



Mark Cliffe-Phillips
Executive Director
Mackenzie Valley Environmental Impact Review Board
200 Scotia Centre – 5102 – 50th Ave
YELLOWKNIFE, NT X1A 2N7

Dear Mr. Cliffe-Phillips:

RE: EA1415-01 CanZinc All-Season Access Road Federal Response to Second Round of Information Requests

The Canadian Northern Economic Development Agency's Northern Projects Management Office is pleased to provide the following information requests regarding fish and fish habitat and Sundog Creek (Technical Session Undertaking number seven) on behalf of the Government of Canada for the above noted environmental assessment ("EA"). The attached includes information requests from Fisheries and Oceans Canada and Parks Canada Agency. Other federal departments involved in this review did not have information requests at this time.

The Government of Canada appreciates the Mackenzie Valley Environmental Impact Review Board providing adequate time for parties to review documents relating to these topics and looks forward to continued participation in this EA.

Sincerely,

Matthew Spence
Director General
Northern Projects Management Office
Canadian Northern Economic Development Agency

Attachments (3): 1. Federal Contact List (Annex A)
2. Fisheries and Oceans Canada Cover Letter
3. Government of Canada Information Requests

**Contact List from Federal Departments for Canadian Zinc Corporation's
Prairie Creek All Season Access Road Project**

Northern Projects Management Office

Sarah Robertson
Project Manager
Telephone: (867) 669-2601
Email: Sarah.Robertson@CanNor.gc.ca

Environment and Climate Change Canada

Loretta Ransom
Senior Environmental Assessment Coordinator
Tel: (867) 669-4744
Email: Loretta.Ransom@canada.ca

Fisheries and Oceans Canada

Megan Lay
Fisheries Protection Biologist
Tel: (306) 780-8103
Email: Megan.Lay@canada.ca

Parks Canada Agency

Allison Stoddart
Environmental Assessment Scientist
Tel: (819) 420-9188
Email: Allison.Stoddart@pc.gc.ca

Natural Resources Canada

Rachelle Besner
Senior Environmental Assessment Officer
Tel: (343) 292-6746
Email: Rachelle.Besner2@canada.ca



Fisheries and Oceans Pêches et Océans
Canada Canada

501 University Crescent
Winnipeg, Manitoba
R3T 2N6

October 5, 2016

Your file Votre référence
EA1415-01

Our file Notre référence
08-HCAA-CA6-00114
15-HCAA-01626

Mackenzie Valley Environmental Impact Review Board
Attention: Chuck Hubert
Environmental Assessment Officer
P.O Box 938, #200 Scotia Centre
5102-50th Ave., Yellowknife, NT
X1A 2N7

Dear Mr. Hubert:

Subject: Information Requests, Second Round – Prairie Creek All Season Road Project – EA1415-01

The Fisheries Protection Program of Fisheries and Oceans Canada (DFO-FPP) would like to thank the Mackenzie Valley Environmental Impact Review Board for the opportunity to provide comments for the second round of Information Requests (IRs).

As outlined in your request dated August 30, 2016, interested parties are invited to provide IRs directed to the proponent and/or other parties to the Mackenzie Valley Environmental Impact Review Board by October 7, 2016.

DFO-FPP has reviewed the following and has prepared (attached) according to the format requested by the Mackenzie Valley Environmental Impact Review Board (*Environmental Impact Assessment Guidelines, 2004, Appendix F*):

- Hatfield's Prairie Creek Mine, All Season Road Habitat Loss and Offset-DRAFT Memo.
- Hatfield's, All Road Supplementary Habitat Information Memo.
- CZN's Environmental Assessment.
- AllNorth's Response to Technical Review Undertakings.
- The Mackenzie Valley Environmental Impact Review Board's Complied Responses to Individual IRs.

If you have any questions, please contact Megan Lay at 306-780-8103, or by email at Megan.lay@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with DFO-FPP.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'M. Curtis', with a large loop at the end of the last name.

Martyn Curtis
A/Regional Manager, Regulatory Reviews
Fisheries Protection Program

ATTACHMENT LIST:
08-HCAA-CA6-00114 DFO Information Request Prairie Creek.doc

cc. Megan Lay – DFO, Regina
Vincent Harper – DFO, Regina

Fisheries and Oceans Canada

Information Requests

Prairie Creek All Season Road Project EA1415-01

Submitted to:
Mackenzie Valley Environmental Impact Review Board (MVEIRB)

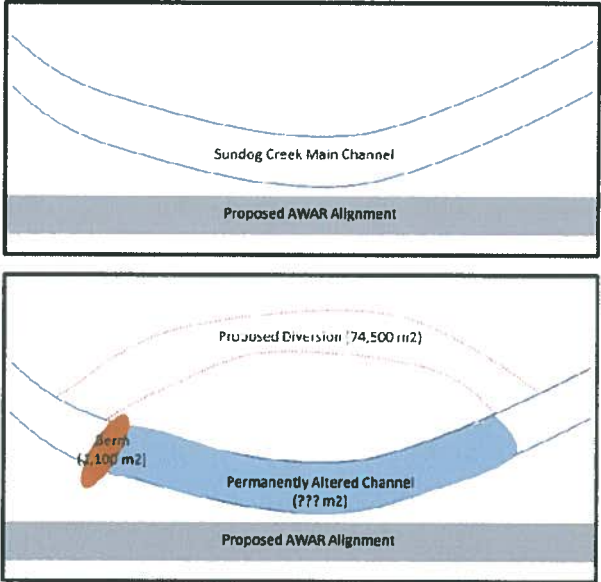
October 5, 2016
DFO File No.: 08-HCAA-CA6-00114

Information Requests

IR Numbers	1
To	Canadian Zinc Corporation
Subject	Defining Floodplains
Reference	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)
Preamble	<p>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. Any interpretation 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>
Information Requests	<p>1 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>

IR Numbers	2
To	Canadian Zinc Corporation
Subject	Laird River Field Notes
Reference	Environmental Assessment. Hatfield Memo submitted to MVEIRB (September 6, 2016)
Preamble	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.
Information Requests	2 Please provide field notes from September 2014 from which the habitat datasheet for the Liard River was derived.

IR Numbers	3
To	Canadian Zinc Corporation
Subject	DFO Table 2-1
Reference	Environmental Assessment
Preamble	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 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).
Information Requests	3 Please provide a finalized version that is an update to "DFO Table 2-1" first provided in May 2016.

IR Numbers	4a-d
To	Canadian Zinc Corporation
Subject	Environmental Assessment
Reference	Allnorth (May 2, 2016) on page 3. Environmental Assessment.
Preamble	<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> 
Information Requests	<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</p>

	<p>become isolated and stranded at a greater frequency in this region following the construction of the diversion channel than during baseline conditions.</p> <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.</p>
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IR Numbers	5a-b
To	Canadian Zinc Corporation
Subject	Table 2
Reference	Hatfield Memo submitted to DFO and PC (September 6, 2016)
Preamble	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.
Information Requests	<p>5a Please provide the finalized memo for Undertaking 7; a draft of which was submitted to DFO and PCA on September 6, 2016.</p> <p>5b Please revise Table 2 to ensure that no items are missed and all encroachments have been fully accounted for.</p>

IR Numbers	6a-c
To	Canadian Zinc Corporation
Subject	Crossing KM 124.5, crossing KM 39.4 and crossing KM 53.5
Reference	Hatfield Memo submitted to DFO and PC (September 6, 2016)

Preamble	Crossing at KM 124.5 was noted to result in the loss of 150 m ² 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 m ² in the Hatfield memo submitted to DFO and PCA on September 6, 2016, but had a footprint of 200 m ² in DFO Table 2-1, submitted as 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.
Information Requests	<p>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.</p> <p>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.</p> <p>6c. Please clarify whether the crossing at KM 53.5 is a bridge or a culvert.</p>

IR Numbers	7
To	Canadian Zinc Corporation
Subject	Offsetting
Reference	Hatfield Memo submitted to DFO and PC (September 6, 2016)
Preamble	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.
Information Requests	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.
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IR Numbers	8
To	Canadian Zinc Corporation
Subject	High Water Mark
Reference	Hatfield Memo submitted to DFO and PC (September 6, 2016)
Preamble	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."
Information Requests	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.

IR Numbers	9
To	Canadian Zinc Corporation
Subject	Technical Sessions
Reference	Technical Sessions, Hatfield memo
Preamble	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

	<p>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).</p> <p>Fisheries and Oceans Canada’s understanding of these smaller realignments is illustrated below. Areas identified as “???? m²” must be quantified.</p> <div data-bbox="667 478 1344 1077"> <p>The top diagram shows a cross-section of a channel. A blue line represents the 'Sundog Creek Main Channel' and a grey line below it represents the 'Proposed AWAR Alignment'. The bottom diagram shows a cross-section with a blue line representing the 'Diversion(??? m2)' area and a grey line below it representing the 'Infilled Channel (??? m2)', both relative to a 'Proposed AWAR Alignment'.</p> </div>
<p>Information Requests</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>

Summary of Information Requests

1. Defining Floodplains

1

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.
2. Laird River Field Notes	
2	Please provide field notes from September 2014 from which the habitat datasheet for the Laird River was derived.
3. DFO Table 2-1	
3	Please provide a finalized version that is an update to "DFO Table 2-1" first provided in May 2016.
4. Environmental Assessment	
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, what is the habitat restoration plan that would be deployed to remove the dyke following the mine closure?
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) ie., where it starts and ends.
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.
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.
5. Hatfield Memo-Table 2	
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.
6. Hatfield Memo-Crossing KM 124.5, Crossing KM 39.4 and Crossing KM 53.5	
6a	Please clarify why crossing at KM 124.5 was noted to result in the loss of 150 m ² 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 m ² in the Hatfield memo but had a footprint of 200 m ² in DFO Table 2-1.
6c	Please clarify whether the crossing at KM 53.5 is a bridge or a culvert.

7. Offsetting	
7	Please address the risk that these potential 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.
8. High Water Mark	
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.
9. Technical Sessions-Hatfield Memo	
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 meters (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.

Nazim Awan - Re: FW: CanNor Application

From: Nazim Awan
To: Patricia Davison
Date: 10/7/2016 9:21 AM
Subject: Re: FW: CanNor Application
CC: 'Fraser Pearce'; 'chair'

Dear Patricia Davison,

It is acknowledged that CanNor has received an application from Children First Society (CFS). Children First Society's project was selected to submit complete application under CanNor Expression of Interest for Innovation and Clean Technology initiative. I will review the application package and if necessary within next few weeks, will contact you for any additional information.

Best regards,
Nazim

Nazim Awan

Canadian Northern Economic Development Agency/Government of Canada
nazim.awan@cannor.gc.ca / Tel: 867-669-2586 / Fax: 867-766-8401
www.north.gc.ca

>>> "Patricia Davison" <execdir@childrenfirstsociety.org> 10/7/2016 9:12 AM >>>
Nazim,

You'll find attached an application for funding and the supporting documents for the Children First Society's Photovoltaic and Biomass Green Energy Conversion project. These include:

1. SINED Application Form: signed application form
2. SINED CFS Application Package: detailed project application
3. GSR Quote 14 Sept 2016: contractor quote from Green Sun Rising for 15 kW Photovoltaic System
4. GSR 10kW Rec Complex Kugluktuk Nunavut: info sheet for recently completed GSR reference
5. GSR 20kW Behchoko Community Complex NWT: info sheet for recently completed GSR reference
6. ARC CFC Wood Pellet Boiler Quote: contractor quote from Arctic Restoration Corp for 80 kW biomass boiler system

Please let me know if you require any additional information to process this application.

Thank you for considering our project.

We look forward to hearing from you.

Patricia Davison
Executive Director
(867) 777 - 3703
Children First, Helping Children Achieve Their Greatness!

This email has been checked for viruses by Avast antivirus software.

<https://www.avast.com/antivirus>