board evaluate the effectiveness of the proposed mitigations and determine if additional mitigation is necessary.

Part of this process involves understanding and considering the alternatives to individual project components. Therefore, CanZinc needs to clearly describe what the alternatives were to specific components (such as alternate road alignments) and why the chosen alternative was considered to be the best option. This is particularly relevant to specific adequacy review items raised by CanZinc, and is further described in detail below.

In this letter, the Review Board is only responding to those sections of the Adequacy Review addressed by CanZinc in the attachment to its letter and the supporting appendices. Information provided below, in this letter, is additional to the details set out in the Adequacy Review. This letter does not affect any of the other adequacy review items. All items in the Adequacy Review need to be responded to in order for the EA to progress to the information request stage.

Submission of reports and material from previous EAs

Section 1.5 of the Terms of Reference acknowledges that studies and reports from previous environmental assessments can be used to support the Developer's Assessment Report (DAR). The

section advises that referenced studies and reports or information from previous assessments must be submitted to the Review Board by CanZinc or other parties so they can be placed on the public record specifically for EA1415-01.

In its June 16 submission, CanZinc included lists of reports that may be relevant to EA1415-01. Please submit studies or reports that have not already been provided that may support the requirements of the May 22, 2015 Adequacy Review and DAR in accordance with Section 1.5 of the Terms of Reference. For the documents submitted, CanZinc will specifically state where the relevant information is located.

Concordance table

The Review Board understands that CanZinc will provide a concordance table showing where each numbered item listed in the Terms of Reference can be located in the DAR, the DAR's appendices, and the DAR addendum to come.

Below is the Review Board's detailed response to the items raised by CanZinc.

The section numbering below is consistent with the numbering within the *Adequacy Review.*

1.1 Summary of Adequacy Review findings

Project description

The Review Board understands that the all season road has been designed to a particular standard and that the design does consider the challenges of the terrain. The adequacy review statement from section 1.1 reflects several other items in the Adequacy Review which are needed for the Review Board to assess the road.

As stated in section 4.5 of the Adequacy Review, CanZinc will provide the SNC Lavalin report which states that runaway lanes are not warranted.

1.2 Assessment steps

The assessment steps outlined in sections 4.1 and 7.1 of the Terms of Reference reflect what is required by the Review Board to conduct its environmental assessment. As CanZinc described the specific sections where it has concerns related to the prescriptive nature of the assessment steps, the Review Board has commented in each relevant section outlined in the CanZinc letter.

Generally, completion of all impact assessment steps is required for key lines of inquiry, and a less rigorous approach may be acceptable for subjects of note.

Professional judgement may be used, but it must adhere to the requirements of the Terms of Reference. The impact assessment steps related to the use of professional judgement are described

in the preamble to steps 10 to 15 in section 4.1 of the Terms of Reference. Where CanZinc uses professional judgement to describe the potential effects, the decision-making process and the assumptions of the professional will be clearly described. It is not sufficient to state that the conclusions about possible effects or significance were based on professional judgement; rather, CanZinc needs to describe how and why it reached its conclusion.

Section 4.1 of the Terms of Reference requires a summary matrix to describe potential impacts. The table does not negate the need for detailed descriptions of each potential impact. Each potential impact to a valued component should be described in full. This should include the nature, geographic range, timing, magnitude, reversibility and likelihood of each impact (impact assessment steps 10 through 15). The summary matrix table can be used to provide an overall conclusion which accounts for each individual valued component. For example, if considering the effects to vegetation, impacts may be: the effect of dust on existing vegetation, the effect of potential invasive species, and edge effects along the road. Each of these effects should be described in the text of the DAR with a statement describing if each of the potential effects is significant. The matrix table could be used to summarize the overall potential effects to vegetation and the overall significance determination for vegetation given the significance described for each of the potential impacts.

Specifics on required impact assessment steps are described in the relevant sections below.

3.1 Consideration of alternatives to the development

The clarification provided in the letter was appreciated. However, a "no project" scenario still needs to be described. A "no project" scenario is considered to be the existing and approved winter road and mine (EA0809-002) (that is, with no all-season road). CanZinc asserted that the winter-only road was appropriate and sufficient during EA0809-002. The Review Board needs to clearly understand what has changed since the last EA such that a winter road is no longer considered the best alternative for moving concentrate to market.

Clear indicators are needed for all of the accounts of the multiple account analysis (technical, economic, environmental, and socio-economic). As stated in the Adequacy Review, the same indicators will be used for all of the alternatives. For example, for the economic account, the amount of gravel needed (and associated cost) will be described for all alternatives. For the environmental account, an example indicator could be the effect of spills to aquatic species. As stated in the Adequacy Review, the alternatives analysis will consider the differences for the projects as a whole as well as the different project stages.

4.8 Freeboard at watercourse crossings, and 4.9 Estimated peak flow rates and water surface elevations

The Review Board needs a clear understanding of the risks associated with the project and the project components. It is only once the Review Board understands the risks that it can assess the

potential for a likely significant adverse impact, whether and what mitigation is needed to address the potential impact, and evaluate any proposed mitigations.

For watercourses and watercourse crossings, the risks may relate to the ability of infrastructure to withstand peak flows. CanZinc needs to explicitly describe how the crossings were chosen, and if and how the crossing will be able to withstand peak flows. If the locations were based on quantitative analysis of flood flows and erosion potential, that will be described. If it was done qualitatively, based on professional judgement, the decision-making process of the professional will be clearly outlined so that the assumptions are understood (refer to the preamble for steps 10 through 15 of the impact assessment steps described in section 4.1 of the Terms of Reference). It is not sufficient to say the ideal locations were chosen. Rather, CanZinc needs to describe what alternate locations were considered and why the chosen location and structure was considered to be the best option.

Related to the peak flows, Appendix 4 of the DAR described the peak flows for 18 of the watercourse crossings. These crossings were also described Appendix B of Appendix 1 of the DAR (Preliminary Major Stream Crossing Designs). The crossing drawings depict the Q100 level as "T.B.D." CanZinc will state whether the information presented in Appendix 4 for peak flows was accounted for in the preliminary designs of structures presented in Appendix B of Appendix 1 of the DAR.

4.12 Bedrock type and depth

The Review Board understands the geotechnical consultants reached an understanding about the requirements for bedrock type and depth at each bridge site and that it is not considered necessary at this stage of the EA. CanZinc does not need to provide information about the bedrock type and depth at the bridge sites.

4.13 Location of borrow areas

CanZinc and its consultants have clarified where the location of borrow areas has been described in the DAR. This item does not need to be addressed in the adequacy responses.

4.17 Existing management plans

This section of the Adequacy Review requests that CanZinc submit existing management plans with updates that consider predicted impacts, mitigation and monitoring for EA1415-01. The Review Board understands that the plans listed in this section may have been required as commitments to EA0809-002 and prepared in draft form as part of the regulatory phase for that project. CanZinc will provide any existing plans that have been prepared during the regulatory phase and will be updated to incorporate the all season access road. Submit these plans in draft or final form as appropriate.

As described in Section 4.17, the mitigation proposed to reduce impacts from the project on the environment and people is often referenced in plans that have not yet been prepared. At this phase

in the assessment of EA1415-01 Review Board only requires the mitigation proposed to reduce impacts, an understanding of when it will be applied, and its predicted effectiveness, but does not require the entire plan that will contain the mitigations.

In order to meet DAR adequacy requirements, CanZinc will identify the mitigation measures and monitoring requirements proposed to reduce adverse impacts on the environment and people for the plans listed in 4.17 that are relevant to this Adequacy Review. The proposed mitigation and monitoring will be used in the developer's determination of impact significance.

The complete list of plans described in 4.17 of the Adequacy Review will be discussed in subsequent phases of EA1415-01 or in the regulatory phase.

6.2 Traditional harvesting and traditionally harvested species – impact assessment steps and baseline information, and 6.3 Traditional harvesting and traditionally harvested species – impacts to traditional harvesting and traditionally harvested species

Impacts on traditional harvesting and traditionally harvested species are a key line of inquiry in the Terms of Reference. As described in section 7.2 of the Terms of Reference, key lines of inquiry require the most attention during an environmental impact assessment and the most rigorous analysis and detail in the DAR.

Section 6.3 of the Adequacy Review required CanZinc to conduct a complete effects assessment for this Key Line of Inquiry using the methodology outlined in section 4.1 and 7.1 of the Terms of Reference. A rigorous effects assessment for this key line of inquiry is required because the proposed construction and operation of a new all season access into a currently inaccessible area may have the potential to adversely impact traditional harvesting opportunities and harvested species due to increased harvest pressure.

The Review Board suggests that CanZinc gather information to complete the requirements of section 6.3 of the Adequacy Review by speaking directly with the members of the Nahanni Butte Dene Band in Nahanni Butte. One suggested option to gather this information is for CanZinc to host a community workshop in Nahanni Butte. The results of the workshop must be provided to the Review Board before the Technical Session. CanZinc will inform the Review Board on how it will address the outstanding requirements of items 6.2 and 6.3 from the Adequacy Review.

An example of a community workshop held recently in order to gather information on cultural values and traditional harvesting from community members is located here: Example of community workshop used to inform response to DAR adequacy review

7.2 Existing topography – characterization of geohazards

CanZinc described a number of concerns related to the required items presented in section 7.2 of the Adequacy Review. Some of these items stem from the need for a systematic approach to describing the terrain hazards and a more user-friendly way for the Review Board and parties to understand the terrain hazards. The requirement in the Adequacy Review could be partially met by providing a detailed corridor map for the terrain and terrain hazards along the proposed all-season road.

Specifically, the Review Board recommends that the terrain mapping be based on the terrain classification system for British Columbia, detailed by Howes and Kenk (1997)[1], with any appropriate local additions. The terrain maps will show the landslides, channel avulsions and historic meander courses, and permafrost processes that were identified in the historic air photo interpretation (see details about air photos assessment below). Details about the landslides should be annotated on the maps. The annotations should indicate the magnitude (by showing the run-out) and the frequency of landslides (by indicating the years of air photos on which they were observed). The terrain mapping should be done for the all season road corridor. The landslide mapping should extend to the top of the upslope catchments as it is possible for large natural terrain landslides to originate at the top of a catchment and affect the alignment.

The terrain stability mapping should be completed to show the likelihood of landslides occurring along the proposed roadside slopes. This will be done by integrating the terrain mapping (above) and slope angle maps (to be produced by CanZinc as described in bullets one and two from item 7.2 of the Adequacy Review and in Appendix 4 to CanZinc's letter). Where possible, practical and feasible, the terrain stability mapping will be calibrated with observations from the performance of existing fill and cut slopes. The Review Board recommends that the terrain stability mapping follow the guidelines in BC Ministry of Forests[2] and Resources Inventory Committee[3].

The Adequacy Review also outlined the need for a retrospective assessment of the hazards present along the proposed road. CanZinc will examine historic air photos to evaluate the likelihood of the following affecting the project:

1. channel meanders and avulsions,
2. landslides,
3. large scale slope instabilities between km 39 and 60 and
4. retrogression rates of thaw slides.

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[1] Howes, D.E., Kenk, E., 1997. Terrain Classification System for British Columbia (revised edition). Surveys and Resource Mapping Branch, Ministry of Crown Land, Victoria BC, 90pp, version 2.
[2] Ministry of Forests, 1999. Forest Practices Code of British Columbia, 1999. Mapping and Assessing Terrain Stability Guidebook, second edition, B.C. Ministry of Forests and B.C. Environment, - 36pp.
[3] RIC (Resources Inventory Committee), 1996. Terrain Stability Mapping in British Columbia. A Review and Suggested Methods for Landslide Hazard and Risk Mapping. Slope Stability Task Group, Earth Sciences Task Force. Resources Inventory Committee, August 1996.

The Review Board suggests that CanZinc, at a minimum, contact Natural Resources Canada (NRCan), the NWT Geomatics office[4], the NWT Archives, and the NWT Geosciences office[5] to locate historic air photos. If air photos cannot be sourced, CanZinc should clearly state this. If the air photos can be located, the details of the photos will be summarized (date and scale), copies will be included with the DAR addendum, and the photos will be used for completing the retrospective assessments.

A retrospective analysis of the of the items described above is needed by the Review Board so that it can understand if a potential significant adverse impact is likely. To progress to this point, the Review Board needs to understand the likelihood of an event occurring and the associated magnitude, duration and frequency. If the air photos cannot be located and thus used for quantifying these risks, professional judgement can be used to qualitatively describe the potential impacts. As stated above for items 4.8 and 4.9, if professional judgement is used, the assumptions and decision-making logic will be clearly stated (refer to the preamble for steps 10 through 15 of the impact assessment steps described in section 4.1 of the Terms of Reference).

Regarding the potential of meanders and channel avulsions to affect the road, Appendix 3 of CanZinc's letter stated that "the geotechnical team considered primarily the effects of potential avulsions" and that "detailed design will consider the need for and form of crossing protection…" As stated above, the Review Board needs to understand where there are risks and the likelihood of risks in order to understand if specific mitigation is needed to deal with a likely potentially significant adverse impact. If a specific crossing was opted for based on professional judgement, the decision-making process of the professional will be clearly outlined so that the assumptions can be understood (refer to the preamble for steps 10 through 15 of the impact assessment steps described in section 4.1 of the Terms of Reference). It is not sufficient to say locations were chosen with consideration for channel avulsions. Rather, CanZinc needs to describe what alternate locations were considered and why the chosen location and structure was considered to be the best option.

Regarding the detailed characterization of permafrost and karst hazards between km 48 and 59, the information presented in the DAR is not adequate for the EA. While Appendix 3 of the CanZinc letter stated that the road was adjusted to avoid "visually obvious permafrost and karst terrain features," additional certainty is needed to ensure that features which are not visually obvious are also considered. These features will affect the alignment of the road and the overall safety of the road. In addition, as has been stated above, the Review Board needs to understand alternate locations for project components for its assessment of the proposed project. CanZinc will complete a detailed characterization of permafrost and karst from km 48 to 59 prior to the Technical Session.

[4] http://www.geomatics.gov.nt.ca/
[5] http://www.nwtgeoscience.ca/

Finally, the Adequacy Review requested that CanZinc describe how the road design was modified to mitigate rock fall risks. Appendix 3 of CanZinc's letter stated that recommendations were made to AllNorth based on the information in the Golder report. These recommendations and the associated adaptations need to be described explicitly. This will aid in the Review Board's understanding of what alternative locations were considered and why the chosen location and design is being proposed. If the Golder report being referenced is not currently on the record for EA1415-01, please submit the document for the record.

7.3 Unconsolidated surficial materials

The Review Board understands from the response provided in Appendix 3 that CanZinc will provide the overlay mapping. With respect to the terrain mapping it is unclear if terrain mapping has been completed. As stated in the Adequacy Review, the DAR implied that terrain mapping has been done. If this is the case, CanZinc will provide the existing mapping.

7.5 Stability of landforms with respect to permafrost

Appendix 3 of the letter described concerns with using air photos for a retrospective review. As stated above for item 7.2, the air photos will be reviewed if available. If the photos are not available or are not suitable for the assessment of retrogressive thaw slump rates, this should be stated and/or rationalized. An assessment of the retrogressive rates is needed for the Review Board to understand the potential risks associated with the project. If this cannot be done semi-quantitatively, it can be done qualitatively with the professional's opinions and judgements clearly outlined.

The Review Board reviewed the sections related to permafrost that are outlined on page 5 of the Appendix 3. The items in the Adequacy Review were included because some considerations (slope aspect and angle) were not described in enough detail such that the risks associated with permafrost thaw (both under current climate and climate change scenarios) could be understood. CanZinc is not required to respond to items 2 and 3 from this list at this time. However, CanZinc will likely need to address these questions in further detail later in the EA.

7.6 Channel morphology and stability

As stated for items 4.8 and 4.9, the Review Board needs a clear understanding of the risks associated with the project and the project components. It is only once the Review Board understands the risks that it can assess the potential for a likely significant adverse impact, if mitigation is needed to address the potential impact, and therefore evaluate any proposed mitigations. The potential effects of channel stability and changes to morphology as a result of constricting channels are needed to understand potential risks to the road (in particular to sections upstream of the crossings). Constricting the channel may result in effects that require additional mitigation and these need to be understood during the EA.

The information presented by CanZinc stated that crossing locations were selected because they were considered to be stable. Detailed information needs to be presented to qualify this statement. The information presented can be quantitative (based on hydraulic models) or qualitative (based on professional judgement). If based on professional judgement, the assumptions and reasoning need to be clear.

While the field observations may have helped inform the decision for the location of the crossing, the air photo assessment is needed to understand the likelihood of potential risks (see response to item 7.2 above).

8.1 Impacts to Nahanni National Park Reserve (NNPR) – impact assessment and baseline information

The assessment of impacts of the Prairie Creek All Season Road on Nahanni National Park is a key line of inquiry in the Terms of Reference. As described in section 7.2 of the Terms of Reference, key lines of inquiry require the most attention during an environmental impact assessment and the most rigorous analysis and detail in the DAR.

Section 8.1 of the Adequacy Review required CanZinc to conduct a complete effects assessment for this key line of inquiry using the methodology outlined in section 4.1 and 7.1 of the Terms of Reference, specifically for the impacts to societal values in constructing and operating an all season road in a national park.

Items 2, 10 and 11 in this section require an effects assessment of an all season road on wilderness quality, overall visitor experience and long terms changes to NNPR respectively. National parks are intended to benefit residents of the Mackenzie Valley and all Canadians in present and future generations. Present and future visitors to the national park may use the area around the proposed all season road, particularly in the vicinity of the karst features. For these reasons, CanZinc is required to conduct a complete effects assessment on NNPR using the methodology described in section 4.1 and 7.1 of the Terms of Reference.

A response to the items 2, 10 and 11 in section 8.1 of the Adequacy Review must be provided to the satisfaction of the Review Board before the DAR can be considered adequate. With respect to item 7 in section 8, CanZinc will provide the relevant report on the karst formations from EA0809-002 and describe how the construction, operation and closure of an all season road, as distinct from the permitted winter road, may impact karst in NNPR.

8.2 Impacts to Nahanni National Park Reserve (NNPR) – cumulative effects assessment

The Board's *Environmental Impact Assessment Guidelines, 2004* page 77, state that the Review Board uses cumulative effects to refer to the effects of a proposed development in combination with other human activities, not just in combination with other developments. The proposed all season road is a new route into a currently inaccessible region of a national park. Construction and operation of

the all season road by CanZinc will result in other human activities along the road that are additive to the project described in EA1415-01, but are not proposed or intended as part of this development. Impacts from these other human activities (including but not limited to access by the public, tourists, hunters, mineral and oil and gas exploration companies) may add to the impacts on valued components predicted to occur from construction and operation of the road by CanZinc.

These additive indirect impacts from creation of a new all season access into NNPR need to be addressed in order for the DAR to be considered adequate.

12 Air quality

Impacts to air quality are a subject of note in the Terms of Reference. In order to fulfill the requirements of this section, CanZinc will submit Appendix 20 from EA0809-002 with an update to include an effects assessment of the construction, operation and closure of the all season road project currently under environmental assessment for EA1415-01. In the effects assessment, please focus on items 3 and 4 in the impact assessment steps in Section 4.1 of the Terms of Reference. Complete the standard effects assessment table in Appendix B.

CanZinc will consider how changes in air quality may affect people, wildlife, vegetation and waterbodies in this section or identify where this information can be cross-referenced in other sections of the DAR in the concordance table. The Review Board suggests CanZinc contact GNWT or Environment Canada for assistance with relevant information, such as evaluating dust dispersion from the use of all season gravel roads.

13 Noise

Sensory disturbance to valued components from noise associated with the proposed all season road is a subject of note in the Terms of Reference. CanZinc will complete this section of the Adequacy Review with a focus on items 3 and 4 in section 4 and section 7.1 in of the Terms of Reference. Cross reference any information needed to complete the requirements of this section that may be located in other sections of the DAR and identify these locations in the concordance table.

14.2 Effects to drainage and surface hydrology, 14.3 Effects to water and sediment quality, and14.4 Effects from water crossings

The adequacy items can be addressed by clearly describing the existing drainage pattern and water and sediment quality (impact assessment step 2), describing how the project will affect these components (impact assessment step 3), and clearly describing the mitigation to be implemented (impact assessment step 4).

The mitigations will relate to the erosion and sediment control plan. The proposed mitigations in the erosion and sediment control measures will be described in detail and will be specific to the particular environmental settings for road sections and structures. For example, specific

mitigations for bridges and culverts in un-vegetated areas of the road will likely be distinct from mitigations for gentle-sloped vegetated areas.

15 Species at risk – effects assessment

The evaluation of impacts to species at risk is a subject of note in the Terms of Reference for EA1415-01. CanZinc will provide the field studies from previous environmental assessments and responses to impact assessment steps described in Appendix 2 of the June 16 correspondence in the response to adequacy review items. Cross reference responses that may be located in other sections (Wildlife and Wildlife Habitat) of the DAR in a detailed concordance table.

16.2 Fish and aquatic habitat – impact assessment steps

The evaluation of impacts to fish and aquatic habitat is a subject of note in the Terms of Reference. However, traditional harvesting of fish is a key line of inquiry. CanZinc will focus its effects assessment on fish and aquatic habitat to those portions along the proposed all season access where creek re-alignments or retraining of the water course is proposed. CanZinc will focus on items 3 and 4 of sections 4.1 and 7.1 in the Terms of Reference and cross-reference responses that may be located in other sections of the DAR.

17.2 Wildlife and wildlife habitat – effects assessment

The evaluation of impacts to wildlife and wildlife habitat is a subject of note in the Terms of Reference. CanZinc will focus impact assessment steps described in section 4 of the Terms of Reference on traditionally harvested species and species at risk. Include cross-referencing where applicable, along with a detailed concordance table that describes where responses can be found in the DAR and/or the adequacy responses.

18.2 Vegetation – effects assessment

The evaluation of impacts to vegetation is a subject of note in the Terms of Reference. In the effects assessment response to item 18.2, CanZinc will focus on an impact assessment steps 4, 6 and 9 from the Terms of Reference. Provide either a conceptual invasive species management plan or detailed mitigation measures as required in item 4, section 4.1 of the Terms of Reference.

19.2 Cultural and heritage resources –impact assessment steps

The evaluation of impacts to cultural and heritage resources is a subject of note. However, these values are linked closely with impacts to traditional harvesting, a key line of inquiry. The Review Board recommends that CanZinc host a community workshop in Nahanni Butte in order to gather information required to complete this section. The Board suggests that this community workshop can be held at the same time as the workshop suggested to meet the requirements of section 6.3 in the Adequacy Review. CanZinc will inform the Review Board on how it will address the outstanding requirements of 19.2 from the Adequacy Review.

20.2 Crime and substance abuse

In the Review Board's opinion, responses to the majority of these items are not required to meet adequacy requirements but need to be addressed prior to the technical session. The Review Board suggests that one option to gather information on this issue is to include the item in a community workshop in Nahanni Butte.

The Review Board requests that Can Zinc fulfill the requirements of paragraph 2 in the required item for 20.7 as part of its responses to the Adequacy Review. The item reads as follows: "Please describe the methodology used for this determination of significance related to crime and substance abuse, and indicate the threshold beyond which, in the developer's opinion, these predicted impacts would be significant."

A response to this portion of 20.7 will assist the Review Board and may inform discussion on these subjects during the recommended community workshop.

21.2 Additional roadway use

Not all of the impact assessment steps are needed at this point in the EA to understand the potential impacts from additional roadway use. However, at this point, CanZinc must clearly describe its references and assumptions which support the statements that Highway 7 and the Nahanni Butte access road are underutilized and that mine traffic will not result in a significant change. As described in previous sections, the Review Board needs to understand the logic which leads to CanZinc's conclusions.

In addition, CanZinc will provide specific commitments made by GNWT for Highway 7 improvements. CanZinc will also describe what the effects to Highway 7 will be if the improvements are not completed.

21.3 Existing water transportation and navigable waters

Not all of the impact assessment steps are needed at this point in the EA to understand the potential impacts to existing water transportation and navigable waters. However, at this point, CanZinc must clearly describe its assumptions and the methodology used to make its determination including how significance was defined and beyond what threshold impacts become significant. CanZinc will clearly describe how the barge may affect local and recreational users, including, for example, paddlers exiting NNPR.

22.1 Effects of the environment on the project – forest fires

The potential effects of fires to the project must be assessed; however, this does not require all of the impact assessment steps to be completed. At a minimum, CanZinc will describe the current and historic incidence of forest fires in the area, how climate change may affect the occurrence of fires, what the potential effects to the project could be, and the potential mitigations. The change in fires will consider the potential changes in the time of occurrence, the locations, durations, and

geographic extents. Potential effects of fires to the project may include road closures and a reduced operating season.

22.2 Changes to permafrost and subsidence

Changes to permafrost and subsidence were discussed in Appendix 2 of the DAR. CanZinc stated that "the consequences of permafrost thaw can be potentially significant" (page 65 of Appendix 2 of the DAR) but has not adequately described mitigations. The request in the Adequacy Review item is for CanZinc to describe mitigations that could be implemented if construction techniques and approaches alone do not appropriately mitigate for potential thaw-related issues. The Review Board needs to consider various scenarios. This includes the case where construction approaches are not adequate and additional mitigations may be needed.

Appendix 2 – Baseline

1 Species at risk

Provide the relevant baseline data and effects assessment for bull trout from EA0809-002 to the Review Board so that it can be placed on the public registry for EA1415-01.

2 Species at risk reports

Provide the reports listed that may be relevant to EA1415-01. Sections from these documents used in responses to Adequacy items need to be included in the concordance table.

3 Vegetation baseline

The Terms of Reference (section 5.1.7) does not ask CanZinc to collect baseline contaminant data on vegetation. The section requires a description of existing baseline contaminants concentrations only. If there is no existing data on contaminant concentrations on vegetation then this adequacy requirement has been met. The issue may be addressed in subsequent phases of the EA.

6. Water and sediment quality baseline

Consolidate and submit existing baseline data from past EAs in order to meet adequacy requirements. The concordance table will cross reference these documents where applicable.

8. Baseline contaminant concentrations

Submit any existing fish tissue chemistry work that is available to fulfill adequacy requirements. The issue may be addressed in subsequent phases of the EA.

Conclusion

The Review Board looks forward to the DAR Addendum that incorporates the above directive and the Adequacy Review. At your earliest convenience, please inform the Review Board of your expected schedule for this submission. If you have any further questions, please contact Sachi De Souza (sdesouza@reviewboard.ca).

Ms. JoAnne Denron
Chairperson
Mackenzie Valley Environmental Impact Review Board