

# EA1415-01 Round 2 Information Requests U#7 and GNWT letter information requests

## Review Comment Table

Board:	MVEIRB
Review Item:	EA1415-01 All-season Road - Second Round Information Requests Related to Undertaking #7 and the Sept 22 GNWT Letter
File(s):	
Proponent:	CanZinc Corporation
Document(s):	<a href="#">Note to File - IR extension for IRs relating to undertaking 7 (PR#301)</a> (1 MB) <a href="#">GNWT September 22 letter Re: Land Tenure Obligations (PR# 302)</a> (1 MB) <a href="#">Note to File - October 7th deadline for undertaking 7 and GNWT letter IRs (PR# 303)</a> (1 MB) <a href="#">Note to File - Undertaking Responses (PR# 294)</a> (1 MB) <a href="#">Supplementary Fish Habitat Report (Sept. 6) (PR# 299)</a> (5 MB)
Item For Review Distributed On:	Sep 23 at 12:52 <a href="#">Distribution List</a>
Reviewer Comments Due By:	Oct 7, 2016
Proponent Responses Due By:	Oct 31, 2016
Item Description:	<p>Information requests relating to undertaking #7 (see <a href="#">PR#301</a>) and the September 22 GNWT letter (<a href="#">PR# 302</a>) are due October 7, 2016. See the September 23, 2016, note to file (<a href="#">PR#303</a>) for more information. Parties and the developer are asked to prepare information requests related to undertaking #7 and the September 22 GNWT letter using the Online Review system.</p> <p><b>Due date: October 7, 2016</b></p>
General Reviewer Information:	<p>The purpose of information requests is to give parties and the Review Board the information needed to help reach conculsions on whether or not the project could have potentially significant adverse impacts on the environment or people.</p> <p>The Review Board is using the ORS and Excel spreadsheet format for information requests from parties and responses from CanZinc.</p> <ul style="list-style-type: none"><li>the "topic" column includes your reference to the public registry document that your information request is based on</li><li>the "comment" column contains the preamble and rationale for your information request</li><li>the "recommendation" column contains your information request</li></ul>
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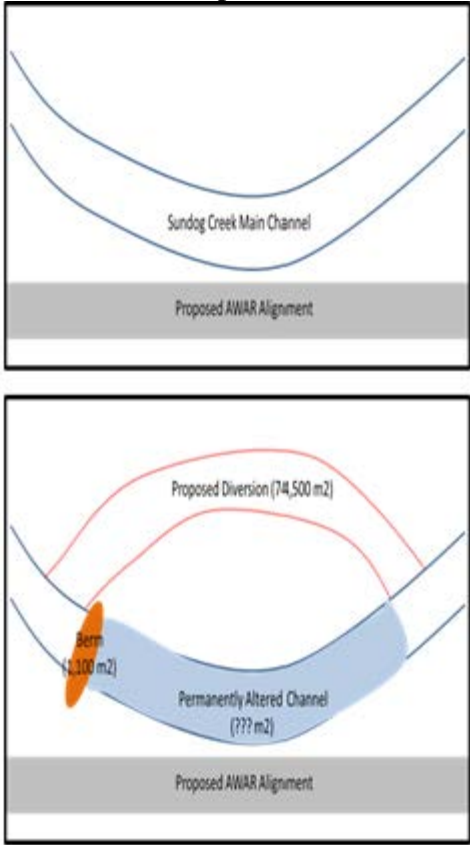
Dehcho First Nations Round 2 Information Requests related to Undertaking #7 and the Sept. 22 GNWT letter

ID	Topic	Comment/Recommendation	CanZinc Corporation Responses (unless otherwise indicated)
1	Sundog Creek Re-alignment	<p><b>Comment</b></p> <p>On page 6 of the Allnorth response to the Technical undertakings dated August 10, 2016, CanZinc states that “Tetra Tech EBA will assist CZN in providing a preliminary design including details of the proposed diversion berm at the upstream end. We will also provide commentary on our expectations regarding hydraulic performance and sediment movement. The preliminary design will be based on the alignment and LiDAR elevation data as of 2012. We would want to obtain additional channel bed profile and substrate information prior to developing the final design. Our recommendation is for CZN to commit that the final design will be developed to provide hydraulic/sediment capacity equivalent to the existing channel and will mimic the habitat characteristics of the existing channel. The final design will also consider the risks of new channel avulsion, and any measures required to minimize those risks.” From TetraTech memo dated July 5, 2016, Tetrattech states that “Our recommendation is for CZN to commit that the final design will be developed to provide hydraulic/sediment capacity equivalent to the geometry of the existing channel, defined by its geometry, and to mimic the substrate characteristics of the existing channel.”</p> <p><b>Recommendation</b></p> <p>DFN’s understanding is that the substrate of the two channels are different – the old portion of Sundog creek has cobble substrate and the new alignment will have cobble imbedded in sand – how will CanZinc mimic the substrate characteristics of the existing channel? How will the change in substrate affect fish and fish habitat?</p>	<p><b>Oct 31:</b> See Hatfield document attached.</p>
2	Sundog Creek Re-alignment	<p><b>Comment</b></p> <p>From the TetraTech memo dated July 5, 2016, TetraTech states, “The realigned channel is expected to be generally stable, and not require dredging or other recurring maintenance. There is, however, a risk of future avulsions at the upstream and downstream extents of the realigned reach at its connections to the existing channel(s), and of lateral shifting along the main segment. These are addressed below. In this discussion, an avulsion refers to a sudden abandonment of one channel and the formation of a new channel. Lateral shifting refers to a more gradual channel movement, such as by erosion on the outside of a bend, and deposition on the opposite side.”</p> <p><b>Recommendation</b></p> <p>What evidence does TetraTech have that the realigned channel will be stable and not require dredging or recurring maintenance? How will CanZinc monitor the Sundog Creek realignment and what aspects of the monitoring would trigger maintenance on the realignment?</p>	<p><b>Oct 31:</b> See Tetra Tech document attached.</p>
3	Sundog Creek Re-alignment	<p><b>Comment</b></p> <p>In TetraTech’s memo dated August 10, 2016, TetraTech states, “In the preliminary design, the channel width and bottom slope are varied along the realignment reach to provide complexity that is more representative of a natural channel. Also, the width of the excavated channel is narrowed from the originally-suggested 20 m width to avoid unnecessary excavation beyond what is necessary to convey the 100-year design flow, while not adversely altering water velocities, which influence fish passage. During recent July 2016 fish habitat inspections by Hatfield Consultants, it was noted that the old channel to be reactivated is well developed. A simulation of 100 year flows with the existing channel blocked (Figure 8) indicates that flows will largely remain in the channel without avulsion, at least in the upstream portion. As a result, while excavation is still required to reduce the risks of overland flow and avulsion, the extent of excavation can be reduced from that assumed previously. Hatfield noted in the field that the existing active channel to be realigned has large cobble substrate in the steeper segments with higher velocities, and gravel substrate in flatter segments with lower velocities. Similar variability is desirable for the realigned channel from a habitat perspective. During construction, the channel slope and geometry can varied slightly as directed by the field engineer to take advantage of existing substrate features (boulders, etc.) when encountered.”</p>	<p><b>Oct 31:</b> See Tetra Tech document attached to IR#2.</p>

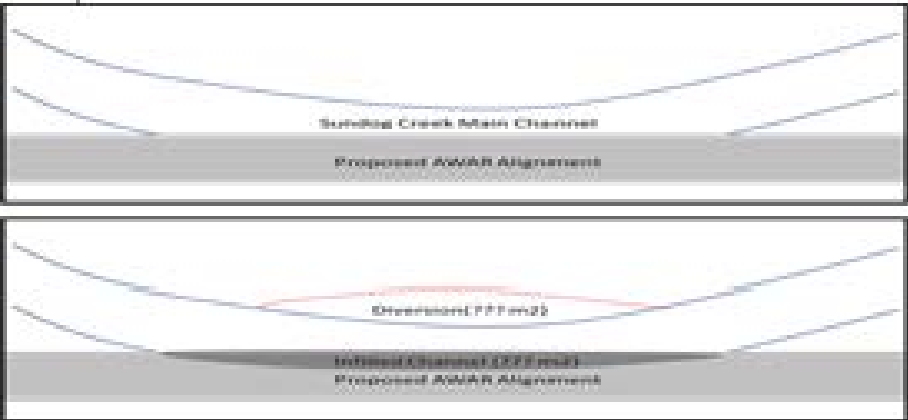
		<b>Recommendation</b> CanZInc notes that similar variability is desirable in terms of substrate and velocity, how will CanZinc achieve similar substrate and velocity?	
4	Sundog Creek Re-alignment	<b>Comment</b> N/A  <b>Recommendation</b> DFN requests that DFO provide an example of a similar creek realignment, if one is available. What were the monitoring results of this creek realignment? What were the issues with the creek realignment? What impact did the realignment have on fish and fish habitat?	<b>Oct 25: GoC Response to DFN IR 4: Sundog Creek Realignment:</b> See attached letter.
5	Sundog Creek Re-alignment	<b>Comment</b> N/A  <b>Recommendation</b> DFN requests that CanZinc provide a workplan of outstanding work on the Sundog Creek realignment and when that work will be completed. Workplan should include the engagement with DFN, NDDB and LKFN.	<b>Oct 31:</b> The first part of the workplan is to respond to the U#7 IR's. This should mean that the outstanding work needed at this stage will be complete. This will hopefully be followed soon after by further engagement between DFO, Parks and CZN on the technical data. Unfortunately, some momentum was lost because the representatives on the file from both DFO and Parks have moved on. It did not help that the U#7 review was formalized into IR's as this inevitably delayed party interaction. We know there is a need to move this process forward, and to include FN engagement. CZN was involved in a community meeting in Nahanni on Oct 13, and we discussed the Sundog realignment and offset ideas as one of the agenda items. We will be providing a meeting record for that engagement.

Government of Canada Round 2 Information Requests related to Undertaking #7 and the Sept. 22 GNWT letter

ID	Topic	Comment/Recommendation	CanZinc Corporation Responses
1	GoC - NPMO - Cover Letter and Attachments	<p><b>Comment</b> <a href="#">(doc)</a> Cover letter and attached documents.</p> <p><b>Recommendation</b></p>	
2	GoC - DFO - 1 Defining Floodplains. Environmental Assessment. TetraTech EBA (July 5, 2016), Figure 8 in TetraTech EBA (August 10, 2016), Allnorth (August 17,2016) and Hatfield Memo submitted to DFO and PC (September 6, 2016)	<p><b>Comment</b> Fisheries and Oceans Canada notes that there is an apparent conflict between multiple documents defining floodplains; it is not clear whether the proponent’s position is that the areas of exposed alluvium along Sundog Creek are, or are not, subjected to periodic inundation (and if so, the areal extent to which this occurs). TetraTech EBA (July 5, 2016) notes that “Hydraulic modelling of this [Sundog Creek] reach predicts that the incised channel along the south bank has sufficient hydraulic capacity to convey the 100-year flow within the main (20 m wide) channel. Interpretations on the effects of landslides versus natural maintenance of the floodplain by high flows requires a quantitative description by a specialized professional such as a geomorphologist. Figure 8 in TetraTech EBA (August 10, 2016) supports the contention that flooding on the “floodplain” does not occur. However, Allnorth (August 17, 2016) indicates that the “active floodplain”, which “is distinguishable in pictures as exposed, whitish/grey gravels with no or sparse vegetation growth, is likely determined by creek flows with a return period of approximately 1 in 20 years.” Hatfield, in a memo submitted to DFO and PCA on September 6, 2016, used 1 in 2 year flood hydraulic modelling to determine the extent of floodplain that may serve as aquatic habitat in that time frame. The two hydraulic models (TetraTech EBA, and Allnorth/Hatfield) do not appear to agree.</p> <p><b>Recommendation</b> An explanation is required for the areas of exposed alluvium within portions of the adjacent floodplain area. The proponent has proposed two conflicting explanations: either landslides, or periodic flooding with a return period of approximately 1 in 20 years. Based on the memos provided by Hatfield, Allnorth and TetraTech, please clarify the discrepancies between the different types of modelling found the documents cited above, and in relation to the use of orthophotos to define fish habitat.</p>	<p><b>Oct 31:</b> We agree that the three sources of 'floodplain' information say different things, and may seem confusing and contradictory. The reason is each were derived in response to different issues. Allnorth approached the issue from a road footprint perspective, and they were asked, in the response to Adequacy (PR#178, with refinement as Undertakings 23 and 24 from the Technical Session (PR#288)), to classify the footprint according to the habitat designations given. We do not believe the 'active floodplain' designation to be particularly useful since 'active' is somewhat subjective and needs to be defined by flow return period to have utility. In isolation, we can say that inactive floodplain has no significance in terms of fish habitat. Tetra Tech approached the issue from a hydrology perspective, specific to channel hydraulics and flood level estimation. They in fact provided modelled flood levels for Q2 as well as Q100. In their opinion, historical landslides have influenced channel position, and thus floodplain extent in relation to the active channel, however the currently exposed and unvegetated alluvium is related more to recent flood episodes in relation to current channels. Hatfield's analysis has drawn on both of the aforementioned sources, and integrated the relevant data into aquatic habitat definition, particularly with respect to Q2 and the HWM. This definition was ground-truthed in July. Therefore, we believe the Hatfield work to be the main data source upon which DFO should base its findings.</p>
3	GoC - DFO - 2. Laird River Field Notes. Environmental Assessment. Hatfield Memo submitted to MVEIRB (September 6, 2016)	<p><b>Comment</b> A habitat datasheet for the Liard River was presented as Attachment 2 in the Hatfield memo submitted to MVEIRB on September 6, 2016. However, the field notes from September 2014 from which this habitat datasheet was later developed do not appear to be present.</p> <p><b>Recommendation</b> 2. Please provide field notes from September 2014 from which the habitat datasheet for the Liard River was derived.</p>	<p><b>Oct 31:</b> See Hatfield document attached.</p>
4	GoC - DFO - 3. Environmental	<p><b>Comment</b> An update to“DFO Table 2-1” from the responses to the first round of Information Requests reflecting new changes in road alignment and the proponent’s position on fish-bearing status for all streams following additional fieldwork in 2016 has not been provided. The</p>	<p><b>Oct 31:</b> An updated version of "Table DFO 2-1" is attached. The crossings reflect the final alignment only. Crossings between Km 126-138 were deemed non-fish bearing given their headwater</p>

	Assessment. DFO Table 2-1.	<p>update should clarify the fish-bearing status of crossings as well as identify what crossings should no longer be considered in the assessment (i.e., if the only road alignment being considered currently is the revised alignment, crossings appropriate to the old alignment only may be removed if they are no longer to be assessed).</p> <p><b>Recommendation</b></p> <p>3. Please provide a finalized version that is an update to "DFO Table 2-1" first provided in May 2016.</p>	<p>aspect and poor habitat downstream dominated by beaver dams and/or lack of channel outlets (see reconnaissance details in PR#299).</p> <p><b>Oct 31:</b> Table DFO 2-1</p>
5	GoC - DFO - 4a-d. Allnorth (May 2, 2016) on page 3. Environmental Assessment.	<p><b>Comment</b></p> <p>Allnorth describes on page 3 “The proposed construction of an upstream dike to deflect and shelter the ramp structure will greatly assist in reducing hydrological forces on the ramp.” Fisheries and Oceans Canada’s understanding is that the proposed construction appears as follows. The footprint of the area in blue, below (“??? m2”) has not been provided.</p>  <p><b>Recommendation</b></p> <p>4a. Is this dike included in the calculations of the ramp’s footprint in fish habitat, presented in the Hatfield memo submitted to DFO and PCA on September 6, 2016? If it is, is there a habitat restoration plan that would be deployed to remove the dyke following the mine closure?</p> <p>4b. Please provide a geospatial description of the realignment (size of impact for the permanently altered channel of Sundog Creek where flow is being altered by the major stream diversion) i.e., where it starts and ends.</p> <p>4c. Since the permanently altered channel in the major realignment will have only backwater flows, please address the risk that fish will become isolated and stranded at a greater frequency in this region following the construction of the diversion channel than during baseline conditions.</p>	<p><b>Oct 31:</b> See Hatfield document attached to IR#2.</p>

		4d. Please describe the expected flow regime in this permanently altered channel of Sundog Creek, including timing, duration, extent, velocity and depth of flows after diversion in comparison to the baseline state (including annual, Q2, Q10 and Q100 scenarios). This should be performed either after the discrepancies between the various types of hydraulic modeling of flows in Sundog Creek have been rectified, or for each type of modelling in the event that differences cannot be reconciled, as a precautionary approach.	
6	GoC - DFO - 5a-b. Hatfield Memo submitted to DFO and PC (September 6, 2016), Table 2	<p><b>Comment</b> Fisheries and Oceans Canada notes that a finalized copy of the memo for Undertaking 7 has not been submitted. Also, Table 2 of the memo outlined individual encroachments onto Sundog Creek showing numbers that jump from 4 to 10, and one row with no numbers.</p> <p><b>Recommendation</b> 5a. Please provide the finalized memo for Undertaking 7; a draft of which was submitted to DFO and PCA on September 6, 2016. 5b. Please revise Table 2 to ensure that no items are missed and all encroachments have been fully accounted for.</p>	<p><b>Oct 31:</b> a. The memo was intended to be a draft for discussion. Specific discussion has not occurred to date. There is nothing to update at present. The memo will be revised and finalized after discussion.  b. There are no items missing in Table 2. The road segment numbers are not consistent, but no data are missing. All encroachments have been accounted for.</p>
7	GoC - DFO - 6a-c. Hatfield Memo submitted to DFO and PC (September 6, 2016), crossing KM 124.5, crossing KM 39.4 and crossing KM 53.5	<p><b>Comment</b> Crossing at KM 124.5 was noted to result in the loss of 150 m2 of fish habitat in DFO Table 2-1, submitted as part of the responses to the first round of Information Requests, but is not associated with any habitat loss in the Hatfield memo submitted to DFO and PCA on September 6, 2016. Crossing at KM 39.4 has a revised footprint of 15 m2 in the Hatfield memo submitted to DFO and PCA on September 6, 2016, but had a footprint of 200 m2 in DFO Table 2-1, submitted a part of the responses to the first round of Information Requests. For Crossing at KM 53.5, Allnorth (May 3, 2016) and the Hatfield memo submitted to DFO and PCA on September 6, 2016 both specify a culvert, but DFO Tables 1-1 and 2-1 from the first round of Information Requests specified a bridge.</p> <p><b>Recommendation</b> 6a. Please clarify why crossing at KM 124.5 was noted to result in the loss of 150 m2 of fish habitat in DFO Table 2-1, but is not associated with any habitat loss in the Hatfield memo.  6b. Please clarify in more detail why the crossing at KM 39.4 has a revised footprint of 15 m2 in the Hatfield memo but had a footprint of 200 m2 in DFO Table 2-1.  6c. Please clarify whether the crossing at KM 53.5 is a bridge or a culvert.</p>	<p><b>Oct 31:</b> a. The previous version of Table DFO 2-1 included some incorrect assumptions re bridge abutment locations with respect to the HWM. A review with Allnorth's bridge engineer revealed that abutments are typically located outside the HWM, and we confirmed this to be the case for all but one crossing, Km 39.4 being the exception. Hatfield's memo correctly reflected the post-review loss definition.  b. Similar to a. above, the loss area was revised after review. Km 39.4 was considered to potentially have a 1 m encroachment, which with an approach footprint width of up to 15 m yields the loss area.  c. There are 2 crossings in this location close together. The Km 53.5 location is a small Sundog side-channel crossing where a culvert is proposed. The Km 53.55 crossing is of Sundog main stem where a bridge is proposed. These crossings are shown on the attached anotated photo.</p>
8	GoC - DFO - 7. Offsetting, Hatfield Memo submitted to DFO and PC (September 6, 2016)	<p><b>Comment</b> Hatfield has described potential habitat offsetting opportunities in a memo submitted to PCA and DFO on September 6, 2016. This includes a) the creation of deep pools at the downstream extent of the old channel to provide overwintering habitat, and b) the construction of a low gradient side channel off of Sundog Creek either upstream or downstream of the diversion.</p> <p><b>Recommendation</b> 7. Please address the risk that these potential offsetting projects will produce additional impacts to flow in the permanently altered channel downstream of the berm, potentially resulting in further stranding and fish mortality. This should be performed either after the discrepancies between the various types of hydraulic modeling of flows in Sundog Creek have been rectified (DFO IR 1), or for each type of modelling in the event that differences cannot be reconciled, as a precautionary approach.</p>	<p><b>Oct 31:</b> See Hatfield document attached to IR#2.</p>
9	GoC - DFO - 8. High Water Mark, Hatfield Memo	<p><b>Comment</b> Page 1 indicates that “for Sundog Creek, habitat was split into the following broad categories: (A) normally wetted (functional) habitat within the 1:2 year return, (B) normally dry (non-functional) habitat within the 1:2 year return; and (C) habitat outside the 1:2 year return but without established vegetation.”</p>	<p><b>Oct 31:</b> See Hatfield document attached to IR#2.</p>

	submitted to DFO and PC (September 6, 2016)	<p><b>Recommendation</b></p> <p>8. Please justify why Q2 (1:2 year flood return) is used to delineate possible fish habitat. DFO notes that all three categories (A to C) of aquatic habitat as defined and identified by the proponent in the Hatfield memo currently fall under DFO's definition of the High Water Mark.</p>	
10	GoC - DFO - 9. Technical Sessions, Hatfield Memo	<p><b>Comment</b></p> <p>During the Technical sessions, there were three other short realignments where small portions the channel of Sundog Creek is proposed to be shifted over to accommodate the road prism. “MR. DAVID HARPLEY: It's Dave Harpley. So while -- while Ernie here is figuring out the exact locations, as you pointed out, one (1) of the encroachment locations is on the screen at thirty-seven point seven (37.7). And there are two (2) more upstream of the diversion, approximately around the thirty-five (35) to thirty-six (36) location.” (July 15, 2016 transcripts p. 94). Fisheries and Oceans Canada’s understanding of these smaller realignments is illustrated below. Areas identified as “???? m2” must be quantified.</p>  <p><b>Recommendation</b></p> <p>9. Table 2 of the Hatfield memo only speaks to one small realignment (impact number 10) and the text on page 3 speaks to “limited portions of the active channel” implying multiple small realignments. Furthermore, the entry for this table has not accounted for all habitat impacts and only presents the residual loss in square m (i.e., subtracting “losses” from “gains”). As in the diagram for the large realignment and for the three smaller realignments, the total actual loss and gain should be presented explicitly for each as illustrated above.</p>	<p><b>Oct 31:</b> See Hatfield document attached to IR#2.</p>
11	GoC - PCA - 1 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Fish-Impacts of rock blasting on fish populations	<p><b>Comment</b></p> <p>Blasting of rock adjacent to streams has the potential to negatively affect fish populations by altering fish behaviours that influence fish growth, time to reproduction (i.e. age at maturity) and survival. Blasting can also result in fracturing of bed rock materials that can have unforeseen effects on flow of water, including shallow groundwater and surface flow, and can also leave residues from blasting on quarry or borrow material that could enter shallow surface ground water and surface waters. CZN has committed to implement the DFO Blasting Guidelines, sediment control measures and turbidity measurements however the specifics of how these guidelines will be implemented to mitigate the effects of blasting is unclear. CanZinc has proposed to monitor turbidity based on “a visual inspection with turbidity readings if required” (CZN response to PCA IR 20, May 5, 2016). Parks Canada notes that this method is subjective and not readily quantifiable. In addition, the response to Undertaking # 7 has not addressed the effects of blasting on fish and fish habitat.</p> <p><b>Recommendation</b></p> <p>1a. Identify measures that will be taken to ensure that blasting does not alter surface flow and flow within the shallow ground water.</p> <p>1b. Identify the sampling design that will be deployed to to quantify potential effects of blasting on surface and shallow groundwater flow, including the experimental design (before-after control impact, or control impact designs) and details of sampling intensity and</p>	<p><b>Oct 31:</b> CZN previously noted that blasting in the areas proposed is not likely to encounter groundwater, thus will not alter groundwater flows (see our responses to Parks' 1st round IR 20). Regarding the effects of blasting on fish and fish habitat, this was addressed in our DAR Addendum, Appendix C, s.16.2 (PR#90), and our response to Parks' 1st round IR 21. Further, it was our understanding from the Technical Session that there were 2 particular issues re blasting, explosive residues and following guidelines, both of which we addressed. See the Day 1 transcript, starting on p. 210, line 14, and ending on p. 211, line 25.</p> <p>a. Blasting will be required at 3 crossings, Km 23.4, 25.3 and 28.6. The first 2 are not fish-bearing. The third is adjacent to the main stem of Sundog Creek. Watercourses will be protected from runoff carrying sediment before blasts are made, as necessary. Silt fence</p>

		<p>frequency and the variables that will be measured.</p> <p>2a. Identify measures that will be taken to ensure that potentially sediment-rich flow that could be created during blasting does not enter surfaces waters adjacent to blasting sites.</p> <p>2b. Identify the sampling design that will be deployed to quantify potential effects of blasting on sediment levels in surface waters adjacent to blasting sites, including the experimental design (e.g., before-after control impact, or control impact designs) and details of sampling intensity and frequency and the variables that will be measured.</p>	<p>will be used. Blasting will occur in dry or low runoff conditions. If necessary, runoff will be directed to vegetated areas for settling. Prescriptions in the Sediment and Erosion Control Plan will be followed.</p> <p>b. Sampling and monitoring will be conducted as per the program that will be detailed in the final SECP as a condition of permits. See our letter regarding IR2, Parks' IR9 and the commitment made (PR#315).</p>
12	<p>GoC - PCA - 2 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Assessment of Riparian Habitat.</p>	<p><b>Comment</b> (<a href="#">doc</a>)</p> <p>On page 3 of a Hatfield Memo, dated September 6th, 2016, the proponent describes how the width of the riparian zone was determined and the criteria used to rank its level of importance (High, Medium, and Low). Tables later in the document contain estimates (m2) of the riparian habitat that will be lost for this project both permanently and temporarily. Lastly, the Memo states, on pg 3, that the proponent believes “the loss of riparian vegetation will result in negligible loss of ecological function” and that the proponent does “not intend to directly offset these losses”. While we appreciated the work presented in the document, Parks Canada disagrees with the proponent regarding the ecological significance and the need to offset or restore impacted riparian habitat. The proponent’s statement regarding the loss of riparian habitat and resulting “negligible loss of ecological function” lacks scientifically based supporting references. The same can be said with regards to how the width and ranking of riparian habitat were determined. In addition, the ranking presented focusses solely on the significance of the riparian habitat for fish and gives no consideration to the other ecological functions it serves. Parks Canada is required to maintain ecological integrity and as such is compelled to consider all of the ecological structures and functions of riparian zones (see Gregory et al., 1991; Naiman and Décamps 1997; Pusey and Arthington 2003).</p> <p><b>Recommendation</b></p> <ol style="list-style-type: none"> <li>1. Provide scientific literature which supports the conclusion “the loss of riparian vegetation will result in negligible loss of ecological function”.</li> <li>2. Provide scientific literature that supports the method used to determine width of riparian zone.</li> <li>3. Provide scientific literature to support the methodology used for ranking riparian habitat and which considers all of the ecological functions of the habitat.</li> <li>4. If the above results in a new riparian habitat categorization or ranking system, recalculate the amount of riparian habitat that will be lost, both temporarily and permanently, in each category/rank.</li> </ol>	<p><b>Nov 4:</b> (<a href="#">doc</a>) See Hatfield document attached.</p>
13	<p>GoC - PCA - 3 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Riparian Habitat</p>	<p><b>Comment</b></p> <p>On pages 1 and 2 of a Hatfield Memo, dated September 6th 2016, the proponent describes three categories (A-C) of aquatic habitat and the criteria used to rank the importance of its ecological function with respect to fish. Tables in the back of the document contain estimates (m2) of aquatic habitat in each category that will be impacted by this project and their rank. Parks Canada recognizes this work, but requires additional information to properly determine the potential impacts on aquatic habitat from this project. The categories and ranks provided in this Memo lack scientifically based references to justify their use. In addition, the ranking presented focusses solely on the significance of the aquatic habitat for fish and gives no consideration to the other ecological functions it serves. Parks Canada is required to maintain ecological integrity and as such is compelled to consider all of the ecological structures and functions this habitat provides. Also, in IR Round 2 PCA#10, Parks Canada requests that the impacts to the floodplain be assessed using Q20 flow projections and would ask that fish habitat be evaluated using the same flow projection.</p> <p><b>Recommendation</b></p> <ol style="list-style-type: none"> <li>1. Provide scientific literature which supports how the categories were applied to the riparian habitat.</li> </ol>	<p><b>Nov 4:</b> See Hatfield document attached to PCA IR#2.</p>

		<p>2. Provide scientific literature which supports the ranking of riparian habitat that considers all the ecological functions it provides.</p> <p>3. Recalculate the amount of fish habitat that will be lost, both temporarily and permanently, for each category and rank using the Q20 flow projections (See IR Round 2 PCA#10).</p>	
14	<p>GoC - PCA - 4 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Riparian restoration</p>	<p><b>Comment</b></p> <p>The proponent has not provided adequate information on how effects to riparian areas will be mitigated by reclamation of riparian work areas (ex. surrounding culvert and bridge installations) during the construction and maintenance phases as required in the TOR. In addition, methods to evaluate the effectiveness of these mitigation and reclamation measures have not been provided, nor has the proponent provided thresholds or strategies for when adaptive management will be implemented. Timely and effective reclamation of riparian areas is necessary to limit erosion of riparian areas and prevent the entry of sediment into the nearby watercourse, which would be detrimental to fish and fish habitat, as well as for ecological restoration.</p> <p><b>Recommendation</b></p> <p>Provide a riparian reclamation plan to demonstrate that ground stabilization and revegetation will be implemented in a timely manner that meets Parks Canada standards and industry accepted best practices. Detailed information is required on the short term (beginning during construction and continuing until properly-timed revegetation) and long term (beginning with revegetation and continuing into the post-closure phase) methods and timelines for riparian restoration, including monitoring plans to ensure revegetation success. Preventing the introduction of non-native seed stock is critical in National Parks. As such, seed stock must be obtained by collecting and planting local seeds and cuttings. The riparian restoration approach should follow best practices outlined in the Yukon Revegetation Manual (2011) and Principles and Guidelines for Ecological Restoration in Canada's Natural Protected Areas (2007). References: 1) Government of Yukon (2011). Yukon Revegetation Manual- Practical Approaches and Methods. Available online: <a href="http://www.yukoncollege.yk.ca/downloads/Yukon%20-Revegetation-Manual.pdf">http://www.yukoncollege.yk.ca/downloads/Yukon%20-Revegetation-Manual.pdf</a> 2) National Parks Directorate (2007). Principles and Guidelines for Ecological Restoration in Canada's Natural Protected Areas. Gatineau, Quebec.</p>	<p><b>Oct 31:</b> (<a href="#">doc</a>) Details on protection and monitoring of the riparian zone and reclamation were included in the draft Sediment and Erosion Control Plan (SECP), DAR Addendum, Appendix A, Appendix C, sections 4.3, 6.2 and 7 (PR#101). We also note that construction in the riparian zone was specifically addressed in the draft Road Construction and Maintenance Plan, section 5.5, provided in the same appendix. Stabilization measures could include gravel cover, organic material, woody debris, and potentially cuttings. Revegetation by natural invasion will be encouraged. The SECP will be subject to further review, and the addition of detail and more specifics before construction as a condition of permits, including inclusion of appropriate guidelines. CZN will welcome further comments at that time.</p>
15	<p>GoC - PCA - 5 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Water withdrawal</p>	<p><b>Comment</b></p> <p>Parks Canada would like to acknowledge the material CZN has provided with regards to undertaking #9; however, there are a few points that require additional information in order to assess the potential environmental effects of the water withdrawal required for dust control. On page 29 of a letter to MVEIRB from CZN dated Aug 11, 2016, the proponent made several statements regarding the recharge rates of several of the water bodies to be withdrawn from for summer dust control; however, these statements lacked empirical data to substantiate them. The proponent does state in the letter that withdrawal volumes will be tracked “either by using an in-line flow meter, or by recording the number of fills of tanks of known capacity”, but given the paucity of data on recharge rates, water gauges should be installed to enable the proponent to monitor lake levels and effectively quantify recharge. Furthermore, page 28 of the Aug 11 letter specified the water withdrawal limits as, 1% for both Mosquito and Km 70 lakes; 2% for both Km 139 and Km 141 lakes; 5% for both Km 115 and Km 121 lakes. The littoral habitat lost calculations on page 26 of a Hatfield Memo dated Sept. 6, 2016, use only the 1% withdrawal volume shown in the table from the Aug. 11 letter and not the water withdrawal limit values set for each lake. The amount of littoral habitat lost needs to be recalculated for those lakes with limits &gt;1% using the above-stated withdrawal limits.</p> <p><b>Recommendation</b></p> <p>1. PCA recommends that CZN commit to the installation of water gauge stations at the six lakes where water will be withdrawn for dust control and a monitoring plan created that specifies when readings will be taken and outlines actions which will be taken if the recharge assumptions are not met.</p> <p>2. Calculate the loss of littoral habitat for the lakes where water withdrawal is needed for dust control using the withdrawal limits indicated in the Aug 11, 2016 letter to the MVEIRB from CZN.</p>	<p><b>Oct 31:</b></p> <p>1. The lakes in question were approved for the extraction of up to 10% of lake volume for winter road works in EA0809-002. CZN has voluntarily proposed lower limits during the summer period because those quantities of water are not needed. It is clear from a net positive water balance in the region during summer as well as runoff that the proposed extraction volumes will have no to negligible impact on lake volumes and littoral areas. The risks are insignificant. We have proposed monitoring of water extraction volumes to ensure our commitments are maintained, and also in the knowledge that this data will be needed for permit compliance purposes. We believe that is satisfactory, and the installation of guages to be unnecessary.</p> <p>2. The calculations by CZN and voluntary extraction limits for each lake provided in our letter of August 11 are considered suitably protective and demonstrative in terms of the lack of impact potential. Only two of the lakes are in the NNPR. Extraction limits are 1% for both. Therefore, Hatfield's assumed 1% withdrawal for those lakes is correct.</p>
16	GoC - PCA -	<b>Comment</b>	<b>Oct 31:</b> See Tetra Tech document attached.

	<p>6 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Sediment-Sundog Creek</p>	<p>In response to Undertaking 26, Parks Canada fundamentally disagrees with the proponent's view that "the realigned channel is expected to be in balance with its hydrology and sediment inputs" (Tetra Tech July 5th 2016). It is Parks Canada's view that diversion of flow into the realigned channel in Sundog Creek will result in an initial pulse of sediments that are present on the upper surfaces of the excavated riverbed (and within interstitial spaces) and that these materials will be mobilised and as a result concentrations of sediments in the realigned section of Sundog Creek will exceed that upstream of the realigned reach. It is also highly likely that a portion of sediments mobilised by initial flow of water into the channel will be transported downstream of the realigned reach.</p> <p><b>Recommendation</b> Parks Canada requests that the proponent:</p> <p>i) define "in balance with its hydrology and sediment inputs" and the assumptions that were made to support this statement. For example, is the channel expected to be in balance "instantaneously when flow is diverted into the channel?"</p> <p>ii) identify the expert hydrologist and their credentials who made the assertion that "the realigned channel is expected to be in balance with its hydrology and sediment inputs"</p> <p>iii) present a comprehensive argument supporting the statement that "the realigned channel will be in balance with its hydrology and sediment inputs".</p>	
17	<p>GoC - PCA - 7 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Sediment-Sundog Creek</p>	<p><b>Comment</b> It is Parks Canada's view that the proponent has failed to present a convincing (data and evidence based) argument addressing Undertaking 32. Rather, Canadian Zinc has presented an "opinion-based argument" which is fundamentally different to what was requested in Undertaking 32 "CanZinc will provide anticipated quantity and quality of sediment accumulation (signed by a qualified professional)". The proponent's response to Undertaking 32 does not present any data or evidence that indicates an empirical data modelling exercise was completed.</p> <p><b>Recommendation</b> Parks Canada requests that Canadian Zinc conduct and present an empirical modelling exercise to support their contention that the realigned reach in Sundog Creek will not accumulate fine sediments and that this exercise is signed by a qualified expert. It is Parks Canada opinion that a "qualified expert" in this instance would include a professional hydraulic engineer, a physical engineer, physical geographer, or a fluvial geomorphologist.</p>	<p><b>Oct 31:</b> CZN's replies to Undertakings 28 and 32 were based in part, to varying degrees, on the modelling work completed by Tetra Tech EBA and provided in the reply to Underaking 26. Tetra Tech has further addressed this issue in their reply to IR U7 Parks#6 above, in which they also summarize their credentials.</p>
18	<p>GoC - PCA - 8 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Short Term Fish Habitat Loss-Sundog Creek</p>	<p><b>Comment</b> In Parks Canada's original IR 25 we indicated that the realignments of the river channel from existing stream channels to new areas within floodplain that were recently dry will result in short term losses in the quality of fish habitats. We outlined that these reductions in habitat quality for fish arise primarily from two factors. Firstly, lower habitat quality as new stream channels initially support lower abundances of benthic macroinvertebrates that serve as important food sources for fish. Secondly, areas of the floodplain that receive new flow will be more physically unstable for a period of time until the stream channel stabilizes. Taken together, reduced food availability for fish and unstable stream channels will likely persist for up to three years as the stream channels are colonized by benthic macroinvertebrates from upstream non-disturbed areas and as the channel stabilizes and more closely approximates upstream, non-disturbed areas that have received water for extended periods. In the response to IR 25, CanZinc indicates the following "Given that this stretch was (and continues to be) naturally depopulated from periods of bedload movement and periods where the channel is completely dry, it is expected to provide poor benthic invertebrate habitat relative to areas of Sundog Creek upstream of the stretch under consideration. Therefore, the relative impact on the creek from diverting the creek in this stretch compared to other stretches will be smaller." CanZinc concludes that a poor macroinvertebrate community similar to that described for the existing alignment would be established within one season. PCA continues to hold the opinion that the realignment of a section of Sundog Creek will affected benthic macroinvertebrates. Macroinvertebrate communities are complex structures. The variation of flow in the current channel may actually provide a diverse habitat with greater variability and possibly higher densities of benthic macroinvertebrates. The assertion</p>	<p><b>Nov 4:</b> See Hatfield document attached to PCA IR#2.</p>

		<p>that recolonization will match the current state of the existing channel within one season is unsubstantiated as there has been no data collected to describe the structure and abundance of the existing macroinvertebrate community. Benthic macroinvertebrates, such as insects, worms and crustaceans, which live on the bottom of streams and rivers are an important food for many northern stream fish species. Benthic macroinvertebrates are with certainty an important food source for fish species in the Sundog Creek drainage. Rerouting and training of the stream channel in Sundog Creek will result in flow being moved from an area that may support natural and high densities of benthic macroinvertebrates to an area(s) of the stream where macroinvertebrates are less abundant. Lower abundances of benthic macroinvertebrates communities in areas that have recently received flow will reduce the quality of habitat for fish in Sundog Creek until the stream channel is able to fully colonized. Many peer-reviewed scientific studies have quantified the rate at which recently created reaches of stream are colonized by benthic macroinvertebrates. A prominent review was completed by Mackay in 1988. The full reference is Mackay, R.J. 1988. Colonization of lotic macroinvertebrates: a review of processes and patterns, Canadian Journal of Fisheries and Aquatic Sciences, 49: 617-628. Colonization of benthic macroinvertebrates in new reaches of streams is highly variable and can take from months to years.</p> <p><b>Recommendation</b></p> <p>1. Provide a qualitative and quantitative description of the existing macroinvertebrate community for the existing and realignment sections of Sundog Creek.</p> <p>2. Ensure that fish habitat compensation plans take into account the short term reduction in the quality of fish habitat due to low densities of benthic macroinvertebrates</p> <p>3. Commit to monitoring the difference in benthic macroinvertebrate communities in the realigned channel for a minimum of three years following the realignment. The design could comprise 2 sites upstream of the alignment, 2 sites in the realigned stream channel and 2 sites located downstream of the realignment. The existing reference condition approach model for stream in the South Nahanni Watershed could be used to assess similarity in the structure of the benthic macroinvertebrate communities. Results from this monitoring program will then be used to support an adaptive management plan.</p>	
19	GoC - PCA - 9 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Sundog Realignment Alternative	<p><b>Comment</b></p> <p>The Allnorth (August 10, 2016) document states that an alternative route which was “only reviewed internally” offered “improved constructability” but was conversely rejected (internally reviewed by the proponent) “because of risks proposed to the bridge crossings.” In addition to offering this alternative alignment plan, profile, and bridge arrangement draft, Allnorth has also updated its plan and profile drawings for the proposed alignment in this segment. In light of this new information, and in reviewing them in parallel, the following should be noted: • the 'alternate' alignment has a more favourable horizontal alignment • the 'alternate' alignment cross section has much less safety risk (i.e. not adjacent to steep talus slopes, and generally farther offset from active/flood flows) • the general arrangement plans for the 'alternate' bridges appear to have hydraulic capacity well above the proposed 'diversion channel' and thus should support the flows as estimated by Tetra Tech EBA (August 10, 2016) • the crossings alternative has an overall smaller construction footprint, though does have a greater remediation requirement at the time of road reclamation</p> <p><b>Recommendation</b></p> <p>In order to satisfy PCA that the proponent has selected the best overall alignment, in light of this new information, we request the proponent provide the supplementary information that led to the selection of the diversion option over the crossings option.</p>	<p><b>Oct 31:</b> We are unsure as to what the 'supplementary information' is that Parks is referring to. We have provided all of the evidence available. Like Prairie Creek, the Sundog Creek system is large and while quiescent, even dry, a lot of the time, it may be prone to flood events. We witnessed two such events in Prairie Creek in 2006 and 2007, and saw the erosion damage to an unprotected road bed (Cadillac did not armour it). Therefore, we agree with Allnorth that there are potential erosion risks to bridge structures should they be built across Sundog Creek main stem on the floodplain section. We believe the risks are less by realigning the creek. We do not believe that the risks to the environment are significant from the realignment because:the creek previously occupied the channel we are proposing to use; we are taking steps to prevent the stream from avulsing back to the existing channel; we are providing mitigation to minimize fines mobilization when the realigned channel becomes active; the exisitng channel being realigned is fish migration habitat, and will be duplicated in the realigned channel; and, benthos is very limited in the alpine, nutrient-poor area and recolonization is expected to occur quickly in the realigned channel. This is the basis for our preference of the diversion option.</p>

20	GoC - PCA - 10 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Footprint of Road in Floodplain	<p><b>Comment</b> <a href="#">(doc)</a></p> <p>In an Allnorth Report dated Aug. 17th, 2016, the portions of the road that would occupy different components of the floodplain were identified using the Q2 and Q100 HWM flow projections provided by Tetra Tech EBA. Parks Canada also notes that in a Hatfield Memo dated Sept. 6th, 2016, estimates of the amount of aquatic habitat that would be impacted by the proposed all season road were performed using the Q2 HWM flow projections. As stated during the initial round of Information Requests, because of the ecological significance of the floodplains in these systems (see Bornette et al. 1998; Naiman and Décamps 1997; Hauer et al. 2016) Parks Canada is interested quantifying the road footprint in the floodplain to understand impacts to all components of the floodplain (biotic and abiotic). Parks Canada recognizes that the proponent has provided data regarding the road footprint at different flow projections, but that these are two ends of the spectrum. An estimate based on Q20 HWM flow projection would provide more suitable information to assess the environmental impacts of the project</p> <p><b>Recommendation</b></p> <p>1. Calculated footprint of proposed road in the active floodplain (in m2) using Q 20 HWM flow projections.</p>	Nov 4: <a href="#">(doc)</a> See Hatfield document attached to PCA IR#2.
21	GoC -PCA - 11 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Sundog Creek-Road Realignment Hydrology	<p><b>Comment</b></p> <p>Tetra Tech has stated that the south channel of Sundog Creek at the proposed realignment area is capable of withstanding 100 year floods within the main channel without overtopping the existing channel (Tetra Tech July 5, 2016). The preliminary design provided by Tetra Tech (August 10, 2016) is described as capable of withstanding 100 year flows once tweaked. The design was prepared based on basin extrapolation of regional peak flows data (Tetra Tech March 17, 2016). Parks Canada notes that there are several methods of hydraulic modelling. Verification of hydraulic modelling through other methods would increase confidence in the hydraulic modelling for Sundog Creek.</p> <p><b>Recommendation</b></p> <p>Provide at least one more hydraulic model for Sundog Creek through alternate modelling methods.</p>	Oct 31: See Tetra Tech document attached to IR#6.
22	GoC - PCA - 12 Source: Parks Canada Agency To: Canadian Zinc Corporation Subject: Sundog Creek Restoration	<p><b>Comment</b></p> <p>TetraTech (August 10, 2016) describes the construction of a diversion berm which will divert water into the realigned channel. A pilot channel inlet will also be constructed adjacent to the berm to ensure that water flows into the realigned channel, even if the realigned channel is blocked. Following the closure of the road, restoration of the site must ensure that natural processes are able to occur.</p> <p><b>Recommendation</b></p> <p>Describe specific reclamation activities which will be carried at the Sundog Creek Realignment to ensure that natural stream processes are unimpeded following the closure of the road.</p>	Oct 31: Parks has previously asked CZN to commit to removing the berm after closure of the road. We have declined to make such a commitment because this has not been discussed with local First Nations (FN). Engagement is needed to determine what, if any, use of the Mine and road will be made after mine closure. On the assumption that there will be no further use of the road, and that the FN preference is for berm removal, the structure will be removed to leave a natural stream bank next to the stream channel i.e. not lower than the channel which would induce the channel to change course. The stream bank will consist of gravel-cobble material, similar to that in the floodplain, to protect it from erosion and generation of fines. Natural stream processes will then take over.
23	GoC - PCA - 13 References	<p><b>Comment</b> <a href="#">(doc)</a></p> <p>IR References</p> <p><b>Recommendation</b></p> <p>Attached</p>	

MVEIRB Round 2 Information Requests related to Undertaking #7 and the Sept. 22 GNWT letter

ID	Topic	Comment/ Recommendation	GNWT Response
1	Leasing and land tenure options and access control	<p><b>Comment</b></p> <p>The Review Board seeks clarification from the GNWT regarding their September 22 letter to CanZinc on how the described land tenure obligations and additional lease requirements may affect access control to the proposed all-season road.</p> <p><b>Recommendation</b></p> <p>The Review Board requests the following informatin from the GNWT:</p> <ul style="list-style-type: none"><li>Does a lease allow the lease holder to restrict access (e.g. fence, gate) onto a leased parcel of land. Provide examples.</li><li>Submit to the Board provisions that can legally be applied to a lease regarding prohibiting access onto or through a lease</li><li>Is there an opportunity to use a lease to restrict access to the proposed all-season road?</li><li>Describe any other land tenure options available to the GNWT to limit access on the proposed all-season road</li></ul>	<p><b>Oct 24: GNWT Response:</b></p> <p>1. Does a lease allow the lease holder to restrict access (eg. fence, gate) onto a leased parcel of land? Provide examples.</p> <p>As set out in the response to Round 1 IR#44, a lease is a tenure instrument which grants an exclusive right to occupy and allow the lessee to control access onto that parcel of land. A lessee may place structures and improvements on the lease land if it is consistent with the use described in the lease. For example, improvements such as gates and fences are common on lease parcels in the NWT where there may be materials and infrastructure the lessee needs to protect and where the lessee needs to minimize liabilities. Examples of leases which have been fenced or gated by the lessee include fuel tank sites, explosives storage areas and open pits.</p> <p>2. Submit to the board provisions that can legally be applied to a lease regarding prohibiting access onto or through a lease.</p> <p>For clarity, a lease by definition allows the lease holder to prohibit access by other parties onto or through the land in question, except in certain emergency/public safety situations. This is because, as set out in the response to Round 1 IR#44, a lease interest conveys exclusive possession to the lease holder. A lease holder may also choose to allow others access onto or across the lease. GNWT notes that lessees may not enter into sub-leasing arrangements (granting access in exchange for payment), without the express consent of the lessor (GNWT). Land leases may include conditions to allow access, including for the following circumstances:</p> <ul style="list-style-type: none"><li>a) for emergency use, particularly along waterfront leases;</li><li>b) by government officials for inspections and compliance; and</li><li>c) for the development of a public utility.</li></ul> <p>3. Is there an opportunity to use a lease to restrict access to the proposed all-season road?</p> <p>Whether the lease/leases for the barge landing sites will provide an access control mechanism for the road is dependent upon if the road route traverses through the lease year round or if traffic traverses through the leased land only during the summer barging season. Further, the GNWT cannot accurately state whether any leases required for the barge landing or laydown sites will restrict road access as GNWT currently does not have lease applications and accompanying detailed designs to consider. That said, the lease of the barge landing site may prevent ease of access to the roadway if the lessee so desires. Although the GNWT does not have these particular lease applications to consider, on September 23 GNWT issued IRs to Canadian Zinc to foster a robust assessment of potential impacts in relation to the proposed development and potential leases at that location. Additionally, on October 3 GNWT held a teleconference with Canadian Zinc to discuss the relevance of GNWT’s September 22 land tenure obligations letter to the environmental assessment. In order to support further and timely discussion of this particular subject during the environmental assessment, GNWT encourages Canadian Zinc to provide adequate responses to the GNWT’s September 23 information requests. Canadian Zinc developments described to date include barge operations across the Liard River and other laydown, storage and maintenance facilities to support the road operation that will require a land lease (as noted in GNWT’s letter to the board on September 22nd). This requirement is consistent with other requirements for long-term commercial/industrial developments on GNWT land across the territory. For the barge landing, water lot leases will be required where improvements are constructed below the ordinary high watermark (OHWM) and placed on the bed of the body of water. A lease for the adjoining shore lands above the OHWM generally accompanies the water lot lease to the extent that the barge operations and supporting infrastructure require. Leasing these water lots for barge landings/dock facilities and adjacent land necessary for the operation is consistent with other allowed supporting infrastructure for similar commercial/industrial developments in the NWT, including other sites along the Liard River. Please note that Indigenous and Northern Affairs Canada (INAC) currently holds administration and control of the south shore (above the OHWM) of the Liard River and GNWT has no jurisdiction to require leasing of those lands.</p> <p>4. Describe other land tenure options available to the GNWT to limit access on the proposed allseason road.</p> <p>The GNWT is the manager of public land and works within its legislative and policy framework to manage land in the best interests of the public as a whole. The Department of Lands deals with land applications on a case-by-case basis, considering the proposed use of the land, location and any concerns raised during consultation. As stated in the response to Round 1 IR#44, the GNWT has reviewed its legislative and regulatory tools and has not identified any mechanisms, including land tenure to control access by the public along the length of industry-developed roads. That said, some of Canadian Zinc’s proposed developments are located on water-lots or on parcels of land associated with the all-season road that require a lease in order to manage the use of land while protecting tax payers, occupants and the environment. The issuance of a lease for the barge-landing site would not prevent anyone from traversing through the territorial land around the leased parcel to access the road on the other side of the lease, but the lease may diminish the ease of access to the roadway.</p>