



MACKENZIE VALLEY ENVIRONMENTAL

IMPACT AND REVIEW BOARD

PRAIRIE CREEK ALL SEASON ACCESS ROAD

CANADIAN ZINC CORPORATION

TECHNICAL SESSION

Mackenzie Valley Review Panel:

Chairperson	Joanne Deneron
Board Member	David Krutko
Board Member	Joe Handley
Board Member	Yvonne Doolittle
Board Member	Bertha Norwegian
Board Member	Sunny Munroe

Fort Simpson, NT

April 26, 2017

Day 1 of 3

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11	Toby Perkins) Advisor
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16	Alan Taylor)
17	Clayton Konisenta)
18	Wilbert Antoine)
19	Joseph Lanzon)
20	Ernie Kragt) Allnorth Consultants
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24	Franco Oboni (by phone))
25	Ray Michaud)Member of the Public

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1	LIST OF UNDERTAKINGS		
2	NO.	DESCRIPTION	PAGE NO.
3	1	Canadian Zinc to respond to any	
4		questions about Table 7.1 and 7.2	
5		from their hearing presentation	
6		by the undertaking's deadline	44
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14		so an answer can be given as	
15		Undertaking No. 3.	115
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1	LIST OF COMMITMENTS		
2	NO.	DESCRIPTION	PAGE NO.
3	1	Canadian Zinc will provide an	
4		updated risk assessment as part	
5		of detailed design	58
6	2	For Canadian Zinc commit to routing	
7		the Liard River winter crossing	
8		completely through the territorial	
9		land surface lease on the north	
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18		includes other emergencies.	116
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1 --- Upon commencing at 9:02 a.m.

2

3 THE CHAIRPERSON: Good morning,
4 everyone. My name is Joanne Deneron, and I am the
5 chair of the Mackenzie Valley Environmental Impact
6 Review Board. Welcome to the public hearing for the
7 Prairie Creek all-season road.

8 Before we begin, I would like to
9 acknowledge that we are holding this hearing in the
10 traditional territory of the Dehcho First Nations. We
11 will begin with an opening prayer, and I now invite
12 our Grand Chief of Dehcho First Nations, Herb
13 Norwegian, to start with an opening prayer and some
14 opening remarks.

15

16 (OPENING PRAYER)

17

18 OPENING COMMENTS BY DEHCHO FIRST NATIONS:

19 GRAND CHIEF HERB NORWEGIAN: I was
20 just asked to do a couple of quick comments, I think.
21 I just wanted to thank you all for coming here, all
22 the -- your Board, and Joanne, and good to see Joe
23 again. Good to see all. Thanks for coming to the
24 great Dehcho territory. We want to make sure that the
25 discussion is good, and we're here if you're -- need

1 any help, just give us a call. The Dehcho First
2 Nation staff is here -- we're here to help out.

3 And, of course, the First Nations, the
4 Liidlíi Kue First Nations, the Metis, so if there's
5 any questions we -- we're available. And again we
6 want to welcome you to our community. Masi, Joanne.
7 Masi.

8 THE CHAIRPERSON: Masi, Grand Chief.

9

10 OPENING COMMENTS BY THE CHAIRPERSON:

11 THE CHAIRPERSON: We are here today to
12 hear your views, and listen to them, on the potential
13 impacts of the proposed Prairie Creek all-season road.
14 The Developer is Canadian Zinc, or Can Zinc.

15 For those requiring translation, there
16 are receivers available on the tables and at the back
17 with English on channel 2, South Slavey on channel 4.
18 The washrooms are out the main door that you came in
19 in the far corner across the hall, and the emergency
20 exits are labelled in the back of the rooms here as
21 indicated by the signs.

22 The project consists of the
23 construction, the operation, and closure of 180
24 kilometre all-season access road from Prairie Creek
25 mine to the Liard Highway at the Nahanni Butte access

1 road. Approximately half of the mine road is located
2 within Nahanni National Park Reserve. The purpose of
3 the mine road is to supply Prairie Creek mine with
4 operating materials, and to transport lead and zinc
5 concentrate from the mine to market.

6 Canadian Zinc will provide a detailed
7 presentation of their project shortly.

8 The Review Board's mandate. The Review
9 Board is a co-management body established under Part 5
10 of the Mackenzie Valley Resource Management Act. The
11 Review Board is responsible for the environmental
12 assessment and environmental impact review of
13 developments in the Mackenzie Valley.

14 Board members are all Northerners
15 nominated by First Nations and by -- by the Tlicho
16 territorial and federal governments. The Review Board
17 endeavours to makes it -- its decisions by consensus.

18 Our goal is to make decisions that will
19 protect the environment, including the social,
20 economic, and cultural well-being of all residents of
21 the Mackenzie Valley now and for future generations.

22 I would like to introduce our Board
23 members as well as our Board staff and counsel. Board
24 members...

25 MR. DAVID KRUTKO: David Krutko.

1 MR. JOE HANDLEY: Joe Handley.
2 MS. SUNNY MUNROE: Sunny Munroe.
3 MS. BERTHA NORWEGIAN: Bertha
4 Norwegian.
5 MS. YVONNE DOOLITTLE: Yvonne
6 Doolittle.
7 MR. MARK CLIFFE-PHILLIPS: Mark
8 Cliffe-Phillips, with the Review Board.
9 MR. JOHN DONIHEE: John Donihee. I'm
10 Board counsel.
11 MR. TOBY PERKINS: Toby Perkins,
12 technical advisor to the Board.
13 MS. KATE MANSFIELD: Good morning. My
14 name is Kate Mansfield. I'm with the Review Board.
15 MS. CATHERINE FAIRBAIRN: Catherine
16 Fairbairn.
17 MR. CHUCK HUBERT: Chuck Hubert.
18 MS. ROBYN PADDISON: Robyn Paddison.
19 MR. BRETT WHEELER: Brett Wheeler.
20 MR. ALAN EHRLICH: Alan -- Alan
21 Ehrlich.
22 THE CHAIRPERSON: We have one (1) more
23 staff member at the back, and it's Catherine McManus.
24 Just wave, Catherine. And Stacy Menzie's right there,
25 right behind counsel sitting in the audience. We also

1 have one (1) more Board member from the Tlicho, James
2 Wah-Shee, but, unfortunately, James is unable to make
3 the hearing and apologizes.

4 The referral to environmental
5 assessment. This project was referred to
6 environmental assessment by the Mackenzie Valley Land
7 and Water Board. The environmental assessment process
8 steps to date. The Review Board hosted several MS.
9 ISSA BJORNSEN: -- the Review Board hosted issues,
10 scoping meetings, in Nahanni Butte, Fort Simpson, and
11 Fort Liard to prioritize and focus the environmental
12 assessment.

13 Can Zinc submitted its Developer's
14 assessment report in April of 2015. And the
15 Developer's assessments report was considered adequate
16 to proceed to the technical review phase in the spring
17 of 2016.

18 Since then, there have been two (2)
19 rounds of formal written Information Requests and
20 responses, a four (4) day technical session in
21 Yellowknife, and a cultural impact workshop in both
22 Nahanni Butte and in Fort Simpson. Based on all these
23 steps, parties submitted their final technical reports
24 in March of 2017.

25 The scope of development. The Prairie

1 Creek Mine and winter road were assessed in 2010 and
2 '11. In that environmental assessment, the Review
3 Board determined that use beyond the winter road
4 operating season could have significant adverse
5 impacts. This current environmental assessment
6 considers that any changes to the assessed and
7 permended -- permitted winter road that was previously
8 constructed in the 1980s.

9 The scope of this environmental
10 assessment includes design considerations for the
11 entire length of the road. These considerations
12 include the road design standards, upgrade to any
13 features, any realignments, and any stream crossings.
14 The scope of the assessment will consider the
15 construction, operation, closure, and post-closure of
16 the project.

17 The hearing procedures. This is a
18 formal public hearing. The Review Board is holding
19 this public hearing to hear directly the views and
20 opinions of parties and Canadian Zinc about the
21 potential impacts of the Prairie Creek all season
22 road.

23 Here is how we will proceed: Can Zinc
24 will introduce its representatives and presents its
25 opinion on the potential impacts of the Prairie Creek

1 all season road on the environment and people.

2 All parties will have the opportunity
3 for questioning after presentations. And for the
4 presentations from other parties, Can Zinc will ask
5 questions last. There may be questions from Review
6 Board staff and also Review Board members.

7 Parties will briefly introduce their
8 team at the beginning of questioning and may do so
9 again in the following days if their representatives
10 change as the hearing topics change. Parties should
11 be prepared to keep their questions after the
12 presentations within the timelines set out on the
13 agenda.

14 Presentations by parties are a summary
15 of technical reports. Review Board members are
16 familiar with your technical report, so your
17 presentations should focus on the key points and
18 priorities.

19 Hearing topics for today include: Can
20 Zinc project description; accidents and malfunctions;
21 permafrost, soils, and terrain.

22 I have a few additional comments on
23 today's proceedings that I hope will make sure
24 everything goes as smoothly as it can. We have
25 limited time and the Review Board is committed to

1 hearing what everyone has to say. An agenda for the
2 hearing is available at the door.

3 And during the pre-hearing conference,
4 parties were reminded to keep their presentation times
5 short to allow for questioning at these hearings. I
6 ask that everyone respect the time requirements of
7 other parties during presentations and questioning,
8 and to use their time productively.

9 Presenters will be timed and given five
10 (5) minute warnings. Be advised that when your time
11 is up, you may be interrupted. Keeping to your
12 allotted time is important to make sure that everyone
13 gets their fair chance to be heard.

14 Our Board is committed to fairness.
15 The Review Board will be producing an official
16 transcript of the hearings and the transcript will be
17 available the day following each hearing. Parties
18 will be invited to ask questions in turn after each
19 presentation, and the presenter will be asked to
20 respond to the question.

21 The order of questioning will follow
22 the list of Intervenors shown on the last page of the
23 agenda, which is available at the back where Catherine
24 is seated. After questions from parties I will invite
25 questions from staff, from counsel, and Review Board

1 members.

2 We also ask that those responding to
3 questions be direct and helpful in their responses.
4 All questions and answers are permitted at the
5 discretion of the Chair. But once a line of questions
6 is initiated, I will allow parties to question one
7 another directly rather than approving every question.

8 Be advised, however, that I will
9 intervene if the relevance or appropriateness of a
10 question is not clear to me. If Can Zinc or a party
11 needs more than a few moments of caucus time prior to
12 responding to a question, I may ask for it to be
13 answered later in writing as a formal undertaking.

14 I want to be sure that valuable hearing
15 time is spent efficiently. Can Zinc will give its
16 presentation first this morning. After the
17 presentation parties will be asked quest -- will be
18 asking questions. Please use a microphone for all
19 questions and responses so that everyone, including
20 our transcriber, can hear clearly.

21 Please remember to state your name
22 before you speak. Please remember that all times are
23 ultimately at the discretion of the chair, and may be
24 changed to respond to the issues as they arise.

25 In conclusion, we want to understand

1 what you think about the potential impacts of the
2 Prairie Creek all-season road. We need you to clearly
3 share your views on the potential impacts from the
4 project on environmental, social, economic, and
5 cultural values.

6 The Review Board also asks you to
7 present your views and opinions on the significance of
8 these potential impacts.

9 After the hearings, the Review Board
10 will fully consider these views while it is
11 deliberating on its decision in this environmental
12 assessment. Once that decision is made, the Review
13 Board will prepare a report of environmental
14 assessment that describes the reasons for its
15 decision, and will submit to the GNWT Minister of
16 Lands.

17 MR. MARK CLIFFE-PHILLIPS: Quick --
18 quick correction. That -- that would be to the
19 Minister of INAC.

20 THE CHAIRPERSON: Well, it was INAC
21 yesterday --

22 MR. MARK CLIFFE-PHILLIPS: Apologies.

23 THE CHAIRPERSON: -- and I thought
24 maybe it changed in some miracle today.

25 The subjects that we will hear over the

1 next several days are important to the residents of
2 the Mackenzie Valley. You are all aware of the latest
3 caribou population estimates which have been added to
4 our public record. These underscore the seriousness
5 of the Board's responsibilities, and we will make
6 every effort to listen carefully to you to get the
7 information we need to make the best decisions
8 possible in this envir -- in this environmental
9 assessment.

10 I will now ask Canadian Zinc to please
11 briefly introduce its representatives for today, and
12 you may begin your presentations.

13

14 PRESENTATION BY CANADIAN ZINC

15 MR. ALAN TAYLOR: Thank you, Madam
16 Chair. It's Alan Taylor, chief operating officer for
17 Canadian Zinc. I'd like to introduce my team that's
18 present at the table here today.

19 And I certainly would like initially to
20 thank Chief Antoine and LKFN for accommodating these
21 discussions, and the Grand Chief for his opening
22 remarks, and the community for its interest in this.

23 To the left of me I have David Harpley,
24 the VP of environmental affairs and permitting. And
25 just skipping one over to the far left, I have Wilbert

1 Antoine, our northern manager. And in the back behind
2 me, Joseph Lanzon, our government affairs person, and
3 our other manager here is Clayton Konisenta.

4 And two (2) down from me we have our
5 all-north consultant. He's the engineer and has done
6 a lot of the -- the design work for the road. And we
7 may have some people joining us on the phone, but I'll
8 introduce them as that happens. Masi cho.

9

10 (BRIEF PAUSE)

11

12 THE CHAIRPERSON: Okay. Canadian
13 Zinc, you're ready for your presentation?

14 MR. DAVID HARPLEY: Thank you, Madam
15 Chair. Norbert, am I okay for sound level? Okay.
16 Good. Thank you, everybody. I'm going to give our
17 presentation. Yeah, it's Dave Harpley talking.

18 And you'll be pleased to know that I'm
19 not going to repeat everything that I have the last
20 two (2) days. I think most people will have heard it,
21 and those that are new here I'm sure have either read
22 the presentation already, or through the process are
23 familiar with the material. So I'm going to again
24 skip over some things, and try and focus on things
25 that I think are more pertinent and of interest.

1 So I'm going to start here with the
2 route, and with water bodies. I think it -- it may be
3 useful to the Board in particular to get a better
4 grasp of the terrain and of the features. And I'm --
5 I'm doing this as kind of a introduction to risk
6 assessment, which is what I want to spend a little
7 more time on this morning.

8 THE CHAIRPERSON: Mr. Harpley, just
9 before you go any further, would you be so kind to
10 reference the slide number as we have people on line,
11 as well.

12 MR. DAVID HARPLEY: Okay.

13 THE CHAIRPERSON: Okay. Thank you.
14 And just move the mic a little bit closer to you.
15 Thank you.

16 MR. DAVID HARPLEY: Okay. So how's
17 that for sound?

18 THE CHAIRPERSON: That's as good as
19 it's going to get. Thank you.

20 MR. DAVID HARPLEY: Okay. So right
21 now we're on slide 5. We're looking at the slide
22 that's titled 'Major Water Bodies' and we're starting
23 at the western end. And -- oops, wrong button.

24

25 (BRIEF PAUSE)

1 MR. DAVID HARPLEY: So here we are at
2 the mine, and the road first of all heads upstream on
3 Prairie Creek -- parallelling Prairie Creek and then
4 takes a turn to go east, and parallels Funeral Creek
5 up to the pass here, which is also the -- a boundary
6 of the Nahanni National Park Reserve.

7 These two (2) creeks are fish bearing.
8 We have bull trout in Funeral Creek up to about
9 kilometre 11 which is around about here, if you can
10 see my pointer. Thereafter the creek splits into
11 three (3) separate tributaries which are very steep,
12 and based on observations and on electroshocking
13 don't contain fish.

14 We then continue over the pass, and
15 enter the drainage of Sundog Creek and we -- the road
16 actually parallels and in a few places actually
17 crosses the creek in this stretch down to kilometre
18 23. And then the proposed all-season road will stay
19 on the south side of Sundog Creek all the way down to
20 a location where it moves away from the creek at Cat
21 Camp, that run about kilometre 40.

22 There is a large waterfall at around
23 about kilometre 25. The waterfall I think is roughly
24 about 10 metres high. So the stretch of Sundog Creek
25 upstream is -- does not contain fish because they're

1 not able to access upstream. However, downstream it
2 is accessible to fish. And grayling have been
3 observed, at least in the summer, in this stretch,
4 which is a series of ripples and pools and -- and kind
5 of small waterfalls.

6 So this is really the mountainous
7 section of the route. This is the highest point here
8 at the pass. The grade here from the mine is
9 relatively gentle up to about kilometre 13 here. And
10 then the grade increases up to the pass, and then
11 decreases again fairly gently on this side. And then
12 there is more grade on the south side of Sundog Creek
13 here.

14 And then once we get to about kilometre
15 25 -- sorry, 29, around about this location, we go
16 onto the flood plain of Sundog Creek where it's
17 basically quite broad and flat and -- and very easy
18 terrain. And that continues all the way to Cat Camp
19 before the road actually leaves the valley and crosses
20 woodland terrain.

21 So it continues through the woodland
22 terrain, through this section. It -- it crosses a
23 creek, Polje Creek, at about kilometre 53. And then,
24 right after that point is where we start doing
25 somewhat of an ascent to climb onto the Ram Plateau.

1 So there's a little bit of grade in
2 some of the sections in here. But then, after a few
3 kilometres, around about kilometre 55, 56, we're
4 essentially on top of the plateau. And you can see
5 from the drainage that we're actually traversing
6 between drainage, so it's a height of land, but it --
7 but it's still relatively flat.

8 On the other side of the plateau here
9 there is a gradual descent on the eastern side. I'm
10 now on slide 7. And here at kilometres 87 and 89 we
11 have the crossings of the Tetcela River. The first
12 one is a tributary and the second one is the main
13 stem.

14 This is woodland terrain in here. It's
15 not particularly steep in terms of grade. In fact,
16 it's quite shallow. And the crossings themselves are
17 reasonably significant. But apart from that, the
18 terrain is relatively easy.

19 After kilometre 90 in the crossing we
20 go through a section of more marshy terrain, kind of
21 wetland terrain. This is the Fishtrap drainage. And
22 we're close to the headwaters of Fishtrap when we
23 cross at about kilometre 95. The -- the upstream end
24 of the catchment is just to the north of the road, and
25 the majority of it is to the south.

1 We don't believe Fishtrap is actually
2 fish bearing where we cross. It's a very poor habitat
3 for fish in this section because it's dominated by
4 wetlands and a lot of beaver dams. Certainly Fishtrap
5 Creek is more like a creek and -- and hosts fish
6 downstream here but not at the upper end.

7 We then come to Silent Hills. At
8 around about 95 we're at the western toe of the Silent
9 Hills. And via a couple of switchbacks which we've
10 spent quite a bit of time in improving in terms of
11 alignment. We climb the western slope of the Silent
12 Hills up to what's known as Wolverine Pass.

13 And then after the pass the road heads
14 south along the western side of the valley for a short
15 stretch. And then we skip across the -- the valley.
16 There's a wetland crossing in here which again we
17 don't believe is fish bearing because of beavers dams
18 and wetlands. And then it basically traverses the
19 south side -- sorry, the -- the east side of the
20 valley and the nor -- and the west side of the front
21 range which you can see here.

22 So we're coming down to Grainger Gap.
23 There is a crossing of an outwash channel which is
24 normally dry. And then we go through the Gap itself
25 and cross the Grainger River here at about kilometre

1 121. Grainger River is fish-bearing.

2 And after the -- that crossing we turn
3 south again and -- and traverse down the east side of
4 the front range to the Liard River. And in doing this
5 traverse we're basically following the foothills of
6 the front range. We're crossing several fairly small
7 streams that cover less and discharge into the Liard
8 River.

9 Again, this is -- this is heavily
10 focussed on wetland terrain. An awful lot of beaver -
11 - beaver dams in here. We have not detected any
12 indication of fish presence in any of these crossings
13 and we believe the -- the extensive beaver dams and
14 wetlands make it really impenetrable for fish.

15 So here we come down to the crossing
16 and we join up here with the --

17 THE CHAIRPERSON: Excuse me, Mr.
18 Harpley. Could you please just make reference to the
19 slides for the --

20 MR. DAVID HARPLEY: Okay.

21 THE CHAIRPERSON: -- people online.
22 Thank you.

23 MR. DAVID HARPLEY: So now we're on
24 slide 9 and this is the -- the river crossing. And we
25 join here with an area where there is an old logging

1 road. And at kilometre 170 we join the Nahanni access
2 road and 10 kilometres later we're at the Liard River
3 -- highway, sorry.

4 I've covered access control in previous
5 days, so I'm going to skip over that. A couple of
6 sections we propose to develop initially, we will --
7 intend to utilize the existing winter road, and this
8 one (1) of them. This is in upper Sundog.

9 And the -- the permitted winter road
10 actually is on the north side of the valley and the
11 all-season road will be built on the south side of the
12 valley. And the reason we propose to do this
13 initially is because the -- the all-season alignment
14 will require a number of spanned crossings.

15 There are one (1), two (2), three (3)
16 spanned crossings that are required, which will also
17 require some blasting. So we propose to build those
18 during the three (3) year period of construction and
19 gain access initially via the winter road alignment.

20 The second area where we want to stay
21 on the winter road alignment is between kilometre 90
22 and 95. But now I'm -- actually, I don't have a
23 number on this one (1). Slide 12. And this section
24 is the wetland section where there is very little
25 timber has regrown in this sec -- this section,

1 because its naturally sparse in vegetation, other than
2 kind of grassy and -- and muskeg type vegetation.

3 So recreating the winter road here will
4 be relatively straightforward, whereas the all-season
5 road will need to go through some -- some low hills
6 and there'll be some cutting and filling involved. So
7 we'll stay on the winter road initially.

8 I've covered construction previously.
9 I've covered camps previously, and sewage, and the
10 operating period. So now I want to get into what I'd
11 prefer to spend more time on today.

12 On slide 19 I'm on the -- this is the
13 sub-agenda for the accidents and malfunctions. I have
14 covered some of this before.

15 I -- slide 20 I'm showing the materials
16 that we propose to move on -- on the road, both in and
17 out. One thing in addition that I want to mention,
18 that I haven't mentioned in the first two (2) days is
19 we've -- we've spoken about bringing in diesel --
20 diesel for our gen sets and I have had a few questions
21 from people interested in alternative energy sources.

22 And the information I wanted to provide
23 at this point is that we are actively looking into
24 using LNG to supplement our -- our power generation
25 ability. It -- it may be that we will still need to

1 rely on some diesel. The problem with LNG is storage,
2 and any type of disruption in supply means you have to
3 store. And because we have to cross the river, there
4 will at least be several days or weeks, potentially
5 months, where we can't actually cross the river.

6 So we -- we can't store LNG for that
7 period of time at the mine site. It's just not
8 practical. But we can certainly use LNG when we have
9 access.

10 And so I think -- I mean, there's no
11 guarantee at this point, but the way things appear to
12 be shaping up is that we will rely on LNG more than
13 diesel. How much more remains to be determined, but
14 it does appear that we'll be using a lot less diesel
15 than we planned to initially, which means we won't
16 have to actually transport as much diesel.

17 So I've covered road -- road design
18 issues before, and I'm going to skip over these
19 figures. So now I'm on slide 33, and we're talking
20 about risk assessment, and -- and here is where I want
21 to depart a little bit from the slides and give you a
22 bit of a more in-depth description on the risk
23 assessment that we undertook.

24

25 (BRIEF PAUSE)

1 MR. DAVID HARPLEY: It's Dave Harpley
2 again. So while Brett here is making the screen a
3 little bigger, what I'm doing now is departing
4 somewhat from the presentation, but this material is
5 actually on the record. I'm referring to tables that
6 are in the DAR addendum. I'm looking at Table 7-1
7 initially, and I'm going to move through the tables as
8 I did want to explain how Canadian Zinc conducted its
9 risk assessment.

10 So what we did initially is we've
11 broken down the road into a series of small segments.
12 And you can see here the first one is zero to three
13 point five (3.5), and we've done this throughout the
14 road segment.

15 And -- and based on the description I
16 gave you earlier, we've -- we've basically assigned
17 properties to the road segment. You can see grade.
18 We've got here flat, and then we talk about the
19 alignment in terms of does it have curves, is it a
20 straight section. And we -- we look at potential for
21 landslides, ground movements, avalanches.

22 And ultimately, the point of going
23 through this exercise is coming up with a -- kind of
24 an educated summary of what we believe the likelihood
25 of an accident would be. So we -- we try and assign a

1 ranking to each road segment.

2 You can see that, in this particular
3 case, there is a low ranking for all of these. That's
4 just to simplify the table rather than have low on
5 every section. But as we move through the table, you
6 can see that there are sections that we've ranked as
7 moderate likelihood and -- and also high likelihood of
8 accident potential based on the properties of the
9 road.

10 And this was done before we completed
11 our engineering assessment, so this kind of served as
12 a baseline, if you like. And then we look at how we
13 can improve the road and -- and minimize the risk.

14

15 (BRIEF PAUSE)

16

17 MR. DAVID HARPLEY: So if we can go
18 onto the next table, please, Brett.

19

20 (BRIEF PAUSE)

21

22 MR. DAVID HARPLEY: Yeah. So now
23 we're looking at Table 7-2. Perhaps you can minimize
24 it just a little bit. And this table looks at
25 consequents of accidents.

1 So we're asking ourselves, okay, what
2 happens if on a particular section we actually get an
3 incident. What -- what type of consequence will
4 occur? And we've considered a number of things here.

5 We've considered how proximal the road
6 is to water, basically being a receptor of water
7 itself and fish potentially. And we've also looked at
8 ground type in terms of soil type because we feel that
9 has an important consideration in -- in the event of a
10 spill. You know, will the spill runoff? Will it be
11 absorbed? So that kind of factors in. Where we have
12 a gravel surface, it's more of a concern because
13 obviously gravel is more porous. So we've considered
14 that.

15 And we've also considered containment.
16 Where we're close to the creek or a river, containment
17 is more difficult because the distance is small but
18 there again there are many places on the -- the road
19 alignment where we're distant from a receiving
20 environment, in which case the containment is much
21 easier.

22 So we considered those things to come
23 up with a -- with a ranking of consequents. And
24 that's what you can see on the right-hand side there,
25 and again low -- low, moderate, high. And if we go to

1 the next table...

2

3

(BRIEF PAUSE)

4

5

MR. DAVID HARPLEY: So now we -- we've
6 used the estimation of likelihood of an accident, and
7 then the consequents of an accident, and the product
8 of those two (2) we get to the risk. And you can see
9 here that we've integrated again by road -- road
10 section whether we have -- have -- what kind of
11 likelihood we have and what kind of consequence, and -
12 - and then end up with the risk rating on the right-
13 hand side.

14

And we've got a -- five (5) divisions
15 here, and we -- so at the top end we have high risk
16 and very high risk. And you can see in the table
17 there that we determined that there were a few
18 sections where the risk -- we -- we considered the
19 risk to be high. Seven point four (7.4) -- kilometre
20 7.4 to twelve (12) is one of those, and another one
21 here is twenty-three point five (23.5) to forty point
22 two (40.2). And then the one section we considered to
23 be very high, and that was twelve (12) to seventeen
24 point two (17.2).

25

And these essentially correspond to

1 areas on the western end where the terrain is more
2 mountainous, the grade is steeper, there are bends in
3 the road, there's proximity to creeks. So it's not
4 surprising that that ended up being our focus in terms
5 of risk.

6 Perhaps you can scroll down a little
7 bit, and we could see the rest of the picture. There
8 was a couple of other areas where we felt that the --
9 the risk was high. In fact, one area, and this is
10 ninety-five (95) to one-oh-two (102), and this is the
11 Silent Hills where we're ascending a slope up to the
12 pass. Next table, please.

13

14 (BRIEF PAUSE)

15

16 MR. DAVID HARPLEY: So having done the
17 risk assessment, we felt it was appropriate to take an
18 additional step and consider the actual severity and
19 duration of a spill if, indeed, there was a spill.

20 So in this particular case we're
21 considering -- here is our risk rating, and we're
22 looking at the particular substance and considering
23 how severe that particular substance might be in a --
24 in a spill situation. So obviously diesel with it
25 being a liquid is considered a higher severity, and so

1 that translates into a moderate duration of potential
2 impact. And then for the section, we're also showing
3 a couple of other things in terms of ease of access,
4 and the actual potential for injury of -- of driver in
5 an accident situation.

6 But focussing on the environmental
7 side, we considered what we thought were the four (4)
8 main environmental -- items of environmental
9 significance here, and sulphuric acid was one (1) of
10 those, as well. And concentrate, we actually didn't
11 rank terribly severe because the concentrate is
12 actually not that leachable, and with it being a solid
13 it can readily be recovered. It's not like a liquid.
14 So it did end up in -- in the severity assessment that
15 we were finding a higher consideration of diesel than
16 anything else as a -- a prime candidate for kind of
17 mitigation and -- and management.

18 Next table.

19

20 (BRIEF PAUSE)

21

22 MR. DAVID HARPLEY: So using all of
23 that information, we -- we develop this effects
24 matrix. This is now table 7-5 from the DAR addendum.
25 And you can see on the left-hand side here, we're

1 looking again at the different materials that we may
2 be transporting and what would happen in a spill
3 situation. And we're specifically considering the
4 value components of water and fish and -- and going
5 through a significance and uncertainty, basically an
6 effects assessment here, timing, magnitude, is it
7 reversible, because some of the effects are short-term
8 and some are more longer term, so reversibility is a
9 re -- an important consideration. And we've just
10 included the previous likelihood assessment of an
11 accident on the right-hand side here.

12 So the -- the purpose of explaining all
13 this is to show you the process that we went to to --
14 to do our risk assessment and to come up with the
15 areas of the road and the particular supplies that we
16 want to move on the road, how we should set up our
17 mitigation approach, when we -- where we should focus
18 our energy in terms of road design and improvement,
19 and -- and how to potentially focus our approach to
20 moving the materials, such as for diesel, going to the
21 original -- original before LNG that is, plan to move
22 diesel in the 5 -- 5,100 litre tanks on each trailer;
23 in other words, a small tank size.

24 So if we can go back to the original
25 presentation, please. Thanks. Yeah.

1 (BRIEF PAUSE)

2

3 MR. DAVID HARPLEY: I'm now on slide
4 38. Another particular result of the risk assessment
5 is spill contingency. We did use our risk assessment
6 specifically to focus our efforts regarding spill
7 contingency. And earlier in the week, I mentioned
8 that we plan to have spill kits at strategic locations
9 on the road.

10 One (1) item that we're going to con --
11 we actually had from the winter road assessment, but
12 we're going to continue here for the all-season road,
13 is that we propose to have comprehensive spill kits in
14 trailers stationed on the road, the idea being that,
15 instead of having to bring supplies out to a location
16 in addition to personnel and also understanding that
17 some personnel may already be at the spill location,
18 such as other drivers or maintenance crews or
19 monitors, the important thing is then they need
20 material to actually mount a response.

21 So rather than have to go to the mine
22 or go somewhere else to get that material, we plan to
23 have equipped trailers at specific locations along the
24 road so then it's relatively simple to come and hook
25 up the trailer and tow it to the specific spill

1 location and -- and mount the response.

2 In addition to that, I mentioned
3 earlier that -- in previous days that is, that there
4 are some sections of the road that may be difficult in
5 terms of getting to a spill location if there's an
6 off-road incident, and given that the valley bottom in
7 -- in some cases is below the road, and this is
8 typical of some of the sections going through the
9 mountains.

10 Hence, we've focussed on control points
11 at certain key locations on those water courses that I
12 mentioned, and these would be locations where again,
13 we would station spill response equipment.

14 So if we're not able to get to the
15 incident location using a vehicle, then at least it
16 would accessible on foot. And with the material
17 already be -- already present at the location,
18 personnel would be able to mount the spill response.

19 So I'm going to backtrack a little bit
20 in the presentation here, and now I'm on -- now on
21 slide 36. And I do want to comment on the -- the
22 assessment that Oboni Riskope conducted.

23

24 (BRIEF PAUSE)

25

1 MR. DAVID HARPLEY: So in -- in
2 reference Oboni's presentation that is coming, one (1)
3 thing I can note is that there's -- there's no mention
4 in their presen -- their presentation, I'm assuming,
5 is meant to be a summary of their assessment and their
6 conclusions.

7 But what I don't see in their
8 presentation is the conclusion that is in their
9 report, which says that in their estimation, just like
10 ours, an all-season road is -- is inherently safer
11 than a winter-only road. So that appears to be
12 missing from their presentation.

13 The problem I -- I -- we have with
14 Oboni's study, and even after the Review comments is
15 frankly, we still don't understand how they came up
16 with their statistics and -- and their projections.
17 We did ask about the -- the -- what they call the ORE
18 model, the O-R-E model. And they provided an example
19 which we looked at, but we're still at a bit of a loss
20 to understand exactly the process that they went
21 through to come up with their results.

22 In -- in other words, it's not
23 transparent to us. I'm not trying to imply that's
24 wrong, I just -- I just don't understand how they
25 arrived at their numbers and unable to independently

1 verify them.

2 A problem that -- a significant problem
3 we have with the assessment comes to do with
4 excursions. Or they -- they call them "excursions,"
5 because they're basically off-road accidents. And Obo
6 -- Oboni has estimated the incidence of excursions to
7 be approximately an order of magnitude higher than
8 statistics that are available from BC Ministry of
9 Forest resource roads.

10 And there is some disagreement as -- as
11 opposed -- regarding relevance of those MOF
12 statistics. And Oboni noted, for example, that they
13 believe that the statistic -- statistics only relate
14 to accident situations or -- or injury situations.

15 That's not correct. They -- those
16 statistics actually relate to all types of accidents,
17 including those where there was injury. And we come
18 back to those statistics, because it's a large
19 historical database over multiple years, and all types
20 of situations, and give us, we think, a -- a more
21 accurate yardstick of the accident intensity on
22 resource-type roads.

23 So in addition to that, we -- we
24 believe those statistics are very conservative. And
25 the reason for that is we're considering primarily

1 forest roads, where speeds are considerably higher
2 than 30 kilometres an hour. They're probably in the
3 range of 80 to 90 kilometres an hour.

4 You have primarily logging trucks which
5 are considerably more top heavy than the concentrate
6 trucks will be. And in addition to that, they're --
7 they're roads that are going to be, or are utilized by
8 the public traffic to a far greater extent than our
9 road will be.

10 The other consideration to bear in mind
11 is that typical forestry resource roads aren't
12 controlled in terms of who's on it and what activities
13 are going on. And -- and there's not a lot of
14 oversight. It's a completely different situation from
15 what we're proposing on -- on our resource road.

16 So we -- we have a -- a reasonable
17 amount of confidence that the MOF road statistics are
18 very conservative in terms of an estimator of accident
19 intensity for our road. And, as explained, we would
20 expect that our accident intensity would be
21 considerably less than that.

22

23 (BRIEF PAUSE)

24

25 MR. DAVID HARPLEY: We did mention in

1 -- in our review comments on the Oboni Report that we
2 felt that Oboni was somewhat at a disadvantage that
3 they had not visited the site themselves. We were a
4 little surprised in their presentation that they
5 basically say that there's no need for them to visit
6 the site.

7 And I have to say, as a former
8 consultant of some twenty (20), thirty (30) years,
9 typically whenever one does a project such as this,
10 you always like to get out into the field as early as
11 you can and -- and basically get a feel for the lay of
12 the land and the conditions.

13 So I quite -- don't quite understand
14 why somebody would basically say that it's not
15 important to -- to see the land firsthand to get a
16 better appreciation.

17

18 (BRIEF PAUSE)

19

20 MR. DAVID HARPLEY: I think I'll stop
21 there and move on.

22

23 (BRIEF PAUSE)

24

25 MR. DAVID HARPLEY: We have talked

1 about -- excuse me -- permafrost in previous days. I
2 don't think I need to repeat this. I will respond to
3 one (1) question, however, that came yesterday
4 regarding the corduroy. This is the -- where you have
5 logs in the road, which is the overland construction
6 approach.

7 And the comment was that logs can rot
8 out, and then you have problems with the road surface.
9 I have consulted with Ernie Krogt here, our road
10 engineer, and his advice is that that is certainly a
11 problem if the road isn't sealed properly.

12 The -- essentially, what you need to do
13 is you need to lay the logs, and you need to
14 completely bury them and seal them with a sub-grade.
15 And then if you do that, they freeze in and they don't
16 rot.

17 And his other advice is that there are
18 many resource roads in BC that are built this way and
19 have not had any significant issues. So it really
20 comes down to the care and -- and attention during the
21 construction process.

22 I'm sure there'll be questions on
23 permafrost, and we can deal with those as they come,
24 so I won't dwell on these maps -- these slides.

25 I'm now on slide 41. This is the drain

1 section. I -- again, I have mentioned these issues in
2 past days. I -- I do want to point out the -- the
3 rockfall portion, though, and -- and perhaps give you
4 some anecdotal input on rockfall.

5 We've traversed sections of the road
6 quite a bit in our studies, and the section from the
7 mine to about kilometre 234 is -- is accessible
8 currently by four (4) wheel drive or quad. So I
9 personally have been up that section quite a few
10 times, and there certainly is a section at about
11 kilometre 15 1/2 to 16 1/2 where you see quite a bit
12 of rock material on the road on a seasonal basis.

13 I would say the majority of the
14 material is quite small. Some of them is as large as
15 perhaps 30 centimetres in diameter, but the one (1)
16 thing I wanted to point out is that it's our
17 impression that typically this rockfall is occurring
18 in springtime after thaw. You can imagine you get
19 freeze-thaw and it loosens the material, and then you
20 get some wastage.

21 It's not the only time, but I think
22 it's probably the primary time. And springtime is of
23 course when we don't expect to be operating on the
24 road during this particular period, because it'll be
25 the period when the ice bridge is gone and we're

1 waiting for the ice to move off. And also there would
2 be load restrictions on the Liard Highway, so we
3 actually wouldn't be operating on the road.

4 So I'll stop there. Thank you.

5 THE CHAIRPERSON: Okay. Thank you,
6 Mr. Harpley. I would like to call a ten (10) minute
7 break before we go into questions, because it'll be
8 awhile with the questions. So if we could have a ten
9 (10) minute break, please. And if the people online
10 could please stay online. We have people online.

11

12 --- Upon recessing at 10:05 a.m.

13 --- Upon resuming at 10:27 a.m.

14

15 THE CHAIRPERSON: We are ready to
16 start the hearing again.

17

18 (BRIEF PAUSE)

19

20 THE CHAIRPERSON: For information, I
21 would just like to ask our legal counsel to make a
22 clarification or a statement on the tables that were
23 presented. Mr. Donihee...?

24 MR. JOHN DONIHEE: Thank you, Madam
25 Chair. It's John Donihee, Board counsel.

1 Mr. Harpley made reference to two (2)
2 tables in his presentation and explanation of their
3 risk management analysis. Those tables, as I
4 understand it, were a part of the additional materials
5 filed after -- as an addendum to the DAR aft -- after
6 the conformity analysis. And so they've been on the
7 record for a while, but they -- they were not part of
8 the -- the hearing presentation.

9 So I think what we've arranged, and --
10 and I'll ask Mr. Harpley to confirm this, is that if
11 there are questions from any of the parties about the
12 contents of either of those two (2) tables, the
13 parties can and should convey those questions in
14 writing to Canadian Zinc. And to the extent that
15 there are any questions, then we're asking Canadian
16 Zinc to respond to them at the -- on the deadline for
17 undertakings from the hearing.

18 And if Canadian Zinc is amenable to
19 that, then I'd note that as Undertaking number 1 from
20 the hearing, and it would be simply for Canadian Zinc
21 to respond to any questions about Table 7.1 and 7.2
22 from their hearing presentation today by the
23 undertaking's deadline.

24

25 --- UNDERTAKING NO. 1: Canadian Zinc to respond

1 to any questions about
2 Table 7.1 and 7.2 from
3 their hearing presentation
4 by the undertaking's
5 deadline

6
7 MR. JOHN DONIHEE: And -- and for the
8 sake of the parties, those -- those tables have been
9 placed up on the registry while -- while this was
10 going on.

11 So, Mr. Harpley, is that -- I guess
12 we're asking you to make that undertaking, sir.

13 THE CHAIRPERSON: Mr. Harpley...?

14 MR. DAVID HARPLEY: It's Dave Harpley.

15 In principle, I don't think we have a
16 problem with it. I think we want to bear in mind that
17 those -- as you say, those tables have been on the
18 registry for some time. There's been plenty of
19 opportunity for parties to comment on that material.

20 So in the context of short amount of
21 time during the hearing and the questions, I don't
22 think we have a problem, but if it goes kind of beyond
23 that, like reopening the process in terms of
24 information and so on, then we -- we need to draw the
25 line somewhere. But, you know, whatever is

1 reasonable, we're okay with.

2 THE CHAIRPERSON: Mr. Donihee...?

3 MR. JOHN DONIHEE: Thank you, Madam

4 Chair. John Donihee again. Sir, the only additional

5 process that's -- that's being proposed is that, if

6 there are questions about the tables, then those

7 questions would come to Canadian Zinc in writing

8 within a week. And then if Canadian Zinc will respond

9 to them, you would respond by the undertakings

10 deadline so it would have no effect on the Board's

11 decision making process or the hearing process.

12 So, again, I -- I'm just not sure how

13 to respond to an answer that's given in principle. I

14 guess the question is whether Canadian Zinc will

15 undertake to do that on the basis of the process that

16 I've just described to you.

17 THE CHAIRPERSON: Mr. Harpley...?

18 MR. DAVID HARPLEY: It's Dave Harpley.

19 Yeah, that's -- that's fine.

20

21 QUESTION PERIOD

22 THE CHAIRPERSON: Okay, after the

23 presentations we have a list of parties, and the

24 parties are in no particular order, they're in

25 alphabetical order. So the first party that is -- I'm

1 going to call upon to see if they have any questions
2 is the Canadian Parks and Wilderness Society.
3 Questions?

4

5 (BRIEF PAUSE)

6

7 THE CHAIRPERSON: Okay, we don't have
8 anyone from CPAWS. Questions from Dehcho First
9 Nations? And if you have questions, would you be so
10 kind to come to the table and to use the mic provided
11 at the table, at the front of the table? Right here
12 in front. Come to the table.

13

14 (BRIEF PAUSE)

15

16 THE CHAIRPERSON: If it's more
17 comfortable and you have mics right there, then you
18 would be able to use them. Not everyone has mics, I
19 think, further back.

20 MS. CARRIE BRENEMAN: Yeah. Well,
21 it's Carrie Breneman, Dehcho First Nations. My
22 question for Canadian Zinc is what percentage of the
23 road alignment has so far been detailed, like, in the
24 phase of detailed design?

25 THE CHAIRPERSON: Mr. Harpley...?

1 MR. DAVID HARPLEY: It's Dave Harpley.
2 Right now, none of the road has been done in -- in a
3 detailed design. We're at the preliminary design
4 stage. And detailed design logically follows approval
5 and precedes construction.

6 MS. CARRIE BRENEMAN: In terms of
7 risks along the road, both in your kind of
8 presentation, and then in the DAR you list risks from,
9 like, landslide hazards or avalanches. And there's
10 some mitigation measures that are kind of proposed
11 within the DAR in a -- in a broad sense, but I'm
12 wondering how you're going to integrate that into the
13 detailed design phase of the road?

14 MR. DAVID HARPLEY: It's Dave Harpley.
15 During the detailed design phase we will also do
16 followup investigations which will include
17 geotechnical as far as slopes, permafrost, landslides,
18 and that information will feed into the detail design
19 process, and we'll make adjustments as necessary.

20 MS. CARRIE BRENEMAN: My understanding
21 from your presentation today is that the purpose of
22 your risk assessment was kind of to investigate where
23 you felt like were high areas of risk along the road,
24 and then to address those mitigation measures, which
25 makes sense to me.

1 But in terms of kind of understanding
2 what the risks are once those mitigation measures have
3 been applied, how are you going to address that in
4 later permitting? Like, what I'm trying to get at is,
5 you know, right now, we kind of have an understanding
6 of where the road goes. We understand that there's
7 avalanche hazard. We understand that there's risks of
8 landslide. We understand that there's some steep
9 slopes. And we understand that that's -- that there's
10 some risk involved in all of those.

11 And generally we understand that those
12 things are going to be mitigated at a later date. But
13 how do we go from those mitigations to understanding
14 what the risks are to drivers along that road?

15 MR. DAVID HARPLEY: It's Dave Harpley.
16 This is an ongoing process. And just like with the
17 mine, the road actually goes through an optimization
18 process as well during the detailed design process.
19 So as we get the information from further
20 investigation then we'll reevaluate the whole road
21 alignment in terms of design and requirements for
22 mitigation, such as:

23 Is there -- is there a need for a
24 parameter barrier? Is there a need to do more
25 straightening of a curve? So it's -- it's not that

1 the process is going to stop. In the presentations
2 that I made a couple of -- over the last few days I
3 did end up on this particular slide, 37, in our
4 presentation for today.

5 And this is one (1) of the steps that
6 we've been through, so we've -- we've basically
7 reviewed the results of our risk assessment and also
8 the input from Oboni Riskope's assessment. And we've
9 come up with some additional mitigation steps that we
10 think are appropriate to integrate into the design.

11 Now, that's not the end of the process.
12 As I say, it'll continue through detailed design, but
13 we will get to a point where I think you can only
14 mitigate so far. Unfortunately, everything we do in
15 life, wherever we go, presents some form of risk.

16 So the objective is to manage the risk.
17 And the additional management situations as far as
18 road operations would come into play as well. I mean,
19 as well as actual physical mitigations, there are
20 potential procedural mitigations, such as, for
21 example, if there is a specific rock fall zone we may
22 have a -- a specification and signage that says, No
23 stopping from kilometre such and such to such and
24 such.

25 So there -- there are a number of ways

1 to manage the risk and we will look at all of those
2 different ways.

3 THE CHAIRPERSON: Just a reminder to
4 the speakers to please state your name every time you
5 speak on the mic.

6

7 (BRIEF PAUSE)

8

9 MS. CARRIE BRENNEMAN: Carrie Breneman,
10 Dehcho First Nations. So my understanding of what you
11 said is during the detailed design phase you're going
12 to consider, you know, like landslide risks and
13 avalanches. And I do understand that there's -- like
14 you said, you cannot mitigate every risk.

15 But there are some risks that you can
16 effectively really mitigate, like avalanches, for
17 example. Like I was looking up online that the last
18 person killed on a road due to avalanches was like
19 1976.

20 So, I mean, there are some risks that
21 can really effectively be mitigated. And I think for
22 us, you know, the devil's in the details when it comes
23 to looking at risk and road safety. And we're really
24 interested in following up with Canadian Zinc through
25 this detailed design phase and having a better

1 understanding of how these risks, like avalanches,
2 landslides, slopes, will be addressed during this
3 detailed design phase and during permitting.

4 And I think for us we just kind of need
5 a better understanding of how we can intersect in that
6 part of the process to make sure that the road is as
7 safe as possible, which from your presentation
8 yesterday is also -- you know, I think you said
9 yesterday in your presentation, David, that you also
10 want the road to be as safe as possible.

11 So I think for us, I mean, all that we
12 want to ensure is that drivers, when they're driving
13 that road, that they're not going to get, like smucked
14 by an avalanche, or have a major rockslide come in.
15 And as you know, this terrain is very unique to the
16 NWT. We don't really have a lot of roads that have
17 avalanche risk, or landslide risk, or go through this
18 type of mountainous terrain. And at the end of the
19 day for us we just want to make sure that drivers who
20 are driving that road are safe.

21 MR. DAVID HARPLEY: It's Dave Harpley.
22 Yes, I generally concur with most of what you just
23 said. Just some perhaps more information and -- and
24 qualifiers. This terrain may not be typical of NWT,
25 but I think it is reasonably typical of Northern BC,

1 which is largely what we've based our approach and our
2 engineering on. So I think at least we're -- we're
3 adopting the appropriate standards and approaches
4 here.

5 In terms of process to address these
6 issues, in my experience, typically what happens is,
7 if there is a positive EA decision and the project
8 then goes to permitting, the discussion revolves
9 around the various conditions that might be in a
10 suitable permit.

11 And those conditions usually relate in
12 a lot of cases to management plans, various types of
13 plans, such as sediment and erosion control plan. And
14 I can imagine that there would be a plan that would
15 address -- I can think of road operations plan is --
16 is one (1) plan that we have in draft currently.

17 So considerations in term -- in terms
18 of management of risks and issues can be built in one
19 or more of those type plans. And typically what will
20 then happen, again as a condition of a permit, is that
21 those plans would be subject to review and -- and
22 approval before construction actually occurs.

23 And that would be the juncture upon
24 which various parties can be involved. There can be
25 an exchange of drafts, there can be comments and

1 adjustments made, and -- and I think that would be the
2 appropriate time to give the assurance that all of
3 these particular issues have been taken care of.

4 MS. CARRIE BRENNEMAN: Carrie Breneman,
5 with Dehcho First Nations. And in terms of looking at
6 some of these issues around risk, I mean, I understand
7 that you revised your risk assessment and that you did
8 a risk assessment to look at what risks were along the
9 road and what mitigations you should apply.

10 But in terms of looking at how
11 effective those mitigations are, do you plan on kind
12 of doing an updated risk assessment after you've, you
13 know, looked at the road, said, Here's our avalanche
14 paths, this is what our mitigations are for that,
15 here's landslides, this where we're going to put
16 gabions?

17 How -- how do we get to the point where
18 can kind of feel comfortable with how you're planning
19 on mitigation -- mitigating some of those factors?
20 And also, sorry. So that was question number 1.

21 And also, as a caveat, you said that
22 you feel like some of the conditions around the road
23 are very similar to northern BC. And I actually
24 disagree with that a little bit because, you know, the
25 temperatures in the NWT are colder.

1 It's a different climate. It's a
2 continental climate compared to BC. It's dark for
3 large portions of the year. The issues with
4 permafrost I think may be more significant than parts
5 of BC.

6 So I think the risks are slightly
7 different -- not to say that that experience with
8 avalanches, or landslides, or -- or issues in northern
9 BC can't be addre -- can't -- you know, examples from
10 other places can't be addressed. But I do think that
11 there are aspects of this road that are kind of unique
12 to a northern BC example.

13

14 (BRIEF PAUSE)

15

16 MR. DAVID HARPLEY: It's Dave Harpley.
17 So the first part of the question regarding updating
18 the risk assessment, I -- I think you can assume that,
19 as part of the process of further investigation of
20 risk issues, hazard issues, that would be part of the
21 detailed design process.

22 So we will incorporate kind of an
23 update of the risk assessment during that process as
24 well and modify the design as appropriate.

25 Regarding the second part of the

1 question or comment regarding the applicability of
2 conditions in BC to our particular area, I'll defer to
3 our engineer, Ernie, here, to respond to that. State
4 your name. State your name.

5 MR. ERNIE KRAGT: Ernie Kragt, with
6 Allnorth. So in -- in regards to the comment made
7 about comparison of operations in BC to -- to the
8 Northwest Territories, I -- I think there's more to
9 compare in -- in -- that are similar than -- than
10 there's differences. Yes, there's -- there is some --
11 some additional climate, cold climates up here, but we
12 in BC have operated in some very severe mountainous
13 conditions, in particular along the coast, where
14 you're subjected to heavy, intense snowfall, coastal
15 conditions, probably much -- much more -- much greater
16 snowfall than what -- what you encounter up here.

17 So I think -- I think in conclusion,
18 there -- there is more to com -- more similar
19 comparison than -- than there is differences.

20 MS. CARRIE BRENEMAN: Carrie Breneman,
21 Dehcho First Nations.

22 David, you said that you're going to do
23 an -- an updated risk assessment during the
24 optimization or detailed design phase.

25 Could you commit to that for the

1 commitments list, that the risk assessment will be
2 updated following detailed design?

3 MR. DAVID HARPLEY: It's Dave Harpley.

4 I don't think we have a problem
5 committing to doing it as part of detailed design.
6 That -- that's the logical use of the risk assessment,
7 to actually complete the design.

8

9 --- COMMITMENT NO. 1: Canadian Zinc will provide
10 an updated risk assessment
11 as part of detailed design

12

13 MS. CARRIE BRENEMAN: Carrie Breneman,
14 Dehcho First Nations.

15 That makes sense to me as long as
16 you're using the risk assessment and -- how do I put
17 this in the right away -- as long -- as long as the
18 intent of the risk assessment is part of the detailed
19 design phase, and you're considering the avalanche
20 miti -- like, actually what you're proposed for
21 avalanche mitigation and landslide mitigation, like,
22 the actual gabions and the actual detailed design.

23 I don't necessarily -- I don't think we
24 necessarily need to go through another risk assessment
25 to detail, like, where the hazard actually is, but

1 more the second part of what the risk would look like
2 after all those mitigation measures are proposed.

3 MR. DAVID HARPLEY: Yeah, I think we
4 generally concur with that. It -- it really comes
5 down to the detailed design and the completion of the
6 management plans that I referred to earlier.

7 MS. DAHTI TSETSO: Hi. Dahti Tsetso,
8 Dehcho First Nations.

9 If you could, please, go to --

10 THE CHAIRPERSON: Excuse -- excuse me,
11 but we're having technical difficulties again. I
12 think we've lost some people online, so if we could
13 just wait. Sorry, Dahti.

14

15 (BRIEF PAUSE)

16

17 THE CHAIRPERSON: Okay. The problem
18 seems fixed. Dehcho First Nations, questions?

19 MS. DAHTI TSETSO: Yeah, thank you.
20 Again for the record it's Dahti Tsetso, with Dehcho
21 First Nations.

22 If you could please refer to slide 34
23 in your presentation. Yeah. You list out
24 consequences as being cargo properties in effect,
25 fish-bearing streams, and cars.

1 And my question is a number of other
2 consequences come to mind, effects on wildlife,
3 vegetation, human safety, like emergency responses,
4 and also I'm not -- there's no mention of wildfire in
5 -- in these considerations either, and we're --
6 increasingly experience wildfire in our region.

7 And I'm just wondering if you could
8 please speak to those -- to those considerations, and
9 why they're not listed in the summary here.

10 MR. DAVID HARPLEY: It's Dave Harp --
11 it's Dave Harpley.

12 They're -- they're not in the summary
13 simply because it's a summary. It doesn't mean that
14 they weren't considered. They are -- they are
15 addressed in the DAR and DAR -- DAR addendum. We did
16 consider the possibility of wildfires.

17 And you're correct that they do occur
18 with some regularity in the summer period, so we will
19 need the appropriate operating requirements in terms
20 of notifications, and potentially stopping hauling at
21 times when there's a fire proximal to the road. And -
22 - and our crews will be trained not only in spill
23 response, but also in how to respond to a fire
24 situation in terms of notification and -- and, you
25 know, relevant procedures. In the risk assessment

1 that I showed you earlier in those tables there --
2 there was inclusion of vegetation and soil. In -- in
3 the severity assessment we didn't include wildlife
4 specifically in that assessment.

5 We -- we kind of felt that wildlife
6 were not likely to be a receptor, or at least that
7 they would be a secondary receptor after water and
8 vegetation, which we did address so. It's not that we
9 didn't cover it in our presentation, it just didn't
10 make it to the summary.

11

12 (BRIEF PAUSE)

13

14 MS. CARRIE BRENNEMAN: Carrie Breneman,
15 Dehcho First Nations. You mentioned in your
16 presentation that the road speed will be an average of
17 30 kilometres an hour, but what's -- what's the
18 maximum road speed that you're planning for the all-
19 season road?

20 MR. ERNIE KRAGT: The road -- oh,
21 Ernie Kragt, with Allnorth. The road design is -- is
22 designed for a 40 kilometre an hour speed, so that
23 would be considered the maximum for a loaded truck.
24 It's expected in some of the easier sections that --
25 that we could see speeds of 50 kilometres for empty

1 trucks.

2 Just -- just so everybody has the
3 background, those -- those designs come from the
4 specifications outlined in the BC Ministry of Forests
5 transportat -- engineering manual, and -- and they're
6 considered safe operable speeds for -- for loaded
7 logging trucks under normal conditions. So there's
8 always, subject to -- to climate conditions and what
9 have you, that there's some adjustments, but -- but
10 that is a safe operating speed for -- for a loaded
11 logging truck.

12 So, presumably, an empty truck can --
13 can travel at -- at some higher speeds, which -- which
14 is reflected in -- in 50 kilometre an hour speeds in
15 some of the easier sections.

16

17 (BRIEF PAUSE)

18

19 MS. CARRIE BRENEMAN: Carrie Breneman,
20 Dehcho First Nations. We're -- we're done with our
21 questioning.

22 THE CHAIRPERSON: Okay, thank you.
23 Moving on. Questions from Environment Canada?

24 MR. BRADLEY SUMMERFIELD: Thanks,
25 Madam Chair. It's Bradley Summerfield, with

1 Environment and Climate Change Canada. We have no
2 questions.

3 THE CHAIRPERSON: Questions from
4 Fisheries and Oceans Canada?

5 MS. VERONIQUE D'AMOURS GAUTHIER:
6 Thank you, Madam Chair. Veronique D'Amours Gauthier,
7 with Fisheries and Oceans Canada. We don't have any
8 question at the moment. Thank you.

9 THE CHAIRPERSON: Questions from the
10 Government of the Northwest Territories?

11 MS. LORRAINE SEALE: Lorraine Seale,
12 with GNWT. We do have three (3) questions, first on
13 spill response. Given the average speed of 30
14 kilometres an hour, we're looking for what the
15 expected range, maximum and minimum, of spill response
16 times would be?

17 MR. DAVID HARPLEY: It's Dave Harpley.
18 I believe we had an In -- Information Request on this
19 particular item, and it was detailed. In terms of
20 spill response in different locations of the road, I
21 don't have the numbers in my head at the minute, but
22 I'm pretty sure it's on the record.

23 MS. LORRAINE SEALE: Lorraine Seale,
24 GNWT. Thank you. Second question: There's been a
25 fair bit of -- and this is regarding access

1 restrictions at the Liard River cro -- crossing which
2 Canadian Zinc did discuss in its presentations the
3 previous two (2) days but not today.

4 First, can Canadian Zinc commit to
5 routing the Liard River winter crossing completely
6 through the territorial land surface lease on the
7 north shore of the Liard River?

8

9 (BRIEF PAUSE)

10

11 MR. DAVID HARPLEY: It's Dave Harpley.
12 We're maybe going to need to explore that question a
13 little bit. The way -- the route that we have for the
14 winter crossing currently, would not stay wholly
15 within the lease area.

16 However, the entry to the crossing and
17 the exit from the crossing would cross the lease areas
18 and use the same ramps as the traffic in summer would.
19 It's just that the crossing itself -- just like the
20 barge crossing, in fact, between the leases, would be
21 on the river and not part of the leases.

22 MS. LORRAINE SEALE: Lorraine Seale,
23 GNWT. Thank you. We'd ask that be provided as a
24 written commitment, probably by the undertaking
25 deadline.

1 MR. DAVID HARPLEY: Dave Harpley.

2 That's fine.

3

4 --- COMMITMENT NO. 2: For Canadian Zinc commit
5 to routing the Liard River
6 winter crossing completely
7 through the territorial
8 land surface lease on the
9 north shore of the Liard
10 River.

11

12 (BRIEF PAUSE)

13

14 MS. LORRAINE SEALE: Lorraine Seale,
15 GNWT. Third question is along the same lines. And
16 just for the information of the Board and all parties,
17 we're looking for an explicit written commitment
18 concerning whether Canadian Zinc will exercise its
19 right to access control on the surface leases.

20 There's certainly been a lot of
21 discussion that that right exists and we just want to
22 be crystal clear about what Canadian Zinc is proposing
23 to do.

24 MR. DAVID HARPLEY: It's Dave Harpley.

25 Yes, we will exercise that right. In fact, we propose

1 -- or have proposed, and I think they're agreeable,
2 that the Nahanni Butte Dene Band will be employed by
3 Canadian Zinc to basically address that requirement on
4 our behalf.

5

6 --- COMMITMENT NO. 3: GNWT looking for an
7 explicit written
8 commitment concerning
9 whether Canadian Zinc will
10 exercise its right to
11 access control on the
12 surface leases.

13

14 THE CHAIRPERSON: We have a comment
15 from our legal counsel. Mr. Donihee...?

16 MR. JOHN DONIHEE: Thank you, Madam
17 Chair. Just to be clear then, the -- the commitments
18 once made in the -- in the way that Mr. Harpley just
19 has are -- are recorded and we -- we draw them from
20 the transcript as we go. We're -- we're keeping a
21 list. And so although Ms. Seale asked for this
22 commitment to happen by the time of the undertakings
23 being filed, it's -- it's actually -- it's already
24 recorded, it's done.

25 So there -- there is an undertaking

1 there and I guess for the sake of the parties to the
2 extent that they can get Canadian Zinc to agree to
3 commitments. We just keep the list as we go and the
4 undertakings are something separate. Thank you,
5 Ma'am.

6 THE CHAIRPERSON: Okay. Thank you.

7 MS. LORRAINE SEALE: Lorraine Seale,
8 GNWT. Thank you for that clarification from Board
9 counsel. I think what we're wanting to be clear is
10 that commitments are available to parties in a easily
11 reviewable manner. So if they're taken from the
12 transcripts and put into the commitments table, that
13 would meet our requirements.

14 No further questions at this time.

15 THE CHAIRPERSON: Questions from
16 Indigenous and Northern Affairs Canada? Sorry, before
17 we start, comments from legal counsel, please.

18 MR. JOHN DONIHEE: Thank you, Madam
19 Chair. I'm sorry to interrupt.

20 Just to clarify for the party's
21 purposes the list of additional commitments that
22 resolve from the hearings will be posted on the
23 registry before the time when the parties have to
24 provide final argument, so that they can take them
25 into consideration in their arguments.

1 THE CHAIRPERSON: Okay. Thank you.
2 Questions from Indigenous and Northern Affairs Canada?

3 MR. MIKE ROACH: Mike Roach, for INAC
4 and we have no questions at this time. Thank you.

5 THE CHAIRPERSON: Questions from
6 Liidlíi Kue First Nation...?

7

8 (BRIEF PAUSE)

9

10 MR. DEAN HOLMAN: My name is Dean
11 Holman. I'm the lands and resource manager for
12 Liidlíi Kue. My questions are -- are on impacts to
13 safety, obviously. Liidlíi Kue First Nation supports
14 the concerns of DFN on road width -- and safety
15 issues, and information upgrades to the detailed
16 design for areas that do not have that information
17 available.

18 We are concerned on extreme traversing
19 of terrain along the right-of-way including the -- the
20 passes, the bridge with traffic and negotiation of
21 approaches, and signage during winter weather
22 conditions. We're -- we support the concerns on
23 avalanche potential, the risk associated with that,
24 and the mitigation concerns that -- that the parties
25 have, including DFN.

1 My question -- one (1) of the questions
2 I have here is: What is CZN -- or Canadian Zinc's
3 acceptable level of risk for the Funeral Pass of Creek
4 Pass as well as Sundog and Tetcela?

5

6 (BRIEF PAUSE)

7

8 MR. DAVID HARPLEY: It's Dave Harpley.
9 I'm not sure how you define "acceptable". That's
10 rather subjective. I guess we approach it from the
11 perspective of -- of reducing the risk as low as
12 possible in the design and providing for response and
13 mitigation in the event that there is an accident.

14 As far as Funeral Creek, and Sundog
15 Creek, and Tetcela is concerned, they are some of the
16 more important waterways that the road will cross, and
17 there are some mountainous sections, grade sections
18 proximal to those creeks. But there are also several
19 very long, relatively straight, no-grade, simple
20 sections proximal to those creeks where you wouldn't
21 anticipate a high risk of an accident.

22 So part of the risk assessment approach
23 is to define the -- the troubling areas or the areas
24 of higher risk and try and minimize the resulting risk
25 and -- and provide for a response, should -- should

1 there be an accident.

2 MR. DEAN HOLMAN: Thank you, Madam
3 Chair. Can CZN explain how the -- the -- this leads
4 into the next question, actually. And thanks, David.

5 Can CZN explain how mitigation efforts
6 will reduce or eliminate moderate to high to very
7 high-risk areas?

8 MR. DAVID HARPLEY: It's Dave Harpley.
9 The first instance is -- I mentioned over the last few
10 days and -- and again today to some extent is we're
11 minimizing the size of the materials that we're
12 actually transporting, at -- at least in terms of
13 supplies.

14 And we're also ensuring that what we do
15 transport is well-contained and is tied down properly,
16 anchored properly. So even if we do get an accident,
17 we're trying to minimize the -- the loss of any
18 material.

19 What I've also described is that when -
20 - when you then look at the road that the vehicles are
21 actually going to transport on, you want to design the
22 road as best you can, make -- make it as safe as you
23 can. So those are the -- the -- you know, the first
24 steps that you go on.

25 Then once you've exhausted that to a

1 reasonable extent, then you look at the mitigations.
2 And as far as mitigation, we've -- we've focussed on
3 spill contingency, and spill response, and the
4 availability of material, the time of response, the
5 ease of response to basically respond as -- as best as
6 we can if there is an incident.

7 MR. DEAN HOLMAN: Thank you, Madam
8 Chair. Dean Holman here again.

9 Has CZN considered the compounding of
10 consequences and their associated perceived risks?
11 And how does this affect the overall risk levels?

12 MR. DAVID HARPLEY: It's Dave Harpley.
13 I -- I think I'd like for you to describe what you
14 mean by "compounding of consequences."

15 MR. DEAN HOLMAN: Yes. Dean Holman
16 here again.

17 In terms of -- in terms of, okay, the -
18 - you have given the level of risk, or risk associated
19 with different area -- or different areas on the right
20 of way such as the Funeral Creek pass risk, which was
21 listed as high to very high.

22 So if you associate that, and add on
23 the supply risks or the consequences, and then you add
24 on the terrain, you add on speed, you add on
25 likelihood of collision, you add on rollover

1 potential, you add on road width and -- and percentage
2 of grade, given the -- given the equipment that is
3 going to be used to -- to haul materials, that is the
4 example in which I am using here.

5 MR. DAVID HARPLEY: It's Dave Harpley.

6 Okay, I better understand the question
7 now. So -- so most of those components that you've
8 listed were the items that we fed into the estimation
9 of probability of accidents in the table that I showed
10 earlier.

11 And you're right that they do feed into
12 the section of high risk that we identified towards
13 the top of the catchment of Prairie Creek. And the
14 response to that risk, and the possibility of the --
15 the consequence of -- for downstream was we
16 specifically identified the location where those
17 tributaries of that particular creek converge as a
18 location where we want to have a control point.

19 So that's a location where we would
20 have resources in place stored. So we're talking
21 booms, a dam, maybe a pump, soda ash in case it's an
22 acid spill, and other materials like that. So the
23 materials are actually there. The reason we ranked it
24 high risk is because of the grade of the slope, and
25 also because there's a significant distance between

1 the road bed and the bottom of the valley, so it would
2 be difficult to access if there -- if there was an
3 accident.

4 So by providing the materials at the
5 control point, we're providing the means for
6 responders to actually address an issue without the
7 need to having vehicular access.

8 MR. DEAN HOLMAN: Thank you, Madam
9 Chair. Dean Holman, here again.

10 Given -- given the answer that CZN has
11 provided, I'm interested in what is the duration of
12 higher risk areas in terms of, you know, the time they
13 enter into those higher risk areas to the time that
14 they leave those higher risk areas in terms of, you
15 know, travel?

16 MR. DAVID HARPLEY: It's Dave Harpley.

17 I guess I'll have to do some mental
18 arithmetic to figure that one out, but if -- if we
19 assume that the high-risk section is approximately 5
20 kilometres long, and we're travelling at, let's say,
21 20 kilometres an hour, because the truck's ascending
22 if it's concentrate, somebody can perhaps work that
23 out pretty quickly, but I -- 20 kilometres an hour, 5
24 kilometres, fifteen (15) minutes, I guess.

25 MR. DEAN HOLMAN: Thank you, Madam

1 Chair. Dean Holman, here again.

2 Given the answer that -- that David has
3 provided, I'm interested in learning to know what is
4 the percentage of moderate to -- to very high-risk
5 areas along the -- the right of way? So essentially,
6 you know, the -- a percentage -- an overall percentage
7 of the road that is from moderate to high -- very high
8 risk. Sorry, from the mine to the highway.

9 MR. DAVID HARPLEY: It's Dave Harpley.

10 I guess I would have to calculate that.
11 Off the top of my head, based on total length of road,
12 my guess it was -- is it would be something between 5
13 and 10 percent. But that's kind of a guesstimate at
14 this point.

15 MR. DEAN HOLMAN: Madam Chair, Dean
16 Holman, here again.

17 Can CZN undertake that to -- or provide
18 that as an undertaking?

19 MR. DAVID HARPLEY: Yes, we can do --
20 Dave Harpley. We can do that.

21 MR. CHUCK HUBERT: Chuck Hubert here.
22 Can you please restate exactly what that undertaking
23 will be?

24 MR. JOHN DONIHEE: Madam Chair, it's
25 John Donihee. Undertaking number 2 then will be

1 Canadian Zinc will calculate and identify the amount
2 of medium to high risk area along the road from the
3 mine to the -- to the Liard Highway.

4 MR. DAVID HARPLEY: Dave Harpley.
5 That's fine.

6
7 --- UNDERTAKING NO. 2: Canadian Zinc to calculate
8 and identify the amount of
9 medium to high risk area
10 along the road from the
11 mine to the Liard Highway

12
13 MR. JOHN DONIHEE: It's John Donihee,
14 Madam Chair, if necessary, of course, you can file
15 that at -- at the time of the undertakings, but if it
16 can be done -- be done more quickly, then you can --
17 you can file the response any time.

18 THE CHAIRPERSON: Questions from
19 Liidlili Kue First Nation?

20 MR. DEAN HOLMAN: Thank you, Madam
21 Chair. My next line of questions are in relation to
22 the predictions of impacts of karst and permafrost.
23 The first question is: Does high volume traffic
24 increase potential impacts to permafrost given the
25 frequency of traffic, and also the weights of loads or

1 payloads on the -- on the right-of-way in those areas
2 where there is potential for karst and permafrost to
3 occur?

4 MR. DAVID HARPLEY: It's Dave Harpley.
5 On the karst side of things, this was an issue that
6 came up in the last EA. And I believe it was Golder
7 Associations who provided input to explain that truck
8 weight really was relatively insignificant in terms of
9 impacts on karst terrain, or -- or at least damage to
10 karst terrain. I'm going by memory, but that's --
11 that's what I recollect.

12 As far as permafrost, I don't really
13 think I'm qualified to answer that assessment. I'm
14 wondering if our consultant is -- Kevin Jones is on
15 the -- on the line and he might be able to answer it.

16

17 (BRIEF PAUSE)

18

19 THE CHAIRPERSON: Okay. Mr. Jones
20 online, can you answer the question?

21

22 (BRIEF PAUSE)

23

24 THE CHAIRPERSON: Sorry, Mr. Jones,
25 would you be so kind to start over again? We just had

1 a technical problem.

2

3 (BRIEF PAUSE)

4

5 MR. KEVIN JONES (BY PHONE): ...of
6 time. And the reason that there's no impact is
7 permafrost frozen -- frozen materials are very, very,
8 very strong under short-term loading. It is the long-
9 term loading if something sits there for years, much
10 like the road embankment, that there is an impact on
11 the underlying permafrost.

12 So the traffic absolutely would not
13 have any impact on the stability of the foundation of
14 the road embankment.

15 THE CHAIRPERSON: Okay, thank you.
16 Liidlili Kue First Nations?

17 MR. GARTH WALLBRIDGE: Madam Chair, a
18 point of order. For the people in the room, certainly
19 I have no idea who that person was on the phone. I
20 wonder if we might get an introduction and their
21 involvement. It would be helpful to know since
22 they're not present and I can't walk up and ask them.
23 Thank you.

24 THE CHAIRPERSON: Okay. He did state
25 his name and where he was from. But, Mr. Jones, if

1 you could please introduce yourself again?

2 MR. KEVIN JONES (BY PHONE):

3 Certainly. Kevin Jones, Tetra Tech Canada. I'm the
4 Vice-President of arctic engineering for Tetra Tech
5 Canada. I've been working in engineering design in
6 permafrost regions for thirty-six (36) years now,
7 involved in many, many transportation projects, both
8 roads and rails throughout the Canadian Arctic and
9 Arctic locations around the world.

10 MR. GARTH WALLBRIDGE: Thank you for
11 that information, Mr. Jones. I'm -- this is Garth
12 Wallbridge. I should have pointed that out a moment
13 ago, legal counsel for the Nahanni Butte Dene Band.

14 THE CHAIRPERSON: Mr. Wallbridge, it
15 isn't your time to --

16 MR. GARTH WALLBRIDGE: I still don't
17 know why he's on the phone.

18 THE CHAIRPERSON: -- please.

19 MR. GARTH WALLBRIDGE: Is he working
20 for you folks? Is he working for the proponent? Just
21 a simple introduction would be helpful. Thank you.

22 THE CHAIRPERSON: Canadian Zinc, do
23 you have an answer for Mr. Wallbridge, as to who Mr.
24 Jones is working for?

25 MR. DAVID HARPLEY: It's Dave Harpley.

1 Mr. Jones works for Tetra Tech, who is a geotechnical
2 consultant that we employed for the road design.

3 MR. GARTH WALLBRIDGE: Thank you.

4 THE CHAIRPERSON: Sorry about that
5 Liidlili Kue First Nations. Questions?

6 MR. DEAN HOLMAN: Yes, thank you.
7 Thank you, Madam Chair, and thank you for the point of
8 clarification. There is a -- there -- there is
9 research, or existing research on linear disturbance
10 and impacts resulting from climate change.

11 I'm wondering what information Canadian
12 Zinc is relying on to identify mitigation to impacts
13 to permafrost in karst areas given that there's no
14 detailed design for areas where the new right-of-way
15 crosses over areas with that potential.

16 MR. DAVID HARPLEY: It's Dave Harpley.
17 I'll attempt an introduction, but I'll let Kevin Jones
18 take over. But if I'm not mistaken, permafrost is
19 usually an issue in fine grain soils. And I -- I
20 don't think we're anticipating a significant amount of
21 permafrost in actual karst terrain.

22 Perhaps in surficial soil in karst
23 terrain, but I'll let Kevin take over.

24 THE CHAIRPERSON: Mr. Jones...?

25 MR. KEVIN JONES (BY PHONE): Kevin

1 Jones, Tetra Tech Canada. Dave Harpley is indeed
2 correct. The issues of permafrost and degradation are
3 certainly typically more challenging in the finer
4 grain soils, of which there does not appear to be a
5 great extent of the fine-grain soils.

6 Climate change is, of course, a
7 concern. It was addressed throughout our design to
8 date, the -- the preliminary design anyway, to -- to
9 be considered. The -- the one (1) thing that needs to
10 be considered here is the fact that this is a
11 relatively short life road.

12 The impact of climate change on
13 degradation of permafrost is extremely, extremely
14 slow. With the given amount of climate change that we
15 would see in this area, it would take decades and
16 decades to degrade the permafrost to a point that
17 would cause concern.

18 The climate issues that, however,
19 really need to be addressed from a degradation of
20 permafrost perspective is -- is certainly surface
21 water. As permafrost researchers have shown all
22 around the world, one (1) of the worst impacts on
23 permafrost soils in -- in linear developments is not
24 managing surface water and water that flows through
25 the active layer correctly.

1 In that regard, the design considers
2 how to best handle water to make sure water doesn't
3 pond at the toes of the embankment and -- and so on so
4 we don't have degradation due to -- to water. And as
5 I say, climate change takes a very, very, very long
6 time to degrade permafrost to the point that it would
7 cause degradation of the road to make it unusable.

8 MR. DEAN HOLMAN: Thank you for that.
9 Madam Chair, I am -- this leads into -- the next
10 question I have here is: What are the predicted
11 impacts to drainage in high snow volume areas,
12 permafrost areas, and then high freshet areas, given
13 the - given the answer that Tetra Tech has provided
14 us?

15 I'm just wondering, you know, in -- in
16 terms of that surface water, like what impacts to
17 drainage.

18

19 (BRIEF PAUSE)

20

21 MR. ERNIE KRAGT: Ernie Kragt, with
22 Allnorth. In response, typically in the detailed
23 design you would focus on -- on water management.
24 Kevin spoke about the -- the impacts of water in
25 permafrost, but it -- but water generally is -- is a -

1 - is a real concern to any -- any road development.

2 So maintaining all-natural drainages in
3 -- is -- is essential, and then providing adequate
4 cross-drainages so to avoid ponding of water and --
5 and standing water is critical.

6 And the location of the road is -- is
7 critical, too, in that we -- we try to locate the road
8 on -- on a more of a side slope, a gentle side slope,
9 to -- to allow the natural water to flow as opposed to
10 keeping the road on -- on flatter -- flatter terrain
11 where the water tends to -- to congregate and pond.

12 So those are the approaches that --
13 that we have taken and -- and will take in the
14 detailed design.

15 MR. DEAN HOLMAN: Thank you. I just
16 have -- I have three (3) more questions. They should
17 be fairly short. Again, Dean Holman, from Liidlii Kue
18 First Nation.

19 Regarding the corduroy road, we were --
20 what I was wondering here was the types of logs that
21 would be used, and then the resilience of those logs
22 to rapidly changing environmental conditions.

23 We heard -- we heard that, you know,
24 this is -- corduroy roads are a successful or a highly
25 used method of road construction in BC. But here in

1 the territories, we do have, you know, rapidly
2 changing environmental conditions from season to
3 season.

4 So again, you know, what is the -- what
5 type of logs and what resilience do those logs have to
6 rapidly changing environmental conditions? Masi.

7 MR. ERNIE KRAGT: Ernie Kragt, with
8 Allnorth. Earlier we were actually speaking in person
9 about this -- this particular subject. The approach
10 towards corduroy is -- is limited to those sections
11 that basically are considered quite wet and/or have
12 permafrost potential.

13 The idea is to not disturb the natural
14 environment and basically float a road overtop. This
15 -- this approach is widely used in BC, including the
16 northern parts in -- in Fort Nelson which -- which are
17 fairly comparable to -- to the environment that we
18 will be dealing with.

19 In terms of species, it will be what's
20 essentially available, which -- which is a mix of --
21 of spruce, pine, and -- and some aspen. By properly
22 sealing the -- the corduroy, and -- and I mean sealing
23 it with -- with an ample mineral soil seal, this
24 corduroy in a -- in an oxygen-reduced environment will
25 -- will withstand decades of -- of use, which is

1 certainly supporting the -- the approach of a twenty
2 (20) year road life that -- that is presently
3 proposed.

4 So this -- the corduroy does work and
5 has worked effectively in -- in these type of
6 environments in BC. And -- and we think it's -- it's
7 a reasonable approach to -- to these -- these type of
8 ground conditions that are otherwise not -- not
9 favourable to a road.

10 THE CHAIRPERSON: Mr. Harpley, you
11 would like to add to that?

12 MR. DAVID HARPLEY: Yeah, it's Dave
13 Harpley.

14 I guess I just wanted to add the
15 consequence of there being an issue with this corduroy
16 is it will mean that additional road maintenance might
17 be required over and above a normal road section. And
18 we realize that's a potential consequence, and it's a
19 risk we're willing to take.

20 MR. DEAN HOLMAN: Thank you. I'm just
21 wondering just in -- in the question from -- or the
22 clarification from Allnorth, how does Fort Nelson
23 compare to -- to this area in which is in question?

24

25 (BRIEF PAUSE)

1 MR. ERNIE KRAGT: Ernie Kragt with
2 Allnorth.

3 The -- the northern flat land terrain
4 of Fort Nelson, I would think, is comparable to -- to
5 some of the environment that we see in -- on -- on the
6 Prairie Creek mine proposed road in -- in the low
7 lands.

8 MR. DEAN HOLMAN: Just -- thank you.
9 Madam Chair, Dean Holman again.

10 Does the Fort Nelson area, or the areas
11 that you were referencing have permafrost?

12 MR. ERNIE KRAGT: Probably Kevin can
13 speak better to that effect but I'm -- I'm not aware
14 of permafrost as being much of an issue in -- in the
15 Fort Nelson area.

16 MR. KEVIN JONES (BY PHONE): Kevin
17 Jones, Tetra Tech.

18 That's indeed correct, Ernie. We would
19 not expect permafrost in the Fort Nelson area.

20 MR. DEAN HOLMAN: I have a question
21 from the Chief here. He was interested in ask --
22 asking, What is the maximum allowable road grade for
23 trucks travelling on the road, and what percentage of
24 the road would be over the maximum allowable grade?

25 MR. ERNIE KRAGT: Ernie Kragt, with

1 Allnorth.

2 The standards that we apply, or -- or
3 utilized are in the BC forest engineering manual.

4 Overall we -- we aim to have an 8 percent or less
5 grade. There are circumstances where for -- for short
6 periods -- short sections, generally less than a few
7 hundred metres, where -- where we -- where we may be
8 up to 12 percent grade.

9 MR. DEAN HOLMAN: Thank you, Madam
10 Chair. I will be stopping here fairly quick.

11 What percentage of the road has the
12 detailed design in terms of the new right of way? We
13 know that there's a significant portion of the road
14 that there is no information, including -- basically
15 including, you know, like the -- I guess the heritage
16 resources.

17 I don't want to mention that now but in
18 terms of just the -- the detailed design, what
19 percentage of the road has -- or of your design has
20 that right now?

21 MR. DAVID HARPLEY: It's Dave Harpley.

22 I believe that question was asked
23 already, and the answer was we're not at the detailed
24 design stage so none has been complete at this point.
25 We're at the preliminary design stage.

1 But I think it -- it's important to
2 note that there is existing information on the whole
3 road. For example, we have LIDAR coverage of pretty
4 much the whole road, which gives us quite accurate
5 relief information. And that's the information that
6 we've used, as well as the preliminary design work
7 that has been undertaken focussed on the more
8 difficult sections so that we have a representative
9 design for the whole road alignment.

10 MR. DEAN HOLMAN: Thank you. Madam
11 Chair, Dean Holman, here again.

12 The one thing that LKFN is definitely -
13 - is in support of is monitoring of the -- the roads,
14 the impacts, the safety issues, and that LKFN would
15 like to be included in any monitoring plans or
16 designs, any -- given any method of moni -- monitoring
17 that occurs. Masi. That is -- that -- the end of my
18 questions for now.

19 THE CHAIRPERSON: Thank you.
20 Questions from Nahanni Butte Dene Band? Mr.
21 Wallbridge...?

22 MR. GARTH WALLBRIDGE: Garth
23 Wallbridge, for the band. Thank you, Madam Chair.
24 Just if I might comment from a few minutes ago. Your
25 executive director graciously came up to me and

1 explained that the gentleman who was on the phone, his
2 name is in the online materials, to which I replied,
3 of course, many people in the room may not have those
4 online materials in front of them.

5 So often when I ask questions, it's
6 very intentionally to -- to help make this a truly
7 public hearing, and everybody who might have been able
8 to show up today know who's who. So thank you for
9 allowing me to make that explanation. The band has no
10 questions. Thank you.

11 THE CHAIRPERSON: Thank you.
12 Questions from Natural Resources Canada?

13 MR. DANNY WRIGHT: Thank you, Madam
14 Chair. This is Danny Wright, from NRCan. We have no
15 questions at this time.

16 THE CHAIRPERSON: Questions from Parks
17 Canada Agency?

18 DR. JAMIE VANGULCK: Thank you, Madam
19 Chair. My name's Jamie Vangulck. I'm a technical
20 consultant for Parks Canada with an organization
21 called Arktis Solutions. I'll start off with some
22 questions regarding spill contingency and response
23 planning.

24 In response to the technical report,
25 specifically Parks Canada 26, Canadian Zinc states

1 that an operational risk level assessment will be
2 completed on the road before commencements of
3 operation.

4 Could Canadian Zinc describe the
5 objectives of the operational risk assessment, how
6 this assessment differs from the risk assessment
7 completed to date, and how this risk assessment will
8 further inform mitigation measures pertaining to
9 spills and accidents?

10

11 (BRIEF PAUSE)

12

13 MR. DAVID HARPLEY: It's Dave Harpley.
14 Let's have a go at reframing the question, and
15 otherwise we'll defer an answer later, if we may.

16

17 (BRIEF PAUSE)

18

19 DR. JAMIE VANGULCK: Jamie Vangulck,
20 for Parks Canada. I am trying to understand the
21 objectives of the operational risk assessment that's
22 been proposed to be completed and how that operational
23 risk assessment differs from the risk assessment
24 presented in the -- in the -- the environmental
25 assessment process so far to date.

1

2

(BRIEF PAUSE)

3

4

MR. DAVID HARPLEY: It's Dave Harpley.

5

If we may, can we defer that answer and come back at a

6

later time?

7

THE CHAIRPERSON: Parks Canada, is

8

that fine with you?

9

DR. JAMIE VANGULCK: Thank you, Madam

10

Chair. If that's an undertaking, that's fine with us.

11

THE CHAIRPERSON: Legal counsel?

12

MR. JOHN DONIHEE: John Donihee,

13

counsel to the Board. If I may just try to clarify

14

what's happened, Madam Chair. Mis -- Mr. Harpley,

15

were you intending to come back to that issue in

16

writing or -- or simply to answer the question later

17

in -- in the -- in the hearing this week?

18

MR. DAVID HARPLEY: Dave Harpley. I -

19

- I mean, just give us a time to talk during a break,

20

and then we'll answer it.

21

MR. JOHN DONIHEE: Madam Chair, it's

22

John Donihee. I -- I suggest that's -- that's fine,

23

and it's -- it's more efficient to do it that way,

24

Madam Chair, but all I would say is, when the answer

25

comes back, then, if there's a follow-up question from

1 Parks Canada, I'd -- I'd recommend that the Board
2 allow that to -- them to do that so that they get a
3 full answer to -- to the question.

4 THE CHAIRPERSON: Okay, so noted.
5 Okay, questions from Parks Canada?

6 DR. JAMIE VANGULCK: Thank you, Madam
7 Chair. Jamie Vangulck, for Parks Canada. Just a --
8 as a follow-up question, one (1) that we would like to
9 ask pertaining to the operational risk assessment
10 would be whether or not that risk assessment would be
11 done on the entire road or only specific sections.

12 MR. DAVID HARPLEY: It's Dave Harpley.
13 The -- the entire road.

14 DR. JAMIE VANGULCK: Thank you, Madam
15 Chair. Jamie Vangulck, for Parks Canada. Could
16 Canadian Zinc clarify the road characteristics within
17 road section 23.5 to 28.1? Specifically, is this
18 section adjacent to Sundog Creek? Does it have
19 significant downslopes between the road and the creek?
20 And is that portion of the creek within fish-bearing
21 waters proximity?

22 MR. DAVID HARPLEY: It's Dave Harpley.
23 For the most part, it's my belief that the road is not
24 on a significant slope. It's on a kind of a bench
25 above the creek, and is not proximal to the main stem

1 of the creek. It certainly crosses a number of
2 tributaries, small tributaries, quite steep
3 tributaries in places of Sundog Creek.

4 But for the most part, at least in the
5 initial part of that section, from, I'm going to say
6 twenty-three point three (23.3) to somewhere in the
7 region of kilometre 26, the traverse is -- is
8 relatively flat in terms of grade. There is some
9 descent.

10 Once we get beyond twenty-six (26), and
11 particularly when we get to kind of twenty-seven (27)
12 and twenty-eight (28), then we do get closer to the
13 main stem and there is a section where there is an --
14 an increase in downgrade, so that we -- we get to the
15 elevation of the last crossing on that stretch at
16 about kilometre 28.

17 That section of the creek from twenty
18 (20) -- the main stem, that is, from twenty-eight (28)
19 to, as I said earlier, about kilometre 25 upstream, is
20 certainly potentially fish-bearing, and I think there
21 have been observations of fish in the pools in that
22 section. But upstream of twenty-five (25), it's not
23 fish-bearing because of the waterfall.

24 DR. JAMIE VANGULCK: Thank you for
25 your response. Thank you, Madam Chair. One (1) more

1 question on the spill contingency before moving onto
2 another topic. This is Jamie Vangulck, for Parks
3 Canada.

4 Can Canadian Zinc confirm they will
5 update the spill contingency and response plans based
6 on the updated road design and operations plans for
7 the road?

8 MR. DAVID HARPLEY: Dave Harpley. I
9 guess we can assume that all of the draft plans that
10 are available at present will be reviewed and updated
11 as -- as appropriate. During the kind of period after
12 permit issue, again, drawing on previous experiences,
13 typically what will happen is completion of those
14 plans will be conditions of a permit and there'll be a
15 review process of those plans and an approval step
16 before work is actually undertaken on the road.

17 DR. JAMIE VANGULCK: Thank you. Jamie
18 Vangulck, for Parks Canada. I'll move onto some
19 questions regarding the risk assessment. Specific to
20 the presentation by Canadian Zinc on slides 13 and 14,
21 reference is made to a winter road.

22 Can Canadian Zinc clarify if the winter
23 road presented in these slides is the permitted winter
24 road alignment or the winter road along the all-season
25 road alignment?

1 MR. DAVID HARPLEY: It's Dave Harpley.
2 Those sections would be the permitted winter road
3 alignment.

4 DR. JAMIE VANGULCK: Thank you. Jamie
5 Vangulck, for Parks Canada. Canadian Zinc currently
6 holds permits to construct and operate a winter road
7 from the mine to Liard Highway. The current proposed
8 all-season road overlaps the alignment of this
9 permitted winter road in many places. However, there
10 are numerous areas where the proposed all-season road
11 follows a new alignment.

12 Can Canadian Zinc please confirm what
13 their plans are in terms of the permitted road --
14 winter road, should the proposed all-season road be
15 approved? Would Canadian Zinc build and operate the
16 permitted road? Sorry, let me rephrase that. Would
17 Canadian Zinc build and operate the permitted winter
18 road, as well as build and operate the all-season road
19 concurrently?

20 MR. DAVID HARPLEY: It's Dave Harpley.
21 We're in -- on record as stating that our preference
22 and intention is to develop one (1) alignment only,
23 and that would be both a winter road and an all-season
24 road on the all-season road alignment, with the
25 exception that, in the initial years of construction,

1 as indicated in my presentation earlier, we would
2 intend to use the two (2) sections, the -- the one in
3 Sundog and the one in the Fishtrap area.

4 We would use the permitted winter road
5 alignment in those two (2) locations just for the
6 initial construction until such time as we are able to
7 build the all-season road alignments.

8 DR. JAMIE VANGULCK: Thank you. Jamie
9 Vangulck, for Parks Canada.

10 So the two (2) alignments where the
11 initial use of the winter alignment will be used are
12 24 to 29 kilometre mark as well as ninety (90) to
13 ninety-five (95)? Can you confirm that that's the
14 case, and that there will be no other road sections
15 where the permitted winter road alignment will be
16 desired to be constructed?

17

18 (BRIEF PAUSE)

19

20 MR. DAVID HARPLEY: Dave Harpley.
21 That's essentially correct. Bear in mind that in --
22 in lower Sundog, we are proposing to have the all-
23 season road along the edge, the southern edge of the -
24 - the flood plain, whereas historically, the -- the
25 winter road occupied a more central part of that flood

1 plain.

2 So I -- I think you can anticipate that
3 initial winter road would perhaps similarly not
4 interfere with the -- the southern edge of the flood
5 plain during initial construction. The -- the simple
6 approach to and -- and least-impact approach, at
7 least, for a winter road is basically to use snow fill
8 and ice in that section.

9 But we identified the twenty-four (24)
10 to twenty-nine (29) and ninety (90) to ninety-five
11 (95) sections as the more significant ones, where we
12 will initially retain the winter alignment.

13 But I -- I don't want you to get the
14 impression that we're going to build the initial
15 winter road from kilometre 40 to 29 on the all-season
16 alignment either, because it -- it would simpler and
17 less impact, I think, to simply build more centrally
18 to the -- to the flood plain in the wintertime.

19

20 (BRIEF PAUSE)

21

22 DR. JAMIE VANGULCK: Thank you, Madam
23 Chair. Jamie Vangulck, for Parks Canada.

24 The construction of the all-season road
25 may occur up to a three (3) year period. Is it

1 Canadian Zinc's -- will Canadian Zinc operate the
2 winter road sections and the all-weather road sections
3 to haul ore materials and supplies to and from the
4 mine site during the construction phase?

5 MR. DAVID HARPLEY: It's Dave Harpley.
6 We will use the sections that I mentioned that are
7 already permitted for winter use to haul in initial
8 supplies to the mine to enable initiation of
9 construction of the mine.

10 However, we do not propose to use those
11 alignment sections for the start of concentrate,
12 hauling operations out of the mine.

13 DR. JAMIE VANGULCK: Thank you, Madam
14 Chair. I'll move onto permafrost topics. My name is
15 Jamie Vangulck, for Parks Canada.

16 Does Canadian Zinc agree that
17 permafrost monitoring could commence at time of the
18 geotechnical investigations to support road design,
19 for example, commencement of ground temperature
20 monitoring after the installation of thermistors?

21 MR. DAVID HARPLEY: It's Dave Harpley.
22 I'll defer to Kevin Jones to that --
23 for that reply.

24 MR. KEVIN JONES (BY PHONE): Kevin
25 Jones, Tetra Tech.

1 Indeed. Part of the geotechnical
2 investigation would involve instal -- installation of
3 ground temperature cables. That information is
4 necessary to guide the design of the embankment
5 thickness required for the permafrost areas.

6 And the hope would be that, in fact,
7 some of those cables could be utilized well into the
8 future for monitoring of the off alignment permafrost
9 conditions hopefully throughout the -- the length of
10 the occupation of the road.

11 DR. JAMIE VANGULCK: Thank you for
12 your response. Jamie Vangulck, for Parks Canada.

13 Does Canadian Zinc agree that
14 permafrost monitoring could commence at time of road
15 construction to obtain baseline information needed to
16 assess signs of potential degradation in the future?
17 For example, in road sections where there are cuts and
18 known permafrost.

19 MR. DAVID HARPLEY: Dave Harpley.
20 Kevin...?

21 MR. KEVIN JONES (BY PHONE): I would -
22 - Kevin Jones, Tetra Tech.

23 Yes, I would say that's certainly a
24 very good possibility.

25 DR. JAMIE VANGULCK: Thank you. Jamie

1 Vangulck, for Parks Canada.

2 Canadian Zinc stated in their response
3 to the technical reports that the -- for the
4 Tuktoyaktuk to Inuvik highway project, the permafrost
5 monitoring plan for that project was completed after
6 the bulk of the construction occurred.

7 Upon review of that water licence for
8 the Tuk to Inuvik highway, the permafrost monitoring
9 plan was a requirement to be submitted thirty (30)
10 days after licence issuance. Therefore, the
11 permafrost monitoring plan was submitted prior to road
12 construction, and after completion of the engineering
13 design of the road.

14 Could Canadian Zinc comment on this
15 apparent discrepancy?

16 MR. DAVID HARPLEY: Dave Harpley.
17 Kevin...?

18 MR. KEVIN JONES (BY PHONE): Kevin
19 Jones, Tetra Tech.

20 What -- what you did say is the
21 monitoring program had to be submitted after the
22 design, and that's I believe what we said in the
23 response to the IRs was once the design has been
24 completed a monitoring plan would be developed that
25 would be appropriate because it needs to have the

1 information from the geotechnical investigation
2 certainly to know where you can install, and where the
3 -- the permafrost exists.

4 There are -- let's say there's more
5 than one (1) monitoring system for the Inuvik to Tuk
6 highway. The -- a plan was there at the time of the
7 design work. Subsequent to that, additional
8 monitoring has been developed. It was developed by
9 the GNWT to monitor some additional locations, and
10 those instruments have just been installed a month or
11 two (2) ago now by the GNWT.

12 So there was a -- there's a second
13 level of -- of instrumentation installed in the Inuvik
14 to Tuk over what was submitted as a monitoring plan
15 after final design.

16 DR. JAMIE VANGULCK: Thank you. It's
17 Jamie Vangulck, for the -- for Parks Canada. It's our
18 understanding that the initial permafrost monitoring
19 plan was completed after the initial road design prior
20 to construction. It's our understanding that the
21 response from Canadian Zinc was the -- in that
22 instance, the permafrost monitoring plan was -- was
23 produced after the bulk of construction occurred, so
24 that was our confusion as to why we asked for clarity
25 on this.

1 So we -- we -- what we've heard is,
2 yes, the permafrost monitoring plan was completed
3 after the engineering design before construction and
4 that there was updates to that permafrost monitoring
5 plan in subsequent years to reflect adjustments needed
6 for that undertaking.

7 Is that a correct statement?

8 MR. KEVIN JONES (BY PHONE): Kevin
9 Jones, Tetra Tech. Perhaps there's some confusion as
10 to what permafrost monitoring is. There were lots of
11 ground temperature cables installed during the
12 geotechnical site investigation for the Inuvik to Tuk
13 highway to provide ground temperature data to allow
14 the design to proceed into detailed level.

15 Some of that instrumentation remains
16 today and is utilized as monitoring. I would say the
17 first use of those instruments was not for monitoring,
18 it's to determine the design parameters that needed to
19 be followed. So there's -- there's two (2) different
20 kinds of ground temperature monitoring, one (1) that's
21 required for design, the second for longer term
22 monitoring once the road is in place.

23 So often the instruments are utilized
24 for two (2), and that's what we would propose here.

25

1 (BRIEF PAUSE)

2

3 DR. JAMIE VANGULCK: Thank you. Jamie
4 Vangulck, for Parks Canada. So am I hearing this
5 correct, that there is plans from Canadian Zinc to
6 complete permafrost monitoring during the construction
7 phase and that permafrost monitoring during the
8 operations phase and that plan would be a separate
9 management tool?

10 MR. DAVID HARPLEY: Dave Harpley.
11 Kevin...?

12 MR. KEVIN JONES (BY PHONE): Kevin
13 Jones. That would be -- yes.

14

15 (BRIEF PAUSE)

16

17 DR. JAMIE VANGULCK: Thank you very
18 much for your response. Jamie Vangulck, for Parks
19 Canada. We've heard that the level of road design
20 completed at this stage is at a preliminary level of
21 design.

22 What can be expected moving into the
23 licensing phase for level of road design? What level
24 of road design would be completed at time of entering
25 the licensing phase?

1 MR. DAVID HARPLEY: It's Dave Harpley.
2 It's our expectation that should the Review Board
3 approve the project, and then we go into permitting,
4 that design requirements would be defined as
5 conditions of the permit and that subsequent to the
6 issue of a permit, then the detailed design would
7 unfold at that point, subject to review and approval
8 before the actual work is conducted.

9

10 (BRIEF PAUSE)

11

12 DR. JAMIE VANGULCK: Jamie Vangulck,
13 for Parks Canada. Thank you very much, Canadian Zinc,
14 for your responses. Madam Chair, we are all finished
15 with our lines of questions.

16 THE CHAIRPERSON: Okay, thank you.
17 Questions from Review Board staff?

18

19 (BRIEF PAUSE)

20

21 MR. DAVID HARPLEY: Madam Chair?

22 THE CHAIRPERSON: Mr. Harpley.

23 MR. DAVID HARPLEY: Thank you. It's
24 Dave Harpley.

25 I -- I don't want to usurp your

1 position but I'm going to need a break fairly soon,
2 and I'm just wondering how long we're going to
3 continue for?

4 THE CHAIRPERSON: We're -- we were
5 just talking about the same thing up here, so staff
6 have a few questions. It's -- maybe five (5) minutes?
7 Okay.

8 MR. TOBY PERKINS: Toby --

9 THE CHAIRPERSON: Questions from
10 staff?

11 MR. TOBY PERKINS: Toby Perkins. I'm
12 a technical advisor to the Board. And some of these
13 questions are also on behalf of my colleague, James
14 Haley. He's on the line, and he may provide further
15 clarification if needed.

16 So this question refers to the risk of
17 landslides related to the proposed cut and fill slopes
18 for the road. It is understood that the risk of
19 landslides related to -- to the proposed man-made
20 slopes is to be managed by undertaking a terrain
21 stability assessment.

22 Can you, please, describe how this
23 process will account for deep-seated landslide hazards
24 -- deep -- deep-seated landslide hazards that have
25 been identified along the alignment, in particular

1 along the Silent Hill section from approximately
2 Station 95.5 to Station 102?

3 And we're asking this because deep-
4 seated natural slope instability has been identified
5 in this area, as well as evidence of landslide
6 reactivation, and the process of cutting and filling
7 could reactivate slope instability.

8 The reliability of interpretation of
9 the depth and nature of slope instability will be infl
10 -- influenced by the availability of subsurface bore
11 hole data, which is not necessarily collected as part
12 of a terrain stability assessment.

13 We have reservations regarding the
14 adequacy of the highlighted mitigation method for such
15 areas which are compromised of enhancing surface
16 drainage measures, particularly if the slope
17 instability results from the present sort of adverse
18 structure geology -- structure geological features at
19 depth within the bedrock.

20 MR. DAVID HARPLEY: It's Dave
21 Harpley. I guess I'll attempt an introduction to that
22 answer, and then I'll defer to Kevin to follow up with
23 a more geotechnical comment.

24 But you'll remember from my
25 presentations that we spent quite a bit of time in

1 this area refining the route to minimize grade. The
2 other reason we spent quite a bit of time was to
3 minimize issues with respect to slope instability. So
4 we've -- we've selected a route that hopefully will
5 minimize cut and fill, and associated issues as far as
6 slope stability and drainage.

7 Ernie can also speak to this, but we
8 recognize that there are locations of instability
9 north and south of the area. It does appear from
10 prior investigations, and this is going back to the
11 previous EA, and also recent investigations that we're
12 in an area where it appears that the slope is stable.

13 So we recognize that there are possible
14 issues, and we've tried to accommodate them by our
15 approach to the alignment, and -- and the construction
16 method. But maybe I'll defer to Kevin for further
17 comment.

18 MR. KEVIN JONES (BY PHONE): Kevin
19 Jones, Tetra Tech.

20 I don't think I have much to add to
21 that, David. Indeed the -- the route has been located
22 as good as we can to avoid as much of the instability
23 as -- as possible.

24 I'm not sure, James, how deep your
25 deep-seated instability is so maybe I would have a

1 question in -- in that regard as to what do you think
2 the depth of your deep-seated potential instability
3 might be? And -- and, you know, if -- if it's
4 significant a geotechnical investigation certainly
5 could probe to -- to see what the reason is for that
6 instability, if there is -- is any, and what could be
7 done to mitigate against it.

8 MR. JAMES HALEY (BY PHONE): James
9 Haley on the line. Can people hear me okay?

10 MR. TOBY PERKINS: Yeah, we can hear
11 you, James. Can you just introduce yourself again,
12 please?

13 MR. JAMES HALEY (BY PHONE): Yeah, so
14 James Haley, Knight Piesold, representing the Board on
15 them as -- as a technical specialist for terrain
16 hazards.

17 And, yeah, I mean, we took -- the focus
18 of the question really comes to some -- the terrain
19 stability assessment is a recognized process in the
20 resource sector. And typically, when that process is
21 done, it -- it quite often it doesn't rely on bore
22 data.

23 But that's not to say that in a
24 situation where there's deep-seated instability, there
25 isn't a need to do that. And, yeah, our experience is

1 that it's -- you know, it's -- in terms of managing
2 the risk, it's -- it's important to do -- when -- in a
3 situation like this where there's evidence of a deep-
4 seated instability.

5 And also natural reactivation of that,
6 cutting and filling -- filling in those areas can --
7 can be the cause of reactivation itself. It doesn't
8 take much cut or fill to -- to do that.

9 And part of the mitigation process --
10 of risk management process is really getting in there
11 and understanding the -- the landslide mech -- natural
12 landslide mechanism ahead of time so that planning can
13 be done going forward.

14 So I guess the -- the follow-up
15 question is -- is: Can -- can Can Zinc commit to
16 carrying sub-surface bore investigation along this
17 section of the route during initial design as part of
18 the broader landslide risk management process?

19 MR. DAVID HARPLEY: It's Dave Harpley.
20 Again, I'll take an initial shot, and then I'll pass
21 it over to Kevin. I did struggle to hear all of that,
22 but maybe you -- Kevin, you heard it better than I
23 did.

24 I'm going to approach this kind of from
25 a lay perspective perhaps to help the audience. It's

1 my impression that most of the issues on this slope
2 are actually shallow, not deep-seated. Certainly
3 there are locations along that ridge to the north and
4 south where there is some evidence of slumping which I
5 assume are shallow stability issues, not deep.

6 As I mentioned, it seems from previous
7 and recent investigations that we're in an area of the
8 slope where -- of the slope where the shallow soils
9 appear to be stable. And we're trying hard to not
10 disturb them at all in our road construction.

11 So I'm not sure what else is
12 appropriate as far as shallow soils. However, I'm not
13 really understanding the issue regarding deep-seated
14 and if there's a need for something specific to that.
15 So now I'll pass it off to Kevin.

16 MR. KEVIN JONES (BY PHONE): Kevin
17 Jones, Tetra Tech. I agree, David. I think a lot of
18 what we're seeing on the air photos and such are more
19 shallow related. There is potential, I believe, yes,
20 for -- for deep-seated.

21 I would again go back to the detailed
22 design, and -- and, James, you're absolutely right
23 that cuts and fills on areas that are landslide
24 potential are -- have to be considered. And those
25 need to be considered at the detailed design stage for

1 sure.

2 If the preliminary work on the road
3 alignment and where it is and -- and whether it's cuts
4 or fills or whatever would to me indicate some
5 potential for increasing the probability of having a
6 deep-seated landslide in that area, then I would say
7 you would want to further investigate the ground
8 conditions there with a -- a deeper set of bore holes
9 to -- to give you the information that you would need
10 to be able to -- to do a fully accurate stability
11 analysis in that area.

12 MR. JAMES HALEY (BY PHONE): Okay I've
13 got a separate question. This question relates to the
14 possibility of a large landslide occurring in natural
15 terrain in the steep valley side slopes along portions
16 of the route where the valley floor is very narrow.
17 Just the debris -- the debris from a landslide if one
18 (1) were to occur could develop a debris dam and
19 impound water.

20 The west part of the alignment passes
21 through such terrain. Locally, for example, in the
22 vicinity of KP 8.5, 16.5, and 29. And in these areas
23 the terrain stability map -- maps show wide landslide
24 head scarps on the upper slopes.

25 Please can you comment on whether any

1 of these wide scarps represent the back scarps of
2 large historical landslides but have the potential to
3 produce a -- a debris dam on the valley floor if a
4 landslide were to reactivate?

5 MR. DAVID HARPLEY: Dave Harpley.
6 Kevin, did you get that?

7 MR. KEVIN JONES (BY PHONE): Yes, I
8 did, David. Kevin Jones, Tetra Tech. I don't think
9 I'm the person to -- to answer that question frankly.
10 I have not looked at those areas. My focus has been
11 on the permafrost end of things, so I would say I'm
12 probably not the right person to answer that.

13 MR. DAVID HARPLEY: Dave Harpley.
14 That appears to be a question we'll need to respond to
15 later. Later than the hearing.

16 MR. JAMES HALEY (BY PHONE): Thank
17 you. I've got no further questions.

18 THE CHAIRPERSON: Okay. We have legal
19 counsel.

20 MR. JOHN DONIHEE: Thank you, Madam
21 Chair. It's John Donihee. I -- I suspect -- why
22 don't we just get that answer later if we can, and if
23 Canadian Zinc is unable to provide the answer by the
24 end of day 3 then we'll shift it over and make it an
25 undertaking.

1 but for the moment we'll -- we'll
2 simply rely on them to -- to answer it within the next
3 day or so.

4 THE CHAIRPERSON: Mr. Harpley...?

5 MR. DAVID HARPLEY: It's Dave Harpley.
6 No, it's not my expectation that we'll be able to
7 answer it during the period of the hearing. I think
8 it will need to be an undertaking, and obviously I
9 think it will need to be clearly written out so we can
10 fully understand the question.

11 THE CHAIRPERSON: Mr. Cliffe-
12 Phillips...?

13 MR. MARK CLIFFE-PHILLIPS: Hello.
14 Mark Cliffe-Phillips, with the Review Board. Just in
15 follow-up to the response that Kevin gave to the --
16 the previous answer to the first question, from what I
17 understand is that, Kevin, and you can correct me if
18 I'm wrong, and this will be a question to -- to David
19 after.

20 Is if there was areas that were
21 identified where there was any of this deep-seated an
22 -- instability identified that there's a potential
23 that bore hole works may be required.

24 Is there a commitment if there is
25 identif -- if any of these areas were identified

1 during detailed design, that you would undertake to --
2 to do that bore hole work prior to finalizing your --
3 your design?

4 MR. DAVID HARPLEY: It's Dave Harpley.
5 I believe the appropriate commitment would be to do
6 the assessment of requirements during detailed design.
7 And then what comes after that will be related on what
8 -- what is found.

9 So it's not a commitment to actually do
10 the bore holes, it's a commitment to do the assessment
11 and decide whether bore holes are necessary. Kevin,
12 can you just confirm I've got that right?

13 MR. KEVIN JONES (BY PHONE): Kevin
14 Jones, Tetra Tech. Indeed, David, that's what I
15 believe I said exactly.

16 THE CHAIRPERSON: Legal counsel?

17 MR. JOHN DONIHEE: Thank you, Madam
18 Chair, just to -- to make sure there's clarity with
19 respect then to the last question that James asked.
20 That would be undertaking number 3. It was about the
21 landscape -- sorry, the landslide head scarps.

22 We'll provide you with a detailed
23 wording of the question and then the response to that
24 question will be provided as undertaking number 3 in
25 the -- at the appropriate time.

1 --- UNDERTAKING NO. 3: Detailed wording of the
2 question about the
3 landslide head scarps will
4 be provided to Canadian
5 Zinc so an answer can be
6 given as Undertaking No.
7 3.

8
9 THE CHAIRPERSON: Okay. Questions
10 from staff?

11
12 (BRIEF PAUSE)

13
14 MS. CATHERINE FAIRBAIRN: Hi. This is
15 Catherine Fairbairn, with the Review Board. I have
16 two (2) questions. We'll see if there's time for
17 both. The first is about emergencies along the road.

18 So Can Zinc's emergency response plan
19 appears to be primarily about spill containment and
20 management to date. The DAR does also mention that
21 staff will be trained in fire prevention protocols and
22 emergency response procedures, which we also heard
23 about a bit this morning.

24 So my question is, I guess: There are
25 other types of emergencies, like vehicle fires, that

1 we haven't heard as much about during this process.

2 Would Can Zinc commit to an emergency
3 response plan that includes other emergencies?

4 MR. DAVID HARPLEY: Dave Harpley.

5 Yes.

6

7 --- COMMITMENT NO. 4: For Canadian Zinc to
8 commit to an emergency
9 response plan that
10 includes other
11 emergencies.

12

13 MS. CATHERINE FAIRBAIRN: Thanks. So
14 my second question is about access control. Can Zinc
15 has worked with parties to identify some control
16 mechanisms at the barge and lease sites using signs,
17 using a checkpoint, using a journey management system
18 to manage mine traffic.

19 But based on information on the record,
20 there will be some other use of the road, and that has
21 the potential to lead to accidents. So my question
22 is: Has Can Zinc identified any specific or different
23 mitigation for when there might be particularly high
24 non-mine traffic, for example, during traditional
25 harvesting periods?

1 MR. DAVID HARPLEY: It's Dave Harpley.
2 I won't say that we've fully flushed this item out.
3 It is something that we need to investigate a little
4 more during detailed design before we actually go
5 operational.

6 I think the -- the optimum approach
7 would probably be that we have some kind of tracking
8 device beacon or -- or monitoring of every vehicle
9 that basically when they go through the crossing and
10 the checkpoint, you simply stick it on the vehicle,
11 and then they're part of the system, you know where
12 they are. That would be the ideal.

13 We need to work out the details of --
14 of what that might be, but I think you can probably
15 assume that some form of tracking will be implemented.
16 If it's not a -- kind of a -- a -- an automated
17 tracking system, then maybe it'll be a radio-based
18 system.

19 But what we've said from the beginning,
20 basically, is that we want to know where everybody is
21 on the road at all times, no matter who they are.

22 MS. CATHERINE FAIRBAIRN: Thank you
23 for the answers. That's all the staff has.

24 THE CHAIRPERSON: Okay, thank you.
25 Questions from Board members?

1

2

(BRIEF PAUSE)

3

4

MS. SUNNY MUNROE: Thank you, Madam
Chair. This is Sunny Munroe, with the Board -- Board
member. You stated earlier that the road would only
be in operation for certain months of the year. And
you also stated that two (2) of the reasons to build
the road were climate change and requests from
customers, such as proce -- ore processors.

11

Could you please tell me how you're
going to get the ore out during those months when the
road isn't operational? How -- do you stockpile it
somewhere, or how would that happen? The -- the --
they wanted a -- a regular supply. How are you going
to meet that regular supply when the road isn't
operational for those months?

18

MR. ALAN TAYLOR: Yes, it's Alan
Taylor, Canadian Zinc. The mine would be operational
for the entire year and will be producing concentrate
throughout the year. And as it produces the
concentrate at those times of closure, that'll be
stored onsite either in stockpiles or within
containerized units, and at times of opening, those
units will be shipped out.

1 And so it'll be much -- much in -- of
2 an improved scenario from the winter road, because
3 we'll have that additional time, even though there
4 will be some times of closure.

5 MS. SUNNY MUNROE: Just a follow-up
6 question, Madam Chair. What will your customers say
7 about an interrupted supply, even for that short
8 period?

9 MR. ALAN TAYLOR: Alan Taylor,
10 Canadian Zinc. Certainly, it will provide some
11 challenge to the -- to -- to getting it to market, and
12 we'll probably have some associated premium on it that
13 we'll have to work out with our -- with our market.

14 MS. SUNNY MUNROE: Sunny Munroe, Board
15 member. Thank -- thank you.

16 THE CHAIRPERSON: Questions from Board
17 members?

18 MS. BERTHA NORWEGIAN: Bertha
19 Norwegian.

20 I have a question regarding the
21 topography of the -- THE routes that are identified as
22 to which way the roads will go. Can you tell me what
23 section of the all-weather road will be at its highest
24 level, and what is that level?

25

1 (BRIEF PAUSE)

2

3 MR. DAVID HARPLEY: It's Dave Harpley.

4 The highest elevation is the pass
5 between Funeral Creek and Sundog Creek at
6 approximately kilometre 17. I don't offhand know what
7 the exact elevation of that pass is, but that's
8 something that we can look up and provide.

9 MS. BERTHA NORWEGIAN: Thank you.

10 Madam Chair, I just have a couple of more questions.
11 Bertha Norwegian, here again.

12 Can you tell me -- in your
13 presentations, you've talked about delivery of your
14 supplies in convoys. So when you're at the highest
15 level of your -- of your all-season road and you have
16 three (3) trucks going down at decline, how steep
17 would that decline be?

18 MR. ERNIE KRAGT: Ernie Kragt, with
19 Allnorth.

20 As stated earlier, generally our -- our
21 parameters are a maximum of 8 percent, but there is
22 some portions that you are referring to around -- I
23 believe it's kilometre 23, where -- where we see a
24 pitch of -- of 11 percent, I believe. In terms of --
25 of the convoys, there will be a number of trucks and -

1 - and they will be spread out appropriately to -- to
2 ensure they're not -- they're not in close formation
3 in -- in those circumstances.

4 MS. BERTHA NORWEGIAN: Thank you.
5 Bertha Norwegian.

6 Just one (1) more quick question. I
7 was wondering with respect to the soil sedimentation
8 where we're going to be having the bridges, is there a
9 lot -- a lot of karst with -- within the area of where
10 you plan on putting these expansions?

11 MR. DAVID HARPLEY: It's Dave Harpley.

12 I -- I think I can answer this one but
13 if I'm wrong, then Ernie can jump in. But the karsts
14 in the Ram Plateau is roughly between kilometres 55
15 and about 85. And as far as major crossings are
16 concerned, there's a major crossing at fifty-three
17 (53) just before the karst, and there's a crossing at
18 eighty-seven (87) just after the karst on the
19 alignment.

20 There -- having said that, down Sundog,
21 the -- the cliffs of the -- on either side of the
22 valley are made of the same formation in which the
23 karstification occurs in -- in the area, just that
24 we're not interfering with it because we're in the --
25 the bottom of the valley.

1 THE CHAIRPERSON: Questions from Board
2 members?

3

4 (BRIEF PAUSE)

5

6 THE CHAIRPERSON: Okay. Well, thank
7 you for the presentation, and thank you for your
8 questions. We will have a break now for lunch, and
9 it'll be one (1) hour. So we'll try to be back here
10 and ready to go at exactly 12:30 -- or 1:30. Lunch is
11 served in the back.

12

13 --- Upon recessing at 12:20 p.m.

14 --- Upon resuming at 1:33 p.m.

15

16 THE CHAIRPERSON: Okay. We're ready
17 to start the afternoon again. I would just like to
18 let -- let everyone know that there is a response from
19 Canadian Zinc, and it's in regards to Undertaking
20 number 3 from Parks Canada, their question regarding
21 the operation risk assessment.

22

23 (BRIEF PAUSE)

24

25 THE CHAIRPERSON: Mr. Harpley...?

1 MR. DAVID HARPLEY: Yeah, it's Dave
2 Harpley.

3 I've had a chance to confer with Ernie
4 here regarding the intentions of that assessment. And
5 basically, what it amounts to is when we go through
6 the design process and -- and go through the -- the
7 detailed design, primarily that's being done by
8 engineers and scientists. And then the road is built,
9 and preparations are made for operations, but before
10 operations actually start, there's kind of an overview
11 of the whole road by a road supervisor. And
12 obviously, there will be truck drivers involved.
13 There will be monitors involved. There will be
14 maintenance staff involved.

15 So the intention with this kind of
16 operational level risk assessment is that these people
17 would get together before operations actually start.
18 All of them will have actually travelled the road, and
19 inspected conditions, signage, basically everything
20 related to the road just to get familiar with it. At
21 that point, we think it's appropriate to have
22 essentially a -- an operational level discussion of
23 have we got everything right.

24 You know, some things like -- might not
25 be obvious to a designer, such as, did we put the sign

1 in the right place? You know, is -- is a hazard
2 notice in -- in the right location? Instances like
3 that. How we're actually going to work the
4 maintenance crew in this particular location when
5 there's traffic potentially coming.

6 Kind of practical instances like that
7 is what we're in -- we mean by the operational level.
8 And then adjustments would be made to the approach and
9 oversight based on that. And, you know, I -- I think
10 you can imagine this would be an ongoing process.
11 There would be kind of tailgate meetings every morning
12 and something might come up, somebody's observed
13 something where we can make a -- an adjustment that
14 makes it a better situation.

15 So it's -- it would be kind of an
16 ongoing adaptive thing.

17 THE CHAIRPERSON: Okay. Thank you,
18 Mr. Harpley, for your response. Parks --

19 DR. JAMIE VANGULCK: Madam --

20 THE CHAIRPERSON: -- Parks Canada?

21 DR. JAMIE VANGULCK: Thank you, Madam
22 Chair. Jamie Vangulck, for Parks Canada.

23 And I'd just like to follow up on the -
24 - on that response. One (1) additional information
25 that we -- we'd be interested to know about is how the

1 operational risk assessment differs from the risk
2 assessment that was completed as part of this
3 environmental assessment process and the risk
4 assessment that will be completed as part of the --
5 the road design?

6 MR. DAVID HARPLEY: It's Dave Harpley.
7 So, as I just described, the risk assessment that we
8 have conducted and the risk assessment that we will
9 revise during the detailed design would be undertaken
10 by primarily engineers and scientists, whereas the
11 operational risk assessment is more geared towards the
12 people that are actually operating and -- and
13 overseeing the road at a practical level.

14 DR. JAMIE VANGULCK: Thank you very
15 much, Madam Chair. No -- no further follow-ups.

16 THE CHAIRPERSON: Okay, thank you. We
17 are now ready to go on with the presentations. Our
18 next presentation is from Oboni Riskope. And I would
19 just like to read an introduction to their
20 presentation.

21 "The Review Board identified three
22 (3) key lines of inquiry in the
23 terms of reference for the
24 environmental assessment of the
25 Prairie Creek all-season road in

1 September of 2014. One (1) of the
2 key lines was the effects of
3 potential accidents and
4 malfunctions.
5 To help evaluate the impacts of
6 potential accidents and
7 malfunctions, the terms of reference
8 required Canadian Zinc to conduct a
9 risk assessment using best
10 practices, including components,
11 systems, hazards, and failure mod --
12 mods -- modes.
13 An assessment of the likelihood and
14 severity of each risk and details on
15 site-specific contingencies for high
16 risk areas were to be identified.
17 In the Review Board's reason for
18 decision on the adequacy of the
19 Developer's Assessment Reports
20 reasons for decision issued in
21 December 2015, the Board concluded
22 that the risk assessment undertaken
23 by Canadian Zinc and the Developer's
24 Assessment Report and DAR addendum
25 was inadequate and did not allow for

1 a meaningful review by parties of
2 the Review Board.

3 The risk assessment is a key
4 component for assessing the key line
5 of inquiry on the affects of
6 potential accidents and
7 malfunctions. The Review Board also
8 requires a firm understanding of the
9 methodology and approach using the
10 risk assessment.

11 As a result, the Review Board
12 determined that it would contract an
13 independent third party through a
14 request for proposal process. Oboni
15 Riskope was chosen by the Board to
16 complete an independent risk
17 assessment to fulfill Canadian
18 Zinc's outstanding requirement of
19 the terms of reference.

20 Oboni Riskope was to be completely
21 independent, and Board members and
22 staff had no input into the process
23 of materials produced beyond what
24 was outlined in the scope of work.
25 Details on the final scope of work

1 of the risk assessment were provided
2 in a letter to parties in February
3 of 2016 after comments from the
4 Developer. The risk assessment was
5 to be based solely on the evidence
6 on the Review Board's public record
7 for the Prairie Creek all-season
8 access project as well as
9 Information Requests from Oboni
10 Riskope that were limited to
11 Canadian Zinc.
12 The intent of the risk assessment is
13 to give the Board and parties the
14 ability to better inform their
15 position on the potential risks of
16 the project from accidents and
17 malfunctions which the Board felt
18 was inadequately addressed in the
19 material presented in Can Zinc's DAR
20 and DAR addendum.
21 Canadian Zinc has been given the
22 opportunity to review and comment on
23 the independent risk assessment.
24 The Board has provided an
25 opportunity for parties to comment

1 on the risk assessment within their
2 technical reports as well as at the
3 public hearings.

4 The Oboni risk assessment does not
5 represent the position of the Board
6 on the risks of the project or the
7 significance of any impacts
8 identified within the risk
9 assessment, but is one (1) piece of
10 evidence that will inform the
11 overall determination of the Board's
12 Environmental Assessment decision."

13 I will now like for Oboni Riskope to
14 introduce themselves and to provide their
15 presentation, which will be followed by questions from
16 Can Zinc and other parties. And I believe they're
17 online right now.

18 DR. FRANCO OBONI (BY PHONE): Yes,
19 Madam Chair, we are online. Can you hear us properly?

20 THE CHAIRPERSON: Yes, we can.

21

22 PRESENTATION BY OBONI RISKOPE:

23 DR. FRANCO OBONI (BY PHONE): Hello.

24 Okay. Great. Great. Thank you very much. Thank you
25 very much -- very much for this introduction. I am

1 Franco Oboni, the white-haired guy from the first
2 slide. Cesar and I are a father-son team. We are the
3 principle and founders of Riskope.

4 Riskope bears the name that -- it's
5 really aims to its -- to its objectives. We are like
6 a microscope for risks, so we are geared towards
7 understanding what the risks of the project for an
8 operation are.

9 We are descendants of a long lineage of
10 mountaineers. Our ancestors lived in the Alps in the
11 mountains. There were forestry guys. There were
12 miners. And they used to travel down to the valley to
13 bring their goods. Many of our ancestors
14 unfortunately died of accidents and diseases from
15 their hazardous enterprising. Other -- the difference
16 between the ones that lived and the ones that died was
17 how they took into account hazards and risks.

18 We still feel a very strong link with
19 our ancestors, the environment, and the mountains
20 where our families used to live. Actually, when
21 walking along our -- in our mountains, the regional
22 mountains in -- in between Italy and Switzerland,
23 people recognize us, because they remember our
24 ancestors faces and looks, and apparently we look like
25 them.

1 That makes us feel honoured and unique,
2 yet belonging to a universal society. Our purpose in
3 life is to bring reason and clarity into projects,
4 avoid the mistakes that our grandfathers and society
5 suffered. And I would like to stress here that we
6 understand that the road is a vital element in the
7 development of a community.

8 We are not against any project. We are
9 against projects that may create excessive risk for
10 the environment, and people, and the legacy that we
11 will leave behind. So as Madam Chair said, we were
12 asked to perform a risk assessment that would answer
13 very specific questions on a road that doesn't exist
14 yet -- on a road that doesn't exist yet.

15 The only available data where -- and I
16 get the drawings of less than 15 percent of the layout
17 and available pictures. We asked several times and we
18 were answered each time that the drawings were
19 representative of the whole project. We made a number
20 of assumptions, because there were data gaps in -- in
21 -- that were provided to us in the public record.

22 We have made those assumptions and we
23 have stated that -- we have stated that --

24 THE CHAIRPERSON: Dr. Oboni, if I
25 could interrupt you, please? Dr. Oboni?

1 DR. FRANCO OBONI (BY PHONE): Yes?

2 THE CHAIRPERSON: If I could interrupt
3 you.

4 DR. FRANCO OBONI (BY PHONE): Sure.

5 THE CHAIRPERSON: That we have
6 translation going on in the hearing, and if you could
7 slow down in speaking. And then we have also people
8 that are following on the presentation, so when it
9 comes time to go to the next slide, it has to be done
10 manually.

11 So if you can just ask and say, Next
12 slide. Thank you.

13 DR. FRANCO OBONI (BY PHONE): Yeah,
14 sure. Sorry, Madam.

15 So we are at the end of slide number 4,
16 and I will slow down my flow. Thank you. Let's go to
17 slide number 5 now.

18 As the project was not really visible
19 on site, at least elevations were not visible, because
20 there were no full stakes, vehicles are not visible
21 on-site with the assurance that the drawings we have
22 were representative of the whole project, we accepted
23 the mandate that was given to us by the Board because
24 we felt like a site visit would not really deliver any
25 additional useful information for the type of analysis

1 we were requested to perform.

2 That being said, the project change at
3 least -- and we skip now to slide number 6 -- the
4 project changed several times. This is a little
5 sample of cross-sections at the same kilometre. It's
6 thirty-five (35) plus one ninety (190). And as you
7 can see, at different dates the layout of the road
8 shifted from the mountain towards the valley towards a
9 different situation again in a later date.

10 These changes are obviously creating
11 different risks at that specific kilometre, and this -
12 - the fact that the project changed several times only
13 increases the uncertainties that are still there in
14 our assessment.

15 Let's skip to slide number 7. So we
16 undertook our study of the project with the utmost
17 respect and the best interests of every party
18 involved. Again, we are not against the project. We
19 are against projects that have too big risks for the
20 people. So we are offering our experience and
21 perspective to those who want to listen in our
22 position of third party experts.

23 Now, you have heard -- I'm now at slide
24 8. You have heard C&Z comments this morning.
25 Needless to say, we have a solid rebuke to each one of

1 them. But to be professional and constructive, I
2 would like now to jump straight to slide number 30,
3 please. Tell me when you are there.

4 THE CHAIRPERSON: We're there.

5 DR. FRANCO OBONI (BY PHONE): Okay.
6 So slide number 30 starts with the major conclusions
7 of our study. The road is too narrow. At 5 metres
8 with some sections at 4 metres -- meaning 4 metres
9 minimum -- it doesn't attain C&Z's own defined
10 accident tolerance criteria with the intended traffic
11 on -- of concentrate trucks back and forth from the
12 mine.

13 From the cross-sections we are seeing,
14 we don't see any room for installing serious barriers
15 protecting trucks from falling out -- I use falling
16 out quoted because in one (1) of the report that was
17 written for Wolverine Mine when a 20-tonne spillage
18 occurred -- from falling out and the environment from
19 being damaged. You will see it briefly later, some
20 pictures of this type of accident.

21 Of course, should private traffic be
22 allowed, there will be very dire consequences,
23 especially on lighter vehicles. And here we are very
24 concerned about the youth of the First Nation that
25 will go to the camps, that will go doing their own

1 activities.

2 Another major conclusion of our study,
3 the time for rescue and the damage, collateral damage,
4 of each ac -- accident has been grossly
5 underestimated, and we will discuss that in a second.

6 We go now to slide 31. Unless serious
7 barriers are installed, vehicles will be able to run
8 out of the road, possibly into water courses, down
9 ravines and sensitive areas. In this picture, you see
10 what happens to a barrier that is built with sticks
11 planted in the ground.

12 In a road that has only 5 metres wide -
13 - width, those stakes have to be put so -- so near to
14 the trajectory of vehicles that they will be taken
15 down most of the time. As a matter of fact, the code
16 that has been used for the road, code for forestry
17 traffic again, has a note that say that the 5 metres
18 wide road doesn't allow for any slippage or any
19 deviation from the trajectory. So in those
20 conditions, any promise about building a barrier is
21 purely cosmetic, or psychological.

22 If we go now to slide number 32, there
23 are locations where scenarios like the one depicted in
24 the picture can occur along the road, or worse along
25 water courses. Please, note that in the -- in the

1 accident depicted here, there was a spill but no harm
2 to the driver. So there is no correlation -- no
3 direct correlation between an accident if there's a
4 spill, or an accident that has harm to the driver, or
5 a death.

6 In slide number 33, you see a typical
7 location that we have defined as consequence Class 9.
8 I will not get into the details of this because
9 everything is written in the report very transparently
10 for those who want to understand.

11 Here you have 5 metres high downslopes,
12 a bridge which is 6 metres high, 4 to 5 metres high
13 abutment, downslope 9 metres high around kilometre
14 28.635. This is typically an area that we have
15 considered as a Class 9, so the highest type of
16 consequence along the road.

17 If we go to slide number 34 now, let's
18 look at the missing evaluations that should be covered
19 when talking about risks and consequences by the
20 Proponent. We have seen nowhere an evaluation of the
21 impact of retrieval of vehicles and spilled cargo at
22 the bottom of such a slope in the aftermath of an
23 accident.

24 There is no words anywhere about the
25 access needed to get the vehicle out. There is no

1 evaluation of disturbed surface during rescue,
2 containment, and retrieval operations. There is no
3 discussion anywhere about the time required for heavy
4 cranes to reach the location. I don't think they can
5 carry -- they can take out a 60-tonne truck from the
6 ravine with a Ford F150.

7 And also there is no explanation in the
8 report of the Proponent on how the bottle neck that
9 will create once a major accident of that kind occurs
10 will be actually managed in the day to follow. So
11 everything that is depicted in the reports sounds, and
12 we have written this in our report, like a rosy
13 scenario.

14 Again, we are not saying this project
15 should not be built. We are not saying this project
16 is impossible. We are saying that this project
17 requires, and we have written this in our report, very
18 serious housekeeping and thoughts on mitigations.

19 So if we go now to slide number 35, we
20 have to note that there was a "final cut," I put that
21 in -- in -- between quotes, of stratifications only
22 very late. We don't even know if that's -- if that
23 final cut is really the final as there is still a
24 design that is unfinished. And there are
25 uncertainties on the final layout.

1 We have to note that risks on the road
2 do not develop by kilometre but develop -- they
3 develop by what are called -- commonly called black
4 spots. So areas where a number of construction
5 details, design details, topography, and even climate
6 get together to make an area particularly risky.

7 And also, of course, the risk has -- it
8 has been pointed out earlier, depends not only on the
9 probability of an accident, but on the consequence.
10 So a black spot in a risk assessment could be a spot
11 where the road is just as nice as everywhere else, but
12 the consequence, the potential for consequence, is
13 extremely high.

14 So in order to get a metre-by-metre
15 risk assessment, another complete review, a complete
16 overhaul of what we have done should be made. Whether
17 this is necessary or not, it's not our tasks -- task.
18 It's not our -- our objective to say. It's not our
19 duty to say.

20 But if we work only by certifications
21 and not metre by metre, the reason is that there were
22 fragmentary data, and the final cut of certifications
23 is still not known.

24 The slopes, manmade slopes, have not
25 been defined yet. And we know by experience on mining

1 roads around the world that manmade slopes can create
2 large risks and be responsible for a number of
3 mishaps.

4 So let's go to slide 37 now.

5 Continuous -- as I say, continuous variation along the
6 roads lead to continuous variation of likelihood of
7 accidents and their potential consequence. Hence, the
8 variation of consequence classes within any segment of
9 the road.

10 We believe that it is vital that any
11 further attempt to collateralize risks along the project
12 be carried out once the project will be clearly
13 defined and there will be no uncertainty on the
14 reference drawing.

15 Just to -- if we go to slide 38, we are
16 showing here a beautiful, world-class mining access
17 road where, despite all the efforts, rocks are flying
18 down slopes. And should that rock that you see on
19 this -- on the -- on the road have fallen behind the
20 blind car, an accident could be possible. So this
21 occurs in a road that has been built following higher
22 standards, by far higher standards, than the one that
23 are proposed in this case, the Prairie Creek access.

24 We would also like to -- to stress one
25 (1) point is that roads that are built by having a too

1 optimistic attitude often lead to long-term legacies
2 like you see here.

3 This slopes was built in an excess of
4 optimism, and ten (10) years after it was opened there
5 was even discussion to abandon the road due to
6 numerous accidents and build a tunnel. Considering
7 the cost of a tunnel, you can imagine that the mine
8 that doesn't have a very long duration would leave
9 behind a very unpleasant legacy.

10 Finally, slide number 40, we would like
11 to address the risks during construction phase.
12 During construction phase, the declared traffic will
13 be very little compared to the service years. There
14 will be no concentrate loads.

15 We have been told during the
16 development of the risk assessment -- and it is in the
17 public record -- that safety and rescue means will be
18 in place as during the service time of the mine. And
19 because risk is probability multiplied by
20 consequences, risks during the construction phase will
21 be very significantly smaller because of the less
22 traffic, less consequences, and same level of rescues.
23 Hence, we assumed -- and it is in assumption number 6
24 in our report -- that the risks will be very small
25 compared to the service year.

1 I will close this by showing you a
2 traditional cup that is our -- in our tradition in the
3 Alps it's called the friendship cup and it's something
4 that is normally filled with a very special brew of
5 coffee and spices and our ancestors have used this for
6 centuries to share a sign of friendship and respect.

7 We are very sorry we are not there. If
8 we would have been there we would have brought it up
9 and we would have offered it at this time. So as I
10 said earlier, we are ready to respond -- to -- to
11 reply to any question and we will go back and forth in
12 our presentation, because I think we have covered all
13 the possible questions you will have.

14 Thank you very much for your attention.

15

16 QUESTION PERIOD:

17 THE CHAIRPERSON: Thank you.
18 Questions to the presentation, Dehcho First Nations?

19 MS. CARRIE BRENEMAN: In your report
20 you outlined what the --

21 THE CHAIRPERSON: Please state your
22 name when you speak.

23 MS. CARRIE BRENEMAN: Sorry, Carrie
24 Breneman, Dehcho First Nations. In your report you
25 outline -- you know, you were asked to perform a risk

1 assessment given the information provided by Canadian
2 Zinc. Do you have any recommendations of -- or could
3 you kind of summarize the recommendations of what
4 could be done to reduce risks to the road?

5 DR. FRANCO OBONI (BY PHONE): Yes, we
6 can browse through a series of recommendations. The
7 first one would be to consider the high risk areas and
8 provide serious bias in order to avoid vehicles to get
9 out of the road in areas that have high consequences.

10 That, unfortunately, will require,
11 given the weight, and the size, and the speed of the
12 trucks to go to berms so mounds of earth because as I
13 showed you earlier, guardrails are basically just a
14 psychological barrier and not a physical barrier. And
15 that unfortunately requires widening considerably the
16 infrastructure of the road.

17 But that's something that has to be
18 considered. That is a major point. The second point
19 is something we cannot discuss at this point, because
20 there is no project, there is no drawings, but it's
21 certainly the -- the manmade slopes and their
22 protection.

23 Again, C&Z has -- has explained that
24 they will put gabions and support, but gabions are
25 okay when they are built as a massive structure,

1 especially if they are there to protect from rock
2 falls. If they are just a narrow pile of -- of
3 gabions, one (1) on top of the other, again they might
4 work psychologically, but they're not physically
5 sufficient. So there is -- there is a number of -- of
6 elements that can be brought into this discussion.

7 They have to be looked at in terms of
8 compromise. You can -- you never have a road that has
9 zero risk. We are all aware of that. It is worthless
10 to invest a lot of money in one (1) mitigation if
11 there are other elements that might have higher risk
12 that are not mitigated. So it's a -- it's a
13 continuous thought about what can one do and what
14 benefits it would bring to the project.

15 That's why using risk assessments that
16 are imprecise and fuzzy, that qualify likelihoods with
17 small, medium, large, cannot help in defining a
18 proper, reasonable, sustainable mitigation plan. Does
19 that cover your question?

20 MS. CARRIE BRENEMAN: Carrie Breneman,
21 Dehcho First Nations.

22 In your presentation you mention that
23 you think the road is -- is too narrow. Do you have
24 any recommendations on what you think would be an
25 acceptable width for the road?

1 DR. FRANCO OBONI (BY PHONE): Well,
2 the -- the code that has been used by C&Z says that
3 the 5 metres road doesn't allow for any slippage or
4 any deviation from the standard trajectory, and they
5 give that a strict minimum even for forestry.

6 I remind you that if a truck --
7 forestry truck loses his cargo down a ravine, it's
8 only scattering wood. Whereas if a concentrate truck
9 falls off the road, it will sooner or later
10 contaminate the environment with concentrate. So I
11 would say that probably at least 1 metre more and not
12 -- no section at 4 metres wide is a minimum.

13 But that has to be studied again. It
14 has to be carefully weighed in comparison to what the
15 risk, gain if you want, the risk mitigation is.

16

17 (BRIEF PAUSE)

18

19 DR. FRANCO OBONI (BY PHONE): Does
20 that cover your question?

21 MS. CARRIE BRENNEMAN: Yeah. Carrie
22 Breneman, Dehcho First Nations.

23 I don't see it here in your
24 presentation but could you describe some of the --
25 your -- your results in the risk assessment of -- I

1 think you called it vehicle excursions, or how many
2 vehicles -- I -- I seem to remember in your report
3 that you had some sort of assessment of how many
4 vehicles you thought would go off the road in a year,
5 or over a twenty (20) year period?

6 Could you explain how --

7 DR. FRANCO OBONI (BY PHONE): Yes, in
8 the --

9 MS. CARRIE BRENEMAN: -- like the
10 numbers that you came up with, and how you came up
11 with those numbers?

12 DR. FRANCO OBONI (BY PHONE): Yes,
13 absolutely. Can you, please, move to slide number 17?
14 Tell me when you are there.

15

16 (BRIEF PAUSE)

17

18 DR. FRANCO OBONI (BY PHONE): Hello?

19 THE CHAIRPERSON: We're at slide 17
20 right now.

21 DR. FRANCO OBONI (BY PHONE): Perfect,
22 thank you. So we -- we use a methodology that is
23 described in our report at Figure number 25. The
24 methodology starts by looking at the probability of
25 occurrence of say accident, in this particular case an

1 off-road excursion, due to different details of the
2 particular situation of the stretch under
3 consideration.

4 These numbers come out of experience
5 based on other projects we have analyzed in the past,
6 and have received a long-term proof. So they are
7 semi-empirical, so due to experience and due to
8 allowances. The way these numbers are --

9 THE CHAIRPERSON: Dr. Oboni, could I
10 just interrupt, please. Are we talking on slide 13?

11 DR. FRANCO OBONI (BY PHONE):
12 Seventeen (17) --

13 THE CHAIRPERSON: Okay --

14 DR. FRANCO OBONI (BY PHONE): --
15 seventeen (17).

16 THE CHAIRPERSON: -- seventeen (17).
17 Seventeen (17).

18 DR. FRANCO OBONI (BY PHONE): Seven
19 (7) -- I'm -- I'm talking -- now I'm -- seventeen (17)
20 I will get there in a second. I'm explaining the
21 principle of the analysis.

22

23 (BRIEF PAUSE)

24

25 DR. FRANCO OBONI (BY PHONE): Can I --

1 can I continue?

2 THE CHAIRPERSON: Yes, please, go
3 ahead.

4 DR. FRANCO OBONI (BY PHONE): Thank
5 you very much, Madam Chair.

6 So the way these different
7 probabilities are combined as being shown on Figure 25
8 of the report, we have given the formula that comes
9 out of the book the date of 1982 written by Mr. Ang
10 and Mr. Tang. And the book is called, 'Probabilities
11 in Engineering', and it has been used extensively by
12 scores and generations of engineers since it was
13 written.

14 There is no mystery here. The formula
15 is shown. The principle is shown very clearly in the
16 report. So you start from details -- detailed
17 probability due to a single element of the road, for
18 example, the curve, for example, the slope, for
19 example, the -- the general profile, and you cumulate
20 those using that formula in order to get the
21 probability of accident at that specific location.

22 Then this is length adjusted for the
23 section that is comparable. So within -- within a
24 specification we looked at what was the length we
25 should apply that specific probability. And then we

1 combine that with the number of trucks that would go
2 loaded in one (1) direction, unloaded in the other,
3 and we finally reached a number of predicted accidents
4 per location, length adjusted, of course.

5 Now, to that, in our report we added
6 the predicted number of accidents due to encounters,
7 unfortunate encounters, with natural hazards. And the
8 natural hazards were derived by using public record
9 data related to the probability of occurrence of each
10 one (1) of them at the specific kilometre.

11 All that gives when you total it along
12 the whole road the predicted number of accidents.
13 Accidents that will have different consequences at
14 different kilometres, of course, because the road is
15 not on a flat, uniform terrain but is in the mountains
16 with different slopes next to it and different
17 environments next to it.

18 We have defined nine (9) classes of
19 accidents. And of nine (9) -- of those nine (9)
20 classes of accidents, only the top three (3) are
21 considered to be serious to very serious, from a
22 environmental point of view because, as I said
23 earlier, there is no correlation, no direct
24 correlation between an environmental accident and a
25 casualty on a truck.

1 If you recall the slide I showed you
2 earlier, the truck that rolled down the snow -- snowy
3 slope, the driver came out unscathed. So tha -- all
4 that is a number of serious to very serious accidents
5 that we then wanted to ensure made sense with other
6 roads.

7 So what we did was to work with a --
8 with a yardstick. In other words, we decided to
9 compare our results for Prairie Creek to other roads
10 that would not necessarily be identical precisely to
11 understand how far or how -- how near we were to each
12 one of those roads.

13 We have insisted many times in our
14 report that our data are confidential, so we cannot
15 reveal the names simply because this road kills
16 people. And, in some cases, there are still legal
17 proceedings going on, so we cannot tell you the name
18 of the owner. We cannot tell you where it is exactly.
19 But that's -- I'm sure everybody can understand if
20 they want that point.

21 So now if you go to slide number 18 you
22 see that road number 1 -- here we can tell you the
23 name of the road. It is the Grand San Bernard
24 international tunnel access road between Italy and
25 Switzerland. As you can see, a wide, beautifully

1 paved road with very well-anchored guard rails into
2 concrete beams that are in the ground.

3 And we used only public bus accidents
4 to ensure comparing high standards of care of the
5 details and regular checks of drivers. So by
6 population, that is comparable to what Canadian Zinc
7 has said their drivers and their vehicles will be.

8 Road number 2 is a private mine access
9 road. We cannot tell you who the owner is, but it's a
10 Canadian major company. And here as well, we used
11 only private bus accidents where -- to -- to ensure
12 again compatibility of this population of drivers and
13 vehicles with equally checked and monitored future
14 traffic at Canadian Zinc road.

15 At slide number 20, you see one (1) of
16 the slopes above the same road number 2. And then if
17 we go to slide number 21, we see a third example which
18 is a private mine access road. Cannot tell you who
19 the owner is, but it's a very reputable company that
20 you all know.

21 And we took here only a highly
22 sophisticated fleet of acid tankers to ensure again
23 that the vehicles and the drivers were at least as
24 checked as the ones that Canadian Zinc will eventually
25 put in service on the road.

1 So if we go to slide number 22, you see
2 the results. Look at the blue bars for the moment,
3 please, only. You have road number 1, road number 2,
4 road number 3. So road number 1 is the left picture,
5 road number 2 is the right picture, road number 3 is
6 the one that you have seen in the prior page.

7 And what you see here is that
8 basically, if we consider the same life duration,
9 service life duration, for Canadian Zinc Prairie Creek
10 Road for the others, road number 3 would have
11 approximately, let's say, twenty (20) serious to very
12 serious accidents -- so basically, one (1) per year.
13 Let's make it simple.

14 And our report, our risk assessment,
15 found that the serious to very serious accident
16 numbers to be expected on Prairie Creek would be
17 between twenty (20) -- sorry, between fifteen (15)
18 and, let's say, thirty (30) to make it round. So it
19 would encircle that road number 3.

20 So we felt very comfortable about that,
21 because road -- road number 3 doesn't have bridges,
22 doesn't have the harsh winters that -- and -- and
23 darkness that Prairie Creek Road will have, but has
24 other hazards that make it actually, in our mind,
25 comparable.

1 Now, when Canadian Zinc says and their
2 engineers claim that our risk assessment is wrong by -
3 - because it has ten (10) times more accidents than
4 what it should have compared to forestry roads in BC -
5 - and we will talk about that if you ask me a question
6 -- you can see that what that means, what that
7 statement means is that our results should be at the
8 end of the two (2) black arrows.

9 That means that, following this
10 statement that CNZ (sic) has made, the -- their
11 unpaved, 5 metres winter-summer dark road, unpaved
12 road, should have, in their mind, as many accidents as
13 those beautiful paved 8 metres or more incredible,
14 well-designed and well-built roads elsewhere in the
15 world. And that, I'm sorry, I find it totally out of
16 reality.

17 Does that reply your question?

18 MS. CARRIE BRENNEMAN: Carrie Breneman,
19 Dehcho First Nations. So just to clarify, the slide
20 that you have up, the minimum, is -- is that accidents
21 per year, or is that accidents over the course of the
22 lifetime of the road?

23 DR. FRANCO OBONI (BY PHONE): Those
24 are accidents -- serious to very serious accidents
25 over the life of the road -- the life of the mine,

1 actually.

2

3 (BRIEF PAUSE)

4

5 MS. CARRIE BRENNEMAN: Carrie Breneman,
6 Dehcho First Nations. We understand and support
7 community's positions in favour of the Canadian Zinc
8 all-season road. We heard lots of support from
9 community members yesterday. Oboni's presentation on
10 risk assessment highlights the level of uncertainty
11 that still remains with regards to the all-season road
12 risks -- risk assessment on accidents and
13 malfunctions.

14 We affect -- we -- DFN expects that
15 employment opportunities will arise out of this
16 project, and this means that our members will be
17 working on this road, and their safety is obviously
18 really important to us. We understand that there are
19 potential for serious impacts could come out of this
20 road.

21 We would like to ask the Board for a
22 measure that before -- that detailed road design and
23 associated risk assessment are required for review and
24 approval as -- or are required for review and approval
25 for the land use permit and water licence.

1 THE CHAIRPERSON: Legal counsel...?

2 MR. JOHN DONIHEE: It's John Donihee,
3 for the Board. Thank you, Madam Chair. Ms. Breneman,
4 I -- I'd just like to suggest that DFN has a -- an
5 opportunity to make its own presentation to the Board.
6 And perhaps your recommendations about what you would
7 like to see the Board do would be better presented
8 then than in -- in what at the moment, really, is just
9 a question and answer period.

10 MS. CARRIE BRENEMAN: Carrie Breneman,
11 Dehcho First Nations. Sure, that's fine.

12

13 (BRIEF PAUSE)

14

15 THE CHAIRPERSON: Questions, Dehcho
16 First Nations?

17 MS. CARRIE BRENEMAN: Carrie Breneman,
18 Dehcho First Nations. We're done with our questions.

19 THE CHAIRPERSON: Questions,
20 Environment Canada?

21 MR. BRADLEY SUMMERFIELD: Thank you,
22 Madam Chair. It's Bradley Summerfield, with
23 Environment and Climate Change Canada. We have no
24 questions.

25 THE CHAIRPERSON: Questions from

1 Fisheries and Oceans Canada?

2 MS. VERONIQUE D'AMOURS GAUTHIER: Than
3 you, Madam Chair. Veronique D'Amours Gauthier, with
4 Fisheries and Oceans Canada. We don't have any
5 question at the moment. Thank you.

6 THE CHAIRPERSON: Questions from the
7 Government of the Northwest Territories?

8 MS. LORRAINE SEALE: Lorraine Seale,
9 Government of the Northwest Territories. No
10 questions.

11 THE CHAIRPERSON: Questions from
12 Indigenous and Northern Affairs Canada?

13 MR. MIKE ROESCH: Mike Roesch, for
14 INAC. And we have no questions. Thank you.

15 THE CHAIRPERSON: Questions, Liidlii
16 Kue First Nation?

17 CHIEF JERRY ANTOINE: Masi. This is
18 Chief Gerald Antoine. At this time, I'd like to say
19 hello to Dr. Franco Oboni and, also, his son, Cesar,
20 for doing this independent assessment. It gives us an
21 idea from an independent view as to the information
22 that has been presented to Canadian Zinc or by
23 Canadian Zinc.

24 I just wanted to let Dr. Franco and
25 son, Cesar, know that the hearing is being held here

1 in the Dene territory. We have -- it's being held
2 here in the Liidlii Kue, which is at the confluence of
3 two (2) major rivers. It's unfortunate that you were
4 not able to be here.

5 So I just wanted to -- before I ask a
6 question, I just wanted to share this, just so that
7 way, you have an understanding where we -- we are and
8 where we're coming from. The two (2) rivers is Dehcho
9 and also Naacho De. The English word -- name for
10 these two (2) rivers is the Mackenzie and the Liard,
11 and we're right at the confluence of that river, and
12 this is where Liidlii Kue is here.

13 And I just wanted to also let you know
14 that up river, we also have another community, and
15 that's the -- the Nahanni community. And I just
16 wanted to let you know that we have Chief Peter
17 Marcellais and his -- some of his representatives
18 here, just to let you know that we're both in the
19 room.

20 And so I have our Liidlii Kue land
21 manager who -- who is going to be asking the question.
22 Masi.

23 MR. DEAN HOLMAN: Thank you -- thank
24 you, Chief Jerry. Madam -- Madam Chair, Dean Holman
25 here.

1 The question is to the -- to Riskope.
2 In your -- in your opinion, is there adequate
3 information to measure the likelihood of a rollover
4 and possibly a spill into specifically Funeral -- the
5 Funeral Creek area, Sundog Creek, and the Tetcela
6 River?

7 DR. FRANCO OBONI (BY PHONE): If we
8 have had the final plans, we would have a final answer
9 on risk assessment. At this point, we don't have the
10 full length of the stretch, so there is uncertainty
11 left. But we could certainly go way farther in the
12 assessment if we had full design of those sections.

13 MR. DEAN HOLMAN: Thank you. I'm just
14 wondering if we can basically make that as maybe a
15 measure to the Board to include Riskope into further
16 investigations into accidents depending on, you know,
17 the level of information that's provided throughout
18 the proceedings.

19 THE CHAIRPERSON: Mr. Cliffe-
20 Phillips...?

21 MR. MARK CLIFFE-PHILLIPS: Just to --
22 Mark Cliffe-Phillips, here with the Review Board.

23 Just to follow up on the similar remark
24 that John Donihee, our legal counsel, provided. If
25 you could provide any recommendations to the Board

1 during the presentation that you'll be giving on -- on
2 this topic, it would be preferable at that time than
3 in this question-and-answer period. Thank you.

4 MR. DEAN HOLMAN: Thank you for that.
5 Again, we would -- LKFN would just like to express,
6 and -- express concerns on road safety. And in terms
7 of operators and employment opportunities there, it --
8 we're -- we're definitely taking this into serious
9 consideration. We also support what DFN was saying in
10 terms of their quest -- the line of questions.

11 THE CHAIRPERSON: Mr. Holman, was
12 there a question in there, or that was just a comment?

13 MR. DEAN HOLMAN: Yeah, that was just
14 a comment, just to -- for -- for the record. No more
15 questions, thank you, Madam Chair.

16 THE CHAIRPERSON: Questions from
17 Nahanni Dene Butte Band?

18 MR. GARTH WALLBRIDGE: Thank you,
19 Madam Chair. Garth Wallbridge, legal counsel for the
20 band. Dr. Oboni -- through you, Madam Chair,
21 questions for the presenter.

22 I've been asked -- I'm sitting at a
23 table here, sir, in Fort Simpson with the Chief and
24 two (2) of the councillors. In the room, there's
25 twelve (12) or fourteen (14) citizens of the Nahanni

1 Butte Dene Band, which is about 25 percent of the
2 population of that community have travelled into this
3 larger community for the week to be present to
4 understand where we're at.

5 For you, sir, you may not be aware,
6 through the week it has been obvious, and it's -- it's
7 certainly my client's position that they support the -
8 - the road and the mine. So I preface my remarks with
9 that. I've been asked by the Elders and by the Band
10 Council, the Chief and Councillors present, to advise
11 you that we take issue with the -- the fact that you
12 did not come to the community.

13 In your report, you -- and I don't want
14 to be pejorative, but you tried to explain it away by
15 saying, There's just not enough information known at
16 this point to -- for you to find value in -- in
17 coming.

18 My question is, who determined that you
19 would not come to Nahanni Butte?

20

21 (BRIEF PAUSE)

22

23 DR. FRANCO OBONI (BY PHONE): Hello?

24 THE CHAIRPERSON: Yes, Mr. Oboni,
25 there was a question.

1 DR. FRANCO OBONI (BY PHONE): Yes.

2 That question was -- the -- the condition was part --
3 very clearly in the scope of work we received, and as
4 I said earlier, given the specific data and the
5 conditions of the project development, we accepted
6 that condition.

7 So it's not like it was imposed to us
8 and we -- we had to accept it. We read the scope of
9 work. We thought very carefully about it, and we
10 decided to accept the mandate, because we thought that
11 with the data available and the lack of elements on
12 the -- on the ground, a desktop exercise will be
13 sufficient at this point to make any determination.

14 This being said, if a second phase
15 would occur, it would be great and very interesting to
16 be there to meet with the Elders, to eat -- to hear
17 their point of view, and -- and to actually be able to
18 see stakes, and altitude profiles, and some sections,
19 the most critical sections, materialize on site.

20 MR. GARTH WALLBRIDGE: Thank you, sir.
21 Garth Wallbridge, again. Excuse me, but at the
22 beginning of your comments just now, I wasn't clear --
23 just as the microphones and time lags, perhaps of a --
24 of a split second, if you in fact were able to answer
25 directly the direct question, which was: Who

1 determined you would not come to Nahanni Butte?

2 DR. FRANCO OBONI (BY PHONE): The
3 scope of work -- well on that subject.

4 THE CHAIRPERSON: Staff? Mr. Cliffe-
5 Phillips...?

6 MR. MARK CLIFFE-PHILLIPS: Hello, Mark
7 Cliffe-Phillips, with the Review Board. I -- I
8 apologize for having my back to -- to you, but --

9 MR. GARTH WALLBRIDGE: No, that's
10 fine. I -- I appreciate it. If you are on the
11 microphone, it's helpful to the people in the back of
12 the room. Thanks.

13 MR. MARK CLIFFE-PHILLIPS: Okay. So
14 to -- to answer your question and to follow up on Mr.
15 Oboni's point that they -- the scope of work that was
16 developed by the Review Board, so the -- the Review
17 Board did develop that scope of work, wasn't explicit
18 in -- in terms of asking for any site visits or -- or
19 visits to the community.

20 The request that was put forward to the
21 independent risk assessors were that they would use
22 the information that was currently available on the
23 record by -- that Canadian Zinc would have used at
24 that point to conduct the risk assessment.

25 The idea behind the use of a third-

1 party independent risk assessor was in lieu of the
2 adequate risk assessment that Canadian Zinc would have
3 undertaken, and that information that Canadian Zinc
4 used for their risk assessment was already on the
5 record.

6 MR. GARTH WALLBRIDGE: Thank you.
7 Garth Wallbridge. Thank you for that clarification.
8 I'm -- I'm striving hard to understand. My client
9 really wants to know exactly, then. So it was the --
10 the Board, the professional staff seeking this report
11 who determined that a site visit would not be
12 necessary?

13

14 (BRIEF PAUSE)

15

16 THE CHAIRPERSON: Mark Cliffe-
17 Phillips?

18 MR. MARK CLIFFE-PHILLIPS: Thank you,
19 Madam Chair. Mark Cliffe-Phillips.

20 The -- the scope of work correctly, as
21 you stated, did not require Oboni Riskope to conduct a
22 site visit to Nahanni Butte.

23 MR. GARTH WALLBRIDGE: Thank you for
24 that. My second question then -- again, Garth
25 Wallbridge speaking here -- as a practising lawyer

1 over the last twenty-five (25) years, I deal with a
2 lot of appraisals on real estate.

3 Commercial real estate, residential
4 real estate, professional realtors -- or professional
5 appraisers, pardon me -- in my experience typically
6 use at least three (3), sometimes four (4) and five
7 (5) comparators to make an assessment on properties
8 that might be worth anywhere from a quarter million to
9 a few million dollars.

10 This particular road, who knows how
11 much it might cost at this point, a hundred million to
12 200 million, the same kind of pricing probably again
13 or more for the mine.

14 So my question in that, sir, is: How
15 many comparators would be the norm in your particular
16 business? I see, unless I'm mistaken, you've used
17 exactly two (2).

18 DR. FRANCO OBONI (BY PHONE): Okay.
19 First of all, houses are counted in the -- by the
20 millions. Mining access road of hundred plus
21 kilometres long are counted maybe on the number of
22 fingers you have in two (2) hands and maybe one foot.
23 So it becomes very difficult to have at hand a full
24 population to compare.

25 You have to consider that these roads

1 we selected have snow, curves, mountains. So if you
2 now look at the number of roads, access roads, that we
3 can have access to data around the world, it's not
4 anymore two (2) hands and one (1) foot. It's maybe
5 one (1) hand.

6 And of those, we selected the three (3)
7 that we knew the best -- the two (2), sorry, to be
8 precise, two (2) -- well, no, actually three (3):
9 road number 1, road number 2, and road number 3. So
10 we had three (3) that we know have the best data
11 available to make the comparison because we didn't
12 want to add uncertainties to uncertainties.

13 That's why we have three (3) comparable
14 in our analysis. And honestly, three (3) good
15 examples is better than twenty (20) bad examples.

16 MR. GARTH WALLBRIDGE: Garth
17 Wallbridge. Thank you for that, sir.

18 So thank you for that information. You
19 have a lot of experience. I think it's clear to
20 everyone here that we would agree with that. But --
21 so there is no standard number then that you would
22 use. I did ask, How many would be the norm in your
23 industry for comparators? And what I understand,
24 there is no actual number that you would consider best
25 standards to do your work.

1 DR. FRANCO OBONI (BY PHONE): There is
2 no best number of -- that we'd consider. We were very
3 happy with three (3).

4 MR. GARTH WALLBRIDGE: Thank you, sir.

5 DR. FRANCO OBONI (BY PHONE): No
6 worries. Thank you.

7 MR. GARTH WALLBRIDGE: My final
8 question then: The Northwest Territories has been
9 operating diamond mine roads in a very similar --
10 indeed farther north in terms of less light in the
11 wintertime -- for the last twenty-five (25) years.

12 And I'm wondering if you're able to
13 tell me how many, as you would describe them in your
14 presentation, the S to VS, the serious to very
15 serious, accidents have happened on the diamond mine
16 roads over the last twenty-five (25) years?

17 DR. FRANCO OBONI (BY PHONE): No, I
18 cannot tell you about diamond roads because it's not
19 only the type of road we have completed in the study.
20 We can tell you that there are numerous statistics
21 from Alberta. We have spoken with transportation
22 managers of major Canadian companies that has
23 described a very grim situation in northern Alberta.

24 And to ans -- if your question tends to
25 tell me that diamonds show that no accidents, I would

1 think it rather irrelevant to this discussion.

2 MR. GARTH WALLBRIDGE: Again thank
3 you, Sir. Garth Wallbridge here. The -- the
4 difficulty my client has, we've talked about this at
5 some length, is we're talking about a unique
6 jurisdiction -- not a unique, but a distinct
7 jurisdiction, let me rephrase that, where we have
8 since at least 1982, so thirty-five (35) years of
9 experience with diamond mine road operations, 70
10 kilometres plus of which are on land, so not just on
11 ice.

12 So although we call them ice roads, in
13 fact, according to the information I have available,
14 70 kilometres are on land, access is not prohibited by
15 a gate, for instance, but there is one (1) operator
16 for the road called the -- I think it's called the
17 Tibbit-to-Contwoyto winter road joint venture. They
18 utilize radar guns. Every truck has high visibility
19 large numbering systems.

20 Again, we have similar climatic and
21 light conditions. There are indeed 24/7 operations
22 where in some periods after heavy snowfalls and the
23 roads are being cleared as many as one hundred (100)
24 Super B-Trains have been unloaded in a single twenty-
25 four (24) hour period at one (1) diamond mine.

1 And by comparison, instead of using
2 that sort of a comparator, we have what is shown in
3 your slide as an international highway between two (2)
4 countries in western Europe open to the public. I've
5 just -- on behalf of my client, I have to say that
6 we're surprised that you would not think it
7 appropriate to use something much closer to home and
8 much more relevant.

9 DR. FRANCO OBONI (BY PHONE): Okay.
10 If you -- before selecting an example you have to go
11 into the details of that example. We have to look at
12 the layout of the road. We have to look at the
13 details of the road. We have to look at those sorts
14 of -- of elements before saying that that example is
15 way more comparable to -- to the one that we are
16 examining here.

17 And again, let me use a word here. We
18 -- what we did was paradoxical comparison. In other
19 words, we used roads that are supposed to be way safer
20 than most roads to show that the results of our study
21 were reasonable in comparison. And it's -- in
22 science, it's a customary approach to prove or
23 disprove things by comparing very different examples.
24 So that's what we did.

25 Now, I'm sure you can find a road that

1 there's magically no accidents around the world. I --
2 I cannot say that's not true; it certainly exists.
3 There is also operations of any kind in Europe that
4 have been lucky, but that's not the proper yardstick.

5 And how many years did you say that you
6 had seen that on that road?

7 MR. GARTH WALLBRIDGE: Yes, sir, that
8 road, according to the information I have available,
9 has actually operated for at least thirty-five (35)
10 years, the diamond mines twenty-five (25) years with
11 as many as ten thousand (10,000) loads a year through
12 a brief winter season.

13 DR. FRANCO OBONI (BY PHONE): M-hm.
14 Fantastic. I'm delighted to learn that. But before -
15 - before accepting that as a counter example we would
16 have to really delve into the details.

17 MR. GARTH WALLBRIDGE: Thank you, sir.
18 My final question then would be: If you had the
19 opportunity to have your -- your mandate extended at
20 this point in time would you think it appropriate that
21 you'd look at this diamond mine road?

22 DR. FRANCO OBONI (BY PHONE): ...mine
23 road. Is that the question?

24 MR. GARTH WALLBRIDGE: Sorry, sir.
25 I'll -- I'll repeat that. If --

1 DR. FRANCO OBONI (BY PHONE): Yes,
2 please.

3 MR. GARTH WALLBRIDGE: -- if it were
4 to happen that your mandate, your agreement was to be
5 extended or added to at this point in time, and you
6 were back working on assessing and doing a report,
7 would you now think it appropriate to look at the
8 Diamond mine road?

9 DR. FRANCO OBONI (BY PHONE): Yes.
10 Provided that the records are as complete as
11 necessary, yes. Why not. We have to ensure that
12 there has been no under reporting. We have to ensure
13 a number of things but we would certainly consider it.

14 MR. GARTH WALLBRIDGE: Very good.
15 Thank you, sir. Those are my questions.

16 DR. FRANCO OBONI (BY PHONE): Thank
17 you.

18 THE CHAIRPERSON: Thank you.
19 Questions from Natural Resources Canada?

20 MR. DANNY WRIGHT: It's Danny Wright,
21 from Natural Resources Canada.

22 We have no questions at this time.

23 THE CHAIRPERSON: Questions from Parks
24 Canada Agency?

25 DR. JAMIE VANGULCK: Thank you, Madam

1 Chair. Jamie Vangulck, for Parks Canada.

2 We do have a few questions to the
3 presenter. The first one (1) is, Does the Oboni risk
4 assessment specifically address the construction and
5 closure phases of the project, or was the risk
6 assessment developed for the operations phase of the
7 project?

8 DR. FRANCO OBONI (BY PHONE): Thank
9 you for this question. We focussed on the heavy
10 traffic years, which are the service years of the
11 mine. And then we worked on the -- on the
12 construction period by comparison.

13 We had questions that were addressed,
14 and data in the public record that showed that the
15 rescue systems would be already active. The traffic
16 would be minor. CNZ (sic) declared the traffic during
17 construction -- I remember quoted one (1) -- one (1)
18 load in, one (1) load out, and that's it. Something
19 like that. It's in the public record.

20 So the -- the volume of traffic and the
21 nature of traffic was investigated, and we came to the
22 conclusion based on CNZ (sic) replies that the
23 consequences of accidents during that period would be
24 very, very small. The likelihood might be the same
25 but -- but due to the variation of consequences the

1 risk would be orders of magnitude no more than during
2 service life.

3

4 (BRIEF PAUSE)

5

6 DR. FRANCO OBONI (BY PHONE): Does
7 that reply your question?

8 DR. JAMIE VANGULCK: Thank you for
9 your response. Jamie Vangulck, for Parks Canada.

10 Yes, that -- thank you for your
11 response on that one. My second question is based on
12 your experience, can you describe the processes -- the
13 process of utilizing a risk assessment to inform road
14 design and operation?

15 And in your response, could you address
16 whether the risk assessment is typically completed
17 only during the preliminary road design, or if it is -
18 - the risk assessment is updated or reevaluated as the
19 road design advances to a more final stage?

20 DR. FRANCO OBONI (BY PHONE): Yes, so
21 this is Franco Oboni again speaking.

22 There are various ways and various
23 levels of risk assessment that are typically used on
24 road projects. There -- there are safety audits.
25 There are -- that are made on roads that exist already

1 that are -- risk analysis that are developed before a
2 project exists basically as a desktop exercise as we
3 did.

4 There are detailed allowances that
5 analyses that are performed once the project is
6 farther developed, and basically ready to be
7 constructed. The safety audits are conducted normally
8 even during the service life of the project.

9 As a matter of fact, the analyses that
10 are performed to check that visibility is maintained
11 in curves, that vegetation doesn't enter and conflict
12 with traffic, or vegetation and support. So there is
13 not one answer to your questions, there are several
14 answers, and the best way to summarize it is, yes,
15 risk assessment is used to inform decisions on risk --
16 or on project -- on road projects from inception to
17 construct, including maintenance.

18 DR. JAMIE VANGULCK: Thank you. Jamie
19 Vangulck, from -- or for Parks Canada. As a follow up
20 to that response, what would you recommend with
21 regards to updating the risk assessment for this
22 project to either inform the road design or to assess
23 further mitigations after the road design is complete?

24 DR. FRANCO OBONI (BY PHONE): From
25 what I have understood, CNZ (sic) has already started

1 using the first -- first recommendations we gave in
2 our report to alter -- and the project, and modify
3 it, and mitigate some aspect. So one (1) -- one (1)
4 first element has being done.

5 We -- at Riskope we generally follow
6 our clients through the project. And we have numerous
7 example of -- of incredible success obtained by our
8 clients even in competitive bids where risk was used
9 to drive every single decision in the design.

10 So we are not pushing people for doing
11 the design and then analysing the -- the risks, but we
12 are always trying to get our clients to use risk as a
13 design support throughout the decision-making and
14 throughout the life of the project.

15 Does that reply your question?

16

17 (BRIEF PAUSE)

18

19 DR. JAMIE VANGULCK: Thank you, Madam
20 Chair. Jamie Vangulck, for Parks Canada. Thank you
21 for the responses, we have no further questions.

22 THE CHAIRPERSON: Thank you.

23 Questions, Canadian Zinc?

24

25 (BRIEF PAUSE)

1 MR. DAVID HARPLEY: It's David
2 Harpley. Dr. Oboni, as I understand it your
3 presentation was intended to be a summary of your
4 study. And I'm curious as to why in your presentation
5 there was not a conclusion that the all- season road
6 is inherently safer than a winter-only road, which was
7 -- it was in your report?

8 And the reason this is important is
9 that a winter-only road has already been approved and
10 permitted. And I realize that's not your specific
11 concern, but it has obviously relevance to this
12 proceeding.

13 DR. FRANCO OBONI (BY PHONE):
14 Actually, the -- the reason why we didn't discuss that
15 is that honestly, in this presentation it seemed so
16 obvious that the four (4) -- all season road would be
17 less risky than -- I mean, that the summer traffic
18 would be less risky than the winter traffic.

19 That we didn't think it was necessary
20 to even state it. And it's probably the only point on
21 which we agree, so why lose time on it, right?

22 MR. DAVID HARPLEY: Dave Harpley.
23 Well, I'm glad we established that fact. Thank you.
24 In your description of the assessment you went
25 through, you discussed the use of an equation into

1 which you fed information to determine a number of
2 excursions, I believe.

3 Could you perhaps elaborate a little
4 more on that equation and just explain all of the data
5 that goes into that?

6 DR. FRANCO OBONI (BY PHONE): Yes. I
7 -- I did this earlier, but I gladly go back to it.
8 The key for the understanding of what we did is Figure
9 25 in our report. Of course, because we were so
10 limited in time and because we normally teach this in
11 -- in courses and in universities and corporations, we
12 didn't think it was the objective of our presentation.

13 But nevertheless, Figure 25 in our
14 report shows that the road is cut into homogeneous
15 sections, homogeneous from the point of view of the
16 probability of an accident and homogeneous in terms of
17 consequences of an accident.

18 The probability of an accident due to
19 traffic is established by combining individual
20 probabilities that are derived from empirical
21 knowledge of the influence of each one of a number of
22 features that are on the road -- for example,
23 curvature, for example, grade and so forth.

24 The combination of probabilities is
25 done via a formula which is called the Series Formula

1 (phonetic). And we have given in Figure 25 the
2 original publication, one (1) publication where that
3 formula is explained and derived. Of course, we're
4 not here to give a math course, but by combining those
5 probabilities, you get the probability of an accident
6 at that given section of the road.

7 We then risk adjust that probability,
8 com -- combining the traffic, the number of trucks
9 that will go through that section. And we did this in
10 both directions, so load out, empties in, to get the
11 number of accidents on that specific homogeneous
12 section.

13 And then the num -- all the sections
14 that made up the road are combined in order to define
15 the number of accidents that are expected throughout
16 the road for one (1) year. And then multiply that by
17 the number of years, you get the magic -- magic number
18 that shows up in our figures.

19 So it's -- it's really a step-by-step
20 procedure following -- that anybody can do following
21 the figure in the report, Figure number 25. And the
22 individual probabilities are delivered in a table that
23 is just before or just after Figure 25.

24 Because it's -- it is a mathematical
25 procedure, we felt compelled to compare the number of

1 accidents predicted with other -- three (3) other
2 roads that we know well for which we have a very
3 serious database of accidents. And that's what
4 generated the figure that I showed you in slide number
5 19, I guess, or something like that.

6 Does that answer your question?

7 MR. DAVID HARPLEY: David Harpley.

8 Thank you for the elaboration. Can you just please
9 list off for me the input variables? You mentioned a
10 couple like curvature and there was another one. Can
11 you just list them off for me?

12 DR. FRANCO OBONI (BY PHONE): Okay. I
13 quote by -- by memory now, and I'm getting old, Mr.
14 Harpley. So again, I don't have the report open in
15 front of me. I have the presentation, but certainly
16 curvature and -- and grade for sure.

17 And the rest, if you -- if you need to
18 know, we can either take the time now and open the
19 report, or you can look at it yourself, or we can send
20 you a note in the next day or so. But it's in the
21 report. It's very clearly stated. Actually, Cesar
22 (phonetic) is opening it now. If you want, we can
23 take the time to go through and -- and find it.

24 MR. DAVID HARPLEY: It's Dave Harpley.

25 Is vehicle speed one (1) of the input variables?

1 DR. FRANCO OBONI (BY PHONE): Vehicle
2 speed intervenes in a indirect way here because
3 experience has shown, for example, that most accidents
4 do not happen in very tight turns and curves because
5 professional drivers actually slow down in those
6 conditions, so speed intervenes but in a indirect way.

7 MR. DAVID HARPLEY: It's Dave Harpley
8 again. You provided three (3) examples to, as you
9 say, benchmark your analysis. It seems that road
10 example number 3 is the most appropriate of the three
11 (3). You've said on a few occasions that you're not
12 able to divulge the location and details of that
13 example.

14 Could you perhaps indicate what type of
15 traffic is on that road and what kind of speeds they
16 drive at?

17 DR. FRANCO OBONI (BY PHONE): The
18 speed driven is very similar to the one you have
19 indicated for Prairie Creek, if not, we would not have
20 selected that. So speed wise, traffic wise, driver
21 quality dri -- wise, we are very, very similar. It's
22 also a road that gets exposed to heavy snowfalls. It
23 is unpaved, as you have noticed, so it's by all means
24 a similar road.

25 And we were very, very happy to see

1 that, considering the uncertainties we had in our
2 report, our green and orange bars that you see on
3 slide 22 in our presentation basically encircle the
4 results that the -- the real statistics of road number
5 3. That was a great comfort for us.

6

7 (BRIEF PAUSE)

8

9 MR. DAVID HARPLEY: It's Dave Harpley
10 again. You will have read our comments regarding the
11 ministry of forest road statistics and the comparison
12 of those statistics to our situation which tends to
13 suggest that the excursion frequency you've projected
14 is an order of magnitude higher than that.

15 Can you provide an explanation as to
16 why that is?

17 DR. FRANCO OBONI (BY PHONE): Yes,
18 absolutely, I can provide an explanation to that. Let
19 me just find the proper slide, and then we start the
20 reply to this. Just a second.

21

22 (BRIEF PAUSE)

23

24 DR. FRANCO OBONI (BY PHONE): Sorry.
25 Bear with me one (1) more second.

1 (BRIEF PAUSE)

2

3 DR. FRANCO OBONI (BY PHONE): Okay.

4 Could you please go to slide number 23?

5

6 (BRIEF PAUSE)

7

8 DR. FRANCO OBONI (BY PHONE): Oh, just

9 a second. We have figure 25 on another computer here,

10 so I can give you a more complete reply to the prior

11 one -- the prior question.

12

13 (BRIEF PAUSE)

14

15 DR. FRANCO OBONI (BY PHONE): No. No,

16 no, sorry, we cannot find the proper version. So are

17 you -- are you at slide number 30 -- 33?

18 THE CHAIRPERSON: Yes.

19 DR. FRANCO OBONI (BY PHONE): Okay,

20 thank you. So, as you -- as you say, Mr. Harpley, you

21 have declared this factor 10 and the reasons why it

22 should be dismissed are numerous.

23 First of all, we have a scale of

24 accidents, consequences, which is based on

25 environmental criteria, and not on health and safety,

1 which is the basis of the forestry analysis. So we
2 are basically comparing apples and bananas here.

3 Also, in your analysis of our report,
4 you have arbitrarily added environmental consequences
5 classes 5, 6, 7, 8, 9, and compared that to the
6 results of WorkSafeBC and so forth. So that -- using
7 five (5), six (6), seven (7), eight (8), nine (9),
8 it's totally arbitrary, and it does -- it goes against
9 our description that only seven (7), eight (8), nine
10 (9) are serious to very serious.

11 If you were to take only seven (7),
12 eight (8), nine (9), you would probably not get ten
13 (10), but probably get two (2), or whatever, which
14 would be already way more similar. Furthermore,
15 WorkSafeBC is also likely biassed because not all
16 forestry accidents are reportable.

17 Then there is another element that you
18 used, and it was the Forestry BC reporting -- Forest
19 BC reporting actually -- actually was used by making
20 other arbitrary decisions. For example, you took a
21 50/50 split between kilometres driven on the forestry
22 roads and highways.

23 And Mobile might say that that's the
24 correct number. It could be different. You have used
25 statistics that come out of Forest BC that cover

1 accidents occurring in city and the south of the
2 province, whereas more than half of the reported
3 forestry accidents occur in the north.

4 So take one (1), take two (2), take
5 three (3), take four (4) small deviations, and you
6 easily explain the difference of factor ten (10). So
7 that's why we do not feel comfortable at all in
8 accepting your thesis, and we stick with our results
9 that are based on -- on benchmarking with projects
10 that actually make sense.

11 So at the end of the day, it -- it's a
12 biassed historic elevation of accidents that was used
13 to disprove our risk assessment.

14 MR. DAVID HARPLEY: It's Dave Harpley.

15 I don't want to get into a backwards
16 and forwards situation here. I know I'm -- we're
17 meant to be asking questions, but I guess we have a
18 problem with that explanation for a number of reasons.

19 The first one that comes to mind
20 immediately, as far as I'm concerned, those statistics
21 are relevant to real -- really rural BC, not -- not
22 towns, that's for sure. There -- also I believe
23 there's justification for the 50/50 split that we've
24 explained.

25 And the other thing actually I was

1 going to raise is -- as a different point, but seeing
2 as you've raised it, we're talking about accidents,
3 here. We're not talking about consequence at all.
4 And I noticed previously in your report, and in --
5 actually in your presentation, that you've lapsed into
6 the consequence argument. We're only talking about
7 accidents. We're not talking about consequence.

8 So I'm still at a bit of a loss as to
9 why you think these statistics aren't com -- relevant.
10 Just one (1) second.

11

12 (BRIEF PAUSE)

13

14 DR. FRANCO OBONI (BY PHONE): Well,
15 sorry, sir. I didn't mean to polemical but I am at a
16 loss in understanding why you don't understand. So I
17 -- I think that we read very carefully what you wrote
18 in your last reply. We were very, very interested in
19 understanding if we had made an oversight, or
20 anything, and we came to the conclusion that we
21 didn't.

22 And we came to the conclusion that
23 conclusion said before had been forced to get to a
24 lambastic ten (10) -- ten (10) factor that would
25 discredit our work. Even if you drop every single

1 argument I just outlined now and you keep the only as
2 only one (1) the fact that you added 5, 6, 7, 8, 9,
3 you will see that the factor is not ten (10), but it's
4 way less, and to the point that it's covered by the
5 uncertainties of your study and our study.

6 So really, I have trouble understanding
7 what it is that you don't understand.

8

9 (BRIEF PAUSE)

10

11 MR. ERNIE KRAGT: It's Ernie Kragt
12 here, with Allnorth. And since we have page -- can we
13 have page 27 back up?

14

15 (BRIEF PAUSE)

16

17 MR. ERNIE KRAGT: I think the other
18 way.

19 THE CHAIRPERSON: You're on page 30,
20 yeah.

21 MR. ERNIE KRAGT: Yeah. I'm just
22 curious. You -- you make a statement there,
23 arbitrarily set at 50/50 split between kilometres
24 driven. We -- we base that on our -- on our
25 experience in the forest industry. I think 50/50 is

1 actually a conservative estimate.

2 Why do you see that that's a misleading
3 sta -- statement?

4 DR. FRANCO OBONI (BY PHONE): Sir, in
5 the -- in the forestry booklet that you provided to
6 us, the one that states -- that starts by saying that
7 we are seeing the perfect stor -- storm raising in
8 forestry roads because the number of accidents is
9 spiralling up, because there is more and more
10 convergence of private traffic on forestry roads and
11 so forth, they alwa -- also quote the fact that trucks
12 are going farther and farther out to harvest to get
13 wood.

14 And by asking to -- some -- some
15 companies we know -- we have an image that was given
16 to us that trucks are driving more and more over
17 highways than on forestry roads themselves. That's
18 why when -- in your letter you write, "We have adopted
19 say 50/50 split," we think that the "say" is a little
20 bit light to prove that 50/50 as a reality.

21 Your experience -- I value your
22 experience, it's very interesting, but it doesn't
23 coincide with what we have learned, and what we have
24 read, and what we have received as information.

25 MR. ERNIE KRAGT: Ernie Kragt,

1 Allnorth. Yeah, and I -- I suppose the 50/50 split
2 would be dependent on a more geographic location. As
3 you go farther north, you're probably dealing with
4 more of a -- of a larger ratio geared towards --
5 towards resource logging roads.

6 And on -- on the second note, you --
7 you imply that -- that the accidents occur in greater
8 numbers in -- in the North. I believe that that has
9 more to do with the -- the overall volume of -- of
10 wood is -- is greater harvested in the -- harvested in
11 the North, so that's a greater representation, as well
12 as it could be argued that the -- the operations in
13 the North have much more kilometres driven, or much
14 greater haul distances than -- than the operations in
15 the south.

16 Would -- would you not see that
17 perspective, or -- or what do you think of that?

18 DR. FRANCO OBONI (BY PHONE): Sir,
19 with all due respect, I am not in the position of
20 thinking. In my profession, I like to look at hard
21 facts. And -- and I value your opinion, but there is
22 nothing in the -- in the discussion that you're having
23 here that would justify your factor 10 statement
24 related to our risk assessment.

25 You know very well that now trucks are

1 zipping through highways, the cities. The last major
2 accidents, if I recall well, occurred in Whistler on
3 Highway 99 and not on some forestry road.

4 So again, the whole statistics may be
5 biassed by where the accidents occur in the province
6 and so forth. So there is, again, nothing really
7 solid that would convince me that your factor ten (10)
8 is correct.

9 MR. ERNIE KRAGT: Ernie Kragt, with
10 Allnorth. Could we go to page 22? You -- you brought
11 up the point about the -- the comparison of a 10-to-1
12 ratio or -- or we -- we think the -- the numbers are -
13 - are roughly one-tenth (1/10th) of -- of the numbers
14 that you predict.

15 Our comparison looked -- looked at the
16 -- the two (2) reports from the forestry which --
17 which was from a large sample base, historical
18 statistical data. And I guess I just want to point
19 out that -- that these numbers that are showing here
20 are not necessarily just -- just our claim.

21 I believe they're a mathematical
22 equation as -- as to -- to how we see the -- the
23 number of -- of accidents occurring based on the
24 historical data that these -- these reports provided.

25 Does your risk assessment take in

1 account historical, statistical data, or is it just a
2 calculated value?

3 DR. FRANCO OBONI (BY PHONE): Okay.

4 Thank you for the question. Again, with all due
5 respect, there is no equation that you have used. You
6 have used different data manipulations to prove a
7 point; that being said, yes, we used statistical data
8 for road 1, road 2, road 3 which are based on
9 statistics, long-term statistics that we have gathered
10 on those roads.

11 And as per the predictive analysis that
12 we performed in our risk assessment, the individual
13 probabilities that were affected to the different
14 characteristics of the road are themselves originated
15 by long-term statistic analysis and empirical data.

16 So everything you see in this report --
17 in our report is, basically, anchored to reality. And
18 when I talk about the individual probabilities, I'm
19 referring to Table 19 that we have finally been able
20 to dig out of our report. Table 19 shows you the road
21 characteristic.

22 Mr. Harpley, I am also replying to your
23 prior question that I -- when I said that I was
24 getting old and I didn't remember by heart.

25 So Table 19 lists the road

1 characteristics with their individual probability. So
2 straight, grade up, grade down, wide turn, narrow
3 hairpin, and narrow section. Those are the parameters
4 that we have included in our analysis.

5 And when you asked about the speed of
6 the vehicles, you will see that the probability -- the
7 individual probability of an accident in a hairpin is
8 an order of magnitude smaller than in a wide turn
9 because in the wide turn vehicles tend to drive faster
10 and drivers are less careful than in hairpins.

11 So when I told you earlier that we have
12 an indirect -- indirect inclusion of speed; that's
13 exactly what I meant, table 19 in our report.

14 Does that reply, does it answer your
15 questions?

16 MR. DAVID HARPLEY: It's Dave Harpley
17 here. Yes, thank you. We're flipping around a little
18 bit, but back to your example number 3.

19 Can you tell us what kind of volume of
20 traffic operates on that road?

21 DR. FRANCO OBONI (BY PHONE): The acid
22 tankers that go up and down to that mine are,
23 basically, in a comparable number to the concentrate
24 trucks that you will have on the Prairie Creek road,
25 slightly higher actually, but insignificantly higher.

1 MR. DAVID HARPLEY: Okay. It's Dave
2 Harpley again. So we've heard that the traffic is
3 insignificantly higher. We've heard that the speeds
4 are similar, and we've also heard that this is an
5 example that, unfortunately, we're not allowed to know
6 where it is and -- and any more details.

7 So we're basically taking your word for
8 all things, and I'm not -- certainly not saying that
9 you're incorrect, but you'll appreciate that it poses
10 a bit of a difficulty for us kind of justifying it all
11 without more specifics.

12 DR. FRANCO OBONI (BY PHONE): Well,
13 Sir, with all due respect, it's the same as your risk
14 assessment where you use words like "small," "medium,"
15 "large" to define probability from consequences.
16 There is also, unfortunately no basis to actually have
17 a scientific understanding of what you mean. So I
18 don't mean to be polemical here, but we have shown in
19 the report a number of pictures including a very
20 unfortunate deadly accident that occurred on that
21 road.

22 You have pictures, you have images --
23 hello?

24 THE CHAIRPERSON: You're still --

25 DR. FRANCO OBONI (BY PHONE): -- the

1 only thing that you don't know -- hello?

2 THE CHAIRPERSON: Hello. Continue on,
3 Dr. Oboni.

4 DR. FRANCO OBONI (BY PHONE): Oh, I'm
5 sorry. The only thing that we cannot reveal for --
6 for legal reasons and -- and confidentiality is the
7 name of the owner and the location, sorry.

8 MR. DAVID HARPLEY: Okay. It's Dave
9 Harpley again. Regarding road width, you made the
10 comment that the 5 metre width does not fall within
11 our own accident tolerance criteria.

12 Can you point out what those criter --
13 criteria are, because honestly I don't recollect
14 anything that we provided that would suggest that, and
15 it certainly would be an oversight if that's the case.

16 DR. FRANCO OBONI (BY PHONE): In one
17 (1) of the rounds of questions we sent you a table to
18 fill in. The table said that we would like to know
19 for each consequence class, and the consequence
20 classes were very clearly defined, we said that we
21 would like to know from you what was the maximum
22 number of accidents you will be expecting on that
23 road?

24 That series of data that you sent us
25 back constitute a -- your own accident threshold,

1 tolerability threshold. That's what you would imagine
2 that is what should occur on that road. And the
3 results of the risk assessment show that the number of
4 accidents of the front classes is widely above the
5 thresholds that you defined during -- when you filled
6 up that -- that table, which was part of Information
7 Request Round 2, if I recall well, and it was done in
8 September 20 -- you -- you replied on September 23rd,
9 2016, if I'm not wrong.

10 Actually Allnorth replied to it. But
11 again, I'm getting a little bit old and I'm quoting by
12 heart.

13 MR. DAVID HARPLEY: It's Dave Harpley.

14 Don't worry, we're all getting a little
15 bit old. But on that theme, let me just paragraph
16 what you just said, and you can just confirm that I've
17 got it right, or not.

18 But when we completed that table of our
19 threshold, you then took that information and muddled
20 the probabilities through your own calculations and
21 came up with an accimen -- accident number determined
22 by that input data, and -- or rather you -- you
23 estimated accidents from your input data, and compared
24 that with the threshold, and -- and that's where you
25 get the 'exceeds our own tolerance', not necessarily

1 exceeds a particular width that we specified.

2 DR. FRANCO OBONI (BY PHONE): Yeah.

3 The second part of the -- of your reply is the correct
4 one. We -- the -- the calculation of the probability
5 is totally independent from your reply.

6 Your reply is used to compare the
7 number of accidents per each consequence class to what
8 you would expect. That's exactly what you said in the
9 second part, I guess -- second part of your -- of your
10 reply. So there was no use whatsoever done of your
11 data other than comparing.

12 MR. DAVID HARPLEY: Dave Harpley.

13 Thank you.

14 So if we had done your assessment, the
15 way you had done it, and we had benchmarked it perhaps
16 in a different way using a different example, we
17 potentially would have come up with a probability that
18 would be within our threshold.

19 Would you agree that would be correct?

20 DR. FRANCO OBONI (BY PHONE): In that
21 case, if you had the probability threshold that is so
22 high that the numbers now make sense, I mean, are
23 within that probability, we would probably have asked
24 another round of questions asking you why you were
25 thinking that such a high probability was okay because

1 we don't cloud down your numbers as such.

2 We compare them to numbers that are
3 generally considered as valid benchmarks worldwide.
4 For example, and I'm just going to give you an
5 example, it is normally considered that the threshold
6 of credibility for an accident is between 1:100,000,
7 and 1:1,000,000 per year.

8 That's what the hazardous industries
9 all over the world use as a benchmark for credibility.
10 Anything below that is considered incredible. So the
11 first thing we did when we received your data was to
12 check a) that they were kind of comparable to the ones
13 we had suggested. If you recall the table, there is a
14 column where we suggest the numbers and you propose
15 your own values next to them, and in some cases you
16 were higher, sometimes double. Sometimes lower almost
17 one-third (1/3), And we -- we thought that based on
18 the benchmarking -- worldwide benchmarking of
19 frequencies of accidents and so forth, those
20 variations were still reasonable, and we accepted your
21 number as they were.

22 Again, if they had been higher -- way
23 higher, we would have objected to them. So it's not
24 that whatever you would have said would have gone
25 through, and we would have all been happy.

1 MR. DAVID HARPLEY: Yes, thanks. Dave
2 Harpley.

3 I'd love to debate this longer with you
4 but, unfortunately, we're on limited time here. And I
5 would ask you try and keep your answers shorter
6 because otherwise the Board is going to -- the Chair
7 is going to cut me off.

8 So just a follow-up to that and again,
9 please, a quick reply. I was not intending to change
10 the threshold. My question was:

11 If we had done your study and
12 benchmarked it differently with a different example
13 that we perhaps may have thought was more appropriate,
14 would we then have -- or would you agree that we could
15 then have arrived at an accident probability that was
16 within our threshold?

17 DR. FRANCO OBONI (BY PHONE): No. You
18 want a faster answer the answer is, No. If not, I
19 have to explain you why.

20 MR. DAVID HARPLEY: Dave Harpley.
21 Okay, well, I won't debate that any further at this
22 minute. What I do want to do though is ask if Don
23 Watt is on the phone and if he has any follow-up
24 questions himself. He's part of Allnorth, that's our
25 consultant.

1 DON WATT (BY PHONE): Good afternoon.

2 Yes, I am on the phone. You know, I had -- I did have
3 one (1) question.

4 Your -- your analysis of risk was based
5 on statistics. And I guess our -- our understanding
6 of the -- the supplemental information that we
7 provided, both accidents resulting in -- in injuries
8 and accidents resulting in property damage, so it
9 wasn't just associated with harm to people, but it was
10 actually both, statistically, you know, we -- we
11 essentially manipulated that data, as well, as you,
12 you know, manipulated expectations based on curves and
13 -- and gradients.

14 Would you not suggest that there's a
15 different way to manipulate that data that we provided
16 you to analyze it and -- and get a more realistic
17 picture, being able to compare similar roads to
18 similar roads? Because I guess my -- my question
19 would be I'm having a hard time trying to compare the
20 roads that you're looking at with the roads that --
21 the road and the traffic volume and the -- the
22 operating parameters that we're looking at with the
23 Prairie Creek Road.

24 DR. FRANCO OBONI (BY PHONE): You
25 know, I -- I'm not sure I understand your question,

1 actually, I'm sorry. Can you -- can rephrase it?

2 MR. DON WATT (BY PHONE): Yeah. So I
3 guess trying to compare like roads to like roads -- or
4 I guess the first question. Statistics. You used a
5 statistical analysis to come up with the severe to
6 very severe accident rates. And we've then taken real
7 data and we've used mathematical -- you know, we've
8 used, I guess you could call it somewhat subjective
9 analysis of that data, educated though analysis of
10 that data, to come with a different parameter.

11 You know, statistically, could we have
12 not -- could you not have looked at that data and --
13 and modified it so it was more comparable to what you
14 were looking at? Because it seems like the data was
15 discarded, being, you know, obtuse. That would be the
16 first question.

17 Next -- so, yeah, I'll let you answer
18 that one first.

19 DR. FRANCO OBONI (BY PHONE): Yeah, I
20 don't think we discarded any data here. We worked
21 with the threshold that we just discussed with Mr.
22 Harpley. We used imperical/statistical data for the
23 individual probabilities. We've combined them using
24 probability theorem, some probability formulas.

25 There was no -- no wasted data or -- or

1 discarded -- arbitrarily discarded data. And the road
2 databases that we have, the accident data bases that
3 we have for road number 1, 2, and 3 were used in their
4 entirety without doing any data game or whatever, so,
5 no, we didn't -- we -- we used what we think are the
6 most appropriate methodologies based on the volume and
7 precision of the data we have available for this.

8 And that's the key point, is to use
9 things -- mathematical, knowledge that is compa --
10 compatible with the data that are available.
11 Hopefully that answers your question.

12 MR. DON WATT (BY PHONE): Well, I
13 guess my question was:

14 Could you not have used that same data
15 that we provided you to perform a similar analysis
16 where you would be comparing what I would say are
17 roads that -- that have closer attributes to, you
18 know, the Prairie Creek road than your three (3)
19 example roads?

20 THE CHAIRPERSON: Canadian Zinc,
21 please --

22 DR. FRANCO OBONI (BY PHONE): Well,
23 you know --

24 THE CHAIRPERSON: -- state your name
25 when you're speaking --

1 MR. DON WATT (BY PHONE): Oh.

2 THE CHAIRPERSON: -- Canadian Zinc,
3 please.

4 MR. DON WATT (BY PHONE): My
5 apologies. Don Watt, with Allnorth.

6 DR. FRANCO OBONI (BY PHONE): Yeah,
7 honestly, I -- I think we should have this
8 conversation one (1) time while we are drinking a beer
9 because I -- I don't see where you want to go. We
10 asked you to define thresholds of accidents that you
11 considered valid for this type of road, and that's the
12 only question we did. We didn't use your data to do
13 anything else than comparing our results.

14 But again, maybe I don't understand
15 exactly where you're going. Or are you talking about
16 the BC roads now?

17 DON WATT (BY PHONE): Yes, that is
18 correct.

19 DR. FRANCO OBONI (BY PHONE): Oh,
20 okay, okay. Well, BC roads are BC roads, and there
21 are all those points that we made that -- that make us
22 consider using those numbers hazardous for the
23 studies. When I say, "hazardous," I mean getting a
24 risk assessment that would be misleading. And the
25 last thing we want to do as third-party independent

1 experts is to do a misleading study.

2 THE CHAIRPERSON: Could I just ask
3 Canadian Zinc --

4 DON WATT (BY PHONE): This is Don Watt
5 again.

6 THE CHAIRPERSON: -- how many more
7 questions you have?

8 MR. DAVID HARPLEY: It's Dave Harpley
9 here. I -- I think we're good to stand at this point.
10 I -- I don't think we've got any other pressing
11 questions to delay this any further.

12 THE CHAIRPERSON: Okay. No further
13 questions from Canadian Zinc? Okay. Thank you.

14 Questions from staff?

15 MR. MARK CLIFFE-PHILLIPS: Staff and
16 counsel have no questions, Madam Chair.

17 THE CHAIRPERSON: Questions from Board
18 members? David...?

19 MR. DAVID KRUTKO: David Krutko,
20 member of the Review Board. I have questions in
21 regards to your slide number 11 and 12. In most
22 cases, all accidents nowadays occur -- a lot of them
23 are human error, or else it has to do with speed,
24 fatigue, and alcohol and drugs.

25 So I'm just wondering how much of that

1 was taken into -- when you come up with your equation,
2 knowing that's most of those cases, part of the
3 fundamental problems you have with road accidents and
4 driving impairment.

5 So I'm just wondering, how did you
6 calculate that in? And also, was that how you came up
7 with the number?

8 DR. FRANCO OBONI (BY PHONE): Thank
9 you. This is Franco Oboni speaking again. Those
10 elements were brought into the presentation because we
11 used the -- the documents that Canadian Zinc brought
12 forward, which was the document on forestry road
13 accidents. That points out that alcohol, drugs, and
14 fatigue, and speed are among the major causes of
15 accidents.

16 Canadian Zinc has repeatedly stated
17 that there will be a very strict program for substance
18 abuse control, and speed control, and the instructions
19 to the drivers, and so forth. So our study at this
20 point considered a -- a -- let's say a -- a program as
21 specified by Canadian Zinc, which doesn't mean it's
22 going to be perfect, but it's going to be at least as
23 good as the one (1) of the other roads that we have
24 analyzed.

25 So we compared with other projects

1 where there are also controls on speed, alcohol,
2 fatigue, and support. And we feel comfortable that
3 the situation is covered, provided Canadian Zinc will
4 actually do what they said, which is controlling
5 substance abuse, fatigue, and speed of the drivers.

6 MR. DAVID KRUTKO: David Krutko, the
7 Board. So by implementing these measures, will that
8 decrease the amount of incidents on this road in
9 regards to accidents and -- and fatalities?

10 DR. FRANCO OBONI (BY PHONE): Well, by
11 having a strict control of driver's ability to drive
12 and speed, you certainly put safety on the right side.
13 Now again, both examples -- all the three (3) examples
14 we used are roads where this type of program are
15 implemented, and nevertheless, accidents do occur.

16 If there were no programs, the
17 accidents would be higher. In our study, we started
18 with the point of view that Canadian Zinc would put in
19 place those programs, hence our result reflect that
20 type of -- of attitude.

21 THE CHAIRPERSON: Questions from Board
22 members? Thank you for the presentation. At this
23 time, we would like to call a ten (10) minute break
24 now.

25 DR. FRANCO OBONI (BY PHONE): Thank

1 you, Madam Chair.

2 THE CHAIRPERSON: Thank you.

3

4 --- Upon recessing at 3:42 a.m.

5 --- Upon resuming at 4:04 p.m.

6

7 THE CHAIRPERSON: Okay. Our next

8 presentation this afternoon is from Parks Canada.

9 Welcome, Parks Canada. You may start your

10 presentation.

11

12 (BRIEF PAUSE)

13

14 THE CHAIRPERSON: Parks Canada, can I

15 just ask you also, if you have people on the line, to

16 introduce them as well.

17

18 (BRIEF PAUSE)

19

20 PRESENTATION BY PARKS CANADA:

21 MR. JONATHAN TSETSO: Good afternoon.

22 And thank you, Madam Chair, and members of the Board.

23 For the record, my name is Jonathan Tsetso, and am the

24 Superintendent of Nahanni National Park Reserve.

25 With me I have a number of other park

1 staff and a consultant, and they will be introducing
2 themselves as we move through discussions this week.
3 We may have somebody calling in on the line. Jill
4 (phonetic), are you there?

5 Okay. Well, if we hear any beeps, we
6 can see if anybody calls in. Okay. Before I begin, I
7 would like to acknowledge that we are on the
8 traditional territory of the Liidlíi First Nations,
9 and that discussions this week speak to many of the
10 issues on the traditional territories of the Nahanni
11 Butte Dene Band and the Liidlíi Kue First Nations, who
12 are both members of the Dehcho First Nations.

13 I would like to thank the Chief of the
14 Liidlíi First Nation, Jerry Antoine and the Chief of
15 Nahanni Butte Dene Band Peter Marcellais, their
16 councillors and community members, for the hospitality
17 they've shown over the past few days.

18 We are happy to be here today to
19 participate in the Mackenzie Valley Environmental
20 Impact Review Board's Environmental Assessment of the
21 Canadian Zinc Corporation's proposed all-season road.

22 Just aware of the timelines, here.
23 This presentation, we'll try to be within the Review
24 Board's requested timelines. To start, I'm going to
25 provide a little bit of a context before handing it

1 over to my colleague, who will go into some elements
2 of our presentation as it relates to accidents,
3 malfunctions, risk assessment, and I think permafrost,
4 soils, terrain, sewage, and grey water may be dealt
5 with in our -- in our final closing statements.

6 Okay. I'm just going to skip forward
7 here a little bit. Okay. To slide number 5, so
8 Nahanni National Park Reserve is located within the
9 Dehcho traditional lands. The Park is managed with a
10 co-management consensus team comprised of Dehcho First
11 Nations and Parks Canada under a document called the
12 Interim Park Management Agreement.

13 The Dehcho were instrumental in the
14 expansion of the Park, which now includes the Ram
15 Plateau shown in this picture. As a result of
16 expansion, approximately 84 kilometres of the proposed
17 all-season road traverses Nahanni National Park
18 Reserve.

19

20 (BRIEF PAUSE)

21

22 MR. JONATHAN TSETSO: Okay. So I'm
23 going to shuffle back to slide 3, 'Legal Requirements'
24 will be the -- the heading. Under the Canada National
25 Parks Act, and I'll quote:

1 "The maintenance or restoration of
2 ecological integrity through the
3 protection of natural resources and
4 natural processes shall be the first
5 priority of the minister when
6 considering all aspects of man --
7 the management of parks."

8 As a result, Park Canada's
9 recommendations are aimed at ensuring that ecological
10 integrity will be maintained. Within a national park,
11 projects must adhere to this regulatory and legal
12 standard. Ecological integrity in the Canada National
13 Parks Act is defined as follows:

14 "With respect to a park, a condition
15 that is determined to be
16 characteristic of its natural region
17 and likely to persist, including
18 abiotic components and the
19 composition and abundance of native
20 species and biological communities,
21 rates of change, and supporting
22 processes."

23 Parks Canada is also a competent
24 minister under the Species at Risk Act for listed
25 species in our sites. Section 79.2 of the Species at

1 Risk Act requires the identification of adverse
2 effects of the project on listed wildlife species,
3 including species of special concern and its critical
4 habitat and, if the project is carried out, must
5 ensure that measures taken -- measures are taken to
6 avoid or lessen those effects, and to monitor them.

7 In 2009, the Canada National Parks Act
8 was amended to include the expansion of Nahanni
9 National Park Reserve. The changes to the Canada
10 National Parks Act included specific provisions to
11 allow for wanting access road leading to the Prairie
12 Creek area through Nahanni National Park Reserve.

13 So I'll be moving to the next side
14 titled 'Management Direction'. So management
15 directions specific to Nahanni National Park Reserve
16 requires the park to protect a high quality of
17 wilderness, biodiversity, and natural processes, along
18 with respecting the interests of traditional users.
19 The management direction specific to Nahanni was
20 developed -- excuse me -- was developed with input
21 from our Elders, community leaders, government
22 agencies, and other interested groups.

23 And I'll be handing it over to my
24 colleague.

25 MS. ALLISON STODDART: Thank you,

1 Madam Chair. I am Allison Stoddart, with Parks
2 Canada.

3 So I'll just go through the next couple
4 of slides with regards to accidents and malfunctions,
5 and risk assessment to start. So with regards to risk
6 assessment, Parks Canada recommended that the current
7 risk assessment be updated once a near final road
8 design is available, so that the risk assessment
9 better reflects the true project. Parks Canada has
10 also recommended that this updated risk assessment
11 include all phases of the project, so construction,
12 operation, and closure.

13 The risk assessment by Oboni was not
14 based on a kilometre-by-kilometre road stratification.
15 This has resulted in uncertainties in the risk
16 assessment within the extrapolated sections.

17 In addition, Parks Canada interprets
18 Oboni's risk assessment to be focussed on the
19 operations phase of the project and does not address
20 construction or closure phases of the project. This
21 was elaborated on by Mr. Oboni earlier on. And he did
22 inform us that there were some considerations of -- of
23 construction in their risk assessment.

24 Overall, Parks Canada concludes that an
25 update to the risk assessment is warranted at a near

1 final design stage and should be used to then inform
2 the final design of operations of the road to mitigate
3 accident occurrence and associated consequences.

4 With regards to spills, spill
5 contingency and response planning are critical
6 components to mitigate against the potential impacts
7 to the environment resulting from a spill. Within our
8 technical report, Parks Canada has recommended that
9 spill contingency and response plans be informed by
10 the updated risk assessment as well as the updated
11 road design and operations plan.

12 The spill contingency and response
13 plans address each phase -- we also recommended,
14 excuse me, that the spill contingency and response
15 plans address each phase of the project, construction,
16 operation, and closure.

17 Parks Canada is very pleased to see
18 that Canadian Zinc has committed to updating the spill
19 contingency and response plans based on the updated
20 road design and operations plan and that the plan will
21 cover all phases of the project. Parks Canada
22 continues to recommend that the spill contingency and
23 response plans also be informed by the updated risk
24 assessment we have recommended.

25

1 (BRIEF PAUSE)

2

3 MS. ALLISON STODDART: Canadian Zinc
4 has proposed to develop various borrow pits along the
5 road to obtain construction materials. With the
6 potential for permafrost within these proposed borrow
7 pit locations there is a potential for disturbance and
8 impacts to permafrost, including thaw settlement.

9 In our technical report Parks Canada
10 outlined a number of recommendations, including
11 geotechnical and permafrost investigations, prior to
12 completion of each borrow source management plan, as
13 well as what to include the borrow source management
14 plans for each borrow source, such as frequency and
15 location of monitoring and the parameters to be
16 monitored.

17 We also outlined additional mitigations
18 to protect against permafrost degradation and thaw
19 settlement. It is Parks Canada's understanding that
20 Canadian Zinc has agreed to these recommendations and
21 that each borrow source management plan will include
22 the specific details for permafrost monitoring and
23 followup actions.

24 With regards to permafrost along the
25 road, based on Canadian Zinc's responses to our

1 questions this morning, Parks Canada is pleased to see
2 Canadian Zinc has committed to completing the
3 necessary permafrost monitoring beginning at
4 geotechnical investigation stage and continuing
5 through construction, operation, and closure.

6 That concludes our presentation for
7 today. Thank you very much.

8

9 QUESTION PERIOD

10 THE CHAIRPERSON: Okay, thank you.
11 Questions, Dehcho First Nations?

12 MS. CARRIE BRENEMAN: Carrie Breneman,
13 Dehcho First Nations. We don't have any questions.

14 THE CHAIRPERSON: Questions,
15 Environment Canada?

16 MR. BRADLEY SUMMERFIELD: Bradley
17 Summerfield, with Environment and Climate Change
18 Canada. We have no questions.

19 THE CHAIRPERSON: Questions to
20 Fisheries and Oceans Canada?

21 MS. VERONIQUE D'AMOURS GAUTHIER:
22 Thank you, Madam Chair. Veronique D'Amours Gauthier,
23 with Fisheries and Oceans Canada. We don't have any
24 question at the moment.

25 THE CHAIRPERSON: Questions,

1 Government of the Northwest Territories?

2 MS. LORRAINE SEALE: Lorraine Seal,
3 GNWT. No questions.

4 THE CHAIRPERSON: Questions,
5 Indigenous and Northern Affairs Canada?

6 MR. MIKE ROESCH: Mike Roesch, for
7 INAC. No questions from us. Thank you.

8 THE CHAIRPERSON: Questions, Liidlii
9 Kue First Nation?

10 MR. DEAN HOLMAN: Dean Holman here.
11 No questions from LKFN at this time, thanks.

12 THE CHAIRPERSON: Questions, Nahanni
13 Butte Dene Band?

14 MR. GARTH WALLBRIDGE: Garth
15 Wallbridge. Nahanni Butte Dene Band has no questions.
16 Thank you.

17 THE CHAIRPERSON: Questions, Natural
18 Resources Canada?

19 MR. DANNY WRIGHT: Danny Wright,
20 Natural Resources Canada. We have no questions.

21 THE CHAIRPERSON: Questions, Canadian
22 Zinc?

23 MR. DAVID HARPLEY: Dave Harpley. No
24 questions.

25 THE CHAIRPERSON: Questions from staff

1 and counsel?

2 MS. CATHERINE FAIRBAIRN: Yes. This
3 is Catherine Fairbairn, with the Review Board.

4 At different times in the process, Can
5 Zinc has mentioned making the road available
6 potentially for some uses, possibly tourism or other
7 activities. I was wondering if Parks Canada has any
8 plans to use this road for any park activities such as
9 tourism or things like access for park management?

10

11 (BRIEF PAUSE)

12

13 MR. JONATHAN TSETSO: Thank you, Madam
14 Chair. Jonathan Tsetso, Parks Canada, in response to
15 Review Board staff through you.

16 At this point, there haven't been any
17 further discussions in terms of other uses on the
18 road. Should all the appropriate players want to
19 entertain those discussions, we would certainly be
20 willing in having those discussions. Thank you.

21 THE CHAIRPERSON: Questions from
22 staff?

23 MS. CATHERINE FAIRBAIRN: That's all
24 our questions. Thank you, Madam Chair.

25 THE CHAIRPERSON: Questions from Board

1 members?

2

3

(BRIEF PAUSE)

4

5

THE CHAIRPERSON: Okay. Thank you

6

very much for your presentation. Masi.

7

Our next presentation is from Natural

8

Resources Canada.

9

10

(BRIEF PAUSE)

11

12 PRESENTATION BY NATURAL RESOURCES CANADA

13

MR. DANNY WRIGHT: Good afternoon,

14

Madam Chairman and members of the Board. My name is

15

Danny Wright. I'm the section head for the Resource

16

and Environmental Assessment Group in the Geological

17

Survey of Canada, Natural Resources Canada, and I

18

thank you for the invitation to present here.

19

I would also like to extend my thanks

20

to the members of the community and the Elders who are

21

participating in this hearing.

22

I am here with my colleague, Victoria

23

Thomas, also from NRCan, the Sustainable Mining and

24

Resource Development Division, who will present the

25

section on the regulatory view on explosive storage.

1 So in this presentation, I will very
2 quickly review NRCan's mandate and role. We will
3 summarize NRCan's technical review in relation to
4 permafrost and terrain conditions. We will also
5 review the NRCan regulatory review on explosive
6 storage, and then answer any questions if we can.

7 So NRCan's mandate. It's to enhance
8 responsible development using competitive --
9 competitiveness of Canada's natural resources and
10 products while also supporting sustainable development
11 and a clean environment. NRCan is an established
12 leader both in applied and research science and
13 technology in the fields of our science, energy,
14 forest, and metals -- and also metals.

15 So NRCan's role in this project, we are
16 involved through the Explosive Act and Regulations and
17 as a leader in earth science research in permafrost.
18 We reviewed the Developer assessment report and the
19 DAR addendum for permafrost considerations and we had
20 no information requests during that process.

21 We participated in the technical
22 meetings via teleconference this past June and we
23 submitted a final written submission to the Mackenzie
24 Valley Environmental Impact Review Board this past
25 March.

1 I would just pass this over to my
2 colleague now.

3 MS. VICTORIA THOMAS: Victoria Thomas,
4 with Natural Resources. So NRCan's review focussed on
5 the explosive storage as per the Explosives Act, as it
6 may be required to provide a magazine license for
7 storage. The Developer has committed to developing an
8 explosives management plan and NRCan will review that
9 plan to ensure that the proposed explosives magazine
10 complies with all federal regulations.

11 NRCan is satisfied that the explosive
12 storage information provided by the Developer is
13 sufficient. And if an application is submitted, NRCan
14 will require more information, such as the type of
15 magazine, location of the explosive storage, and
16 safety and security measures at that time.

17 MR. DANNY WRIGHT: Thank you. I'll
18 now review our -- re -- our technical comments on
19 permafrost. And we focussed on three (3) aspects
20 related to permafrost. The permafrost and drainage
21 conditions in the project area, permafrost and thaw
22 sensitivity and characterizations in the project area,
23 and thirdly, analysis to determine impacts of the
24 project permafrost, including effects of climate
25 change.

1 Just a quick comment on the importance
2 of permafrost. Permafrost is an important
3 consideration in the design of roads in Northern
4 Canada since changes in permafrost conditions can --
5 can adversely infrastructure, integrity, and
6 performance.

7 And climate change can also play an
8 important role due to the thawing of permafrost and
9 the associated effects on road integrity.

10 So the first aspect we looked at was --
11 with respect to permafrost was on drainage conditions
12 and understanding permafrost distribution and drainage
13 conditions is important for road operation and also to
14 memorize -- minimize impacts on the terrain.

15 The Developer identified where
16 permafrost is most likely to occur, which areas are
17 exten -- sensitive to thaw, and where seepage and
18 cross-drainage existed. Cross-drainage, of course, is
19 where the water drains under the road.

20 Mitigation measures are proposed to
21 limit impacts to permafrost thawing and changes to
22 drainage. NRCan's view is that the Developer has
23 recently identified areas of permafrost in the project
24 area. However, the distribution of permafrost in
25 areas where significant changes in elevation is

1 complex, colder conditions near the road can lead to
2 freezing or subsurface water moving downslope and
3 result in icings.

4 This is sort of contrary to natural
5 thinking where you expect temperatures to decrease as
6 you go up in elevation. In valley conditions often
7 you get temperature inversions and you get colder
8 temperatures in the bottom so that icing can develop
9 down near the road.

10 The second issue we looked at was
11 permafrost and thaw sensitivity characterization.
12 Road construction and operation can result in warming
13 and thawing of ice rich ground and result in ground
14 instability and ponding of water.

15 The Developer has characterized
16 permafrost in terrain conditions in the project areas
17 using maps, air photos, and field investigations.
18 NRCan agrees with the characterization for this stage
19 of the design process. The Developer's approach is
20 consistent with other development proposals in the
21 Northwest Territories, for example, the NICO Mine and
22 the Inuvik Tuktoyaktuk Road and outline and guidelines
23 in the Canadian Standards Association and the
24 Transport Association of Canada.

25 The -- the third aspect we looked at

1 was the impacts of the project on permafrost,
2 including the effects of -- effects of climate change.
3 Understanding the relationship between permafrost and
4 infrastructure interaction is an important
5 consideration for the design of the road. The
6 Developer acknowledged that permafrost conditions may
7 change over time due to road construction and climate
8 change and has proposed mitigation techniques to
9 minimize impacts.

10 NRCan agrees with the Developer's
11 approach. They applied the appropriate screening
12 methods outlined in the Canadian Standards Association
13 guidelines. And their qualitative analysis of
14 changing permafrost was conservative and quantitative
15 analysis are proposed for detailed design.

16 In summary, our recommendations are:

17 NRCan recommends that to support the
18 detailed design development of mitigation, management,
19 and monitoring plan. The Developer should, 1) conduct
20 field investigations that identify additional areas
21 where obstruction of cross flow and icing formation
22 during winter may be an issue;

23 2) carry out additional site
24 investigations, example, geophysical surveys and
25 geotechnical bore holes to confirm permafrost

1 and subsurface conditions including ground, ice
2 conditions, particular in areas of sensitive terrains,
3 such as slopes and where major structures are planned.

4 Thirdly, it should conduct a
5 quantitative analysis in high sensitive areas,
6 potentially including thermo modelling, to better
7 assess how permafrost conditions might change as a
8 result of climate change.

9 And that ends our presentation.

10 THE CHAIRPERSON: Thank you.

11

12 QUESTION PERIOD:

13 THE CHAIRPERSON: Questions to the
14 presentation, Dehcho First Nations?

15 MS. CARRIE BRENEMAN: Carrie Breneman,
16 Dehcho First Nations. We don't have any questions.

17 THE CHAIRPERSON: Questions,
18 Environment Canada?

19 MR. BRADLEY SUMMERFIELD: Bradley
20 Summerfield, with Environment and Climate Change
21 Canada. We have no questions.

22 THE CHAIRPERSON: Questions, Fisheries
23 and Oceans Canada?

24 MS. VERONIQUE D'AMOURS GAUTHIER:
25 Thank you, Madam Chair. Veronique D'Amours Gauthier,

1 with Fisheries and Oceans Canada. We don't have any
2 question. Thank you.

3 THE CHAIRPERSON: Questions,
4 Government of the Northwest Territories?

5 MS. LORRAINE SEALE: Lorraine Seale
6 with GNWT. No questions.

7 THE CHAIRPERSON: Questions,
8 Indigenous and Northern Affairs Canada?

9 MR. MIKE ROESCH: Sorry. Mike Roesch,
10 for INAC. We have no questions. Thank you.

11 THE CHAIRPERSON: Questions, Liidlil
12 Kue First Nations?

13 MR. DEAN HOLMAN: Thank you, Madam
14 Chair. Dean Holman here. Liidlil Kue First Nation
15 has no questions at this time.

16 THE CHAIRPERSON: Questions, Parks
17 Canada?

18 MS. ALLISON STODDART: Thank you,
19 Madam Chair. Allison Stoddart, with Parks Canada. We
20 have no questions.

21 THE CHAIRPERSON: Questions, Canadian
22 Zinc?

23 MR. DAVID HARPLEY: Dave Harpley. No
24 questions.

25 THE CHAIRPERSON: Questions, staff or

1 counsel?

2 MR. MARK CLIFFE-PHILLIPS: Staff and
3 counsel have no questions, Madam Chair.

4 THE CHAIRPERSON: How could I forget
5 Nahanni Butte Dene Band?

6 MR. GARTH WALLBRIDGE: You just want
7 to forget me.

8 THE CHAIRPERSON: My apologies. I
9 didn't do that on purpose.

10 MR. GARTH WALLBRIDGE: That's okay.
11 The chief -- the chief is poking me saying he used to
12 being forgotten. No, I was --

13 THE CHAIRPERSON: And Jayne probably
14 poked you just as well. Wake up. My sincere
15 apologies. Questions from Nahanni?

16 MR. GARTH WALLBRIDGE: Just one (1)
17 moment, please, Madam Chair.

18

19 (BRIEF PAUSE)

20

21 MR. GARTH WALLBRIDGE: The chief has a
22 question -- or comment.

23 CHIEF PETER MARCELLAIS: Yes, Peter
24 Marcellais, Chief of Nahanni Butte. I was just -- I
25 was listening to all that stuff about climate change

1 and stuff like that. There's nothing you can do about
2 the climate change, it's up to God. And then
3 permafrost -- it gets warmer, permafrost is going to
4 melt. There's nothing we can do. It's up to God to
5 decide. Masi. That's all I wanted to say.

6 THE CHAIRPERSON: Okay. Masi, Chief.
7 No further questions from Nahanni?

8 MR. GARTH WALLBRIDGE: None. Thank
9 you, Madam Chair.

10 THE CHAIRPERSON: Questions from
11 staff? Was there none? Okay. Questions from Board
12 members?

13

14 (BRIEF PAUSE)

15

16 THE CHAIRPERSON: Thank you for your
17 presentation.

18 CHIEF PETER MARCELLAIS: Thank you.

19 THE CHAIRPERSON: The next
20 presentation is from Indigenous and Northern Affairs
21 Canada.

22

23 (BRIEF PAUSE)

24

25 PRESENTATION BY INAC:

1 MR. MIKE ROESCH: Thank you, Madam
2 Chair. Mike Roesch, for INAC. And my colleague with
3 me is Maureen Flagler.

4 We'd like to begin the commentary of
5 our presentation on slide 4. INAC has requested that
6 the Nahanni Butte Dene Band relinquish their IAD
7 status and to be very clear, we are only requesting
8 that they relinquish the corridor for the road, and
9 the portion that will encompass the Barge Landing
10 area.

11 By relinquishing their interest to us,
12 we see two (2) benefits, the first of which is that we
13 can protect their lands through the regulatory
14 instruments which in this case specifically will be
15 the licence of occupation for the roadway, and the
16 barge landing site which will be covered under our
17 surface lease.

18 And just to preface also, we're --
19 we're only talking about 6 kilometres of land that
20 INAC has shared responsibility for with the Nahanni
21 Band. The second benefit that we found is that we'll
22 be able to work with Parks Canada and with the
23 Government of the Northwest Territories to issue
24 similar land tender documents which will then ensure
25 that the roadway is covered by the same rules and

1 conditions from start to finish.

2 So some of our recommendations have
3 since been resolved after our submission of the
4 technical report. We recognize the difficulty that
5 the Nahanni Band may have in relinquishing some of
6 their IAB parcel. However, we view this as a
7 temporary measure with the three (3) year construction
8 schedule, with a seventeen (17) -- potentially
9 seventeen (17) plus year life span we expect that a
10 land claim will be settled in this area.

11 And whether it is a regional body or a
12 community land corporation, somebody will take over
13 this area, and we recognize their history and
14 tradition there, so we don't expect to have to carry
15 this for long.

16 We've already had discussions with both
17 Parks the Government of the Northwest Territories, and
18 they are amenable to issuing similar land
19 dispositions, and that we should be able to mirror one
20 another's agreements and clauses.

21 We accept the proposal that Can Zinc
22 has put forward, which is to issue a smaller footprint
23 through the IAB lot so it won't be as wide as what has
24 been proposed probably with the GNWT and the Parks
25 land, thus minimizing the impact on what the Band's

1 temporary relinquishment would be.

2 And we have also had positive
3 discussions with the Government of the Northwest
4 Territories and Can Zinc with respect to the barge
5 landing sites, so we feel that those discussions have
6 resolved what our previous issues were.

7 With respect to public access, we feel
8 again that this has been somewhat resolved since our
9 technical submissions, recognizing that the licence of
10 occupation for the roadway does not provide access
11 control. The lease at the barge landing site does,
12 and the way that we worked with Can Zinc and with the
13 Government of the Northwest Territories is if they
14 align it correctly it should satisfy the access
15 control for the Nahanni Band and for Can Zinc to
16 protect the safety and their areas.

17 So our only recommendation, as a note
18 there, there have been kind of mentions -- sorry --
19 there have been mentions by Can Zinc about monitoring
20 and other measures along the roadway. We would just
21 ensure that they recall that the only access that can
22 be prevented is within the lease boundaries.

23 INAC does have concerns that Can Zinc
24 has not designating -- designated the Liard Crossing
25 as a high-risk site, nor is it identified as a site

1 that will have spill equipment storage on it. We've
2 heard in the past few days from community members in
3 both Nahanni Butte and here in Fort Simpson about the
4 importance of water.

5 And we've also seen -- Can Zinc is
6 showing that they have a camp on the north side of the
7 river where there will be interaction between highway
8 trucks, and haul trucks, and trading trailers. So we
9 see that there's, you know, a higher area of traffic
10 there. There's also a requirement to fuel the barge
11 at this area.

12 So INAC recommends that the Liard Camp
13 at kilometre 156 be designated as high risk. And we
14 further request that the stor -- spill containment
15 equipment, maybe one (1) of the trailers that Mr.
16 Harpley's talked about, be at one (1) of these sites.

17 And then finally, as we would let any
18 of our clients know, if you have any sort of fuel
19 storage, please ensure that it complies with our
20 colleagues at Environment and Climate Change Canada
21 under their regulations.

22 That's all of our presentation.

23

24 QUESTION PERIOD:

25 THE CHAIRPERSON: Thank you.

1 Questions to the presentation? Dehcho First Nations?

2 MS. CARRIE BRENEMAN: Dehcho First --
3 Carrie Breneman, for Dehcho First Nations. We don't
4 have any.

5 THE CHAIRPERSON: Questions,
6 Environment Canada?

7 MR. BRADLEY SUMMERFIELD: Thank you,
8 Madam Chair. Bradley Summerfield, with Environment
9 and Climate Change Canada. We don't have any
10 questions.

11 THE CHAIRPERSON: Questions, Fisheries
12 and Oceans Canada?

13 MS. VERONIQUE D'AMOURS GAUTHIER:
14 Thank you, Madam Chair. Veronique D'Amours Gauthier,
15 with Fisheries and Oceans Canada. We don't have any
16 question.

17 THE CHAIRPERSON: Questions,
18 Government of the Northwest Territories?

19 MS. LORRAINE SEALE: Lorraine Seale,
20 GNWT. No questions.

21 THE CHAIRPERSON: Questions, Liidlii
22 Kue First Nations?

23 MR. DEAN HOLMAN: Dean Holman here,
24 LKFN. LKFN has no questions at this time. Thank you.

25 THE CHAIRPERSON: Questions, Nahanni

1 Butte Dene Band?

2 MR. GARTH WALLBRIDGE: Garth
3 Wallbridge, for the band. No questions, thank you,
4 Madam Chair.

5 THE CHAIRPERSON: Questions, Natural
6 Resources Canada?

7 MR. DANNY WRIGHT: Danny Wright,
8 Natural Resources Canada. We have no questions.

9 THE CHAIRPERSON: Questions, Parks
10 Canada?

11 MS. ALLISON STODDART: Allison
12 Stoddart, with Parks Canada. We have no questions.

13 THE CHAIRPERSON: Questions, Canadian
14 Zinc?

15 MR. DAVID HARPLEY: It's Dave Harpley.
16 I have no questions. I did want to just add a comment
17 which is that I thought we had identified spill
18 response equipment for the barge crossing -- for the
19 river crossing, but maybe that was an oversight, but
20 certainly the intention.

21 So to simplify matters, we're
22 completely okay with all the recommendations. And if
23 any aren't currently captured as commitments, we will
24 assume whatever isn't captured as commitments.

25 THE CHAIRPERSON: Questions, MVEIRB

1 staff or counsel?

2 MR. MARK CLIFFE-PHILLIPS: Board staff
3 and counsel have no questions, Madam Chair.

4 THE CHAIRPERSON: Questions for Board
5 members?

6

7 (BRIEF PAUSE)

8

9 THE CHAIRPERSON: Thank you very much
10 for your presentation.

11 The next presentation is from the
12 Government of the Northwest Territories.

13

14 (BRIEF PAUSE)

15

16 PRESENTATION BY GNWT:

17 MS. LORRAINE SEALE: Thank you, Madam
18 Chair. I'm Lorraine Seale, the Director of Securities
19 and Project Assessment with GNWT Department of Lands.
20 With me at the table I have Monica Wendt, Paul
21 Mercredi, and Simone Tielesh. On the phone I have --
22 we have Melissa Bard, who's a Territorial Lands
23 Administration Specialist in Yellowknife.

24 I just want to check, Melissa, can you
25 hear us?

1 MS. MELISSA BARD (BY PHONE): Yeah, I
2 can hear you.

3 MS. LORRAINE SEALE: Okay. The -- the
4 phone has been cutting in and out today, but Melissa
5 has been listening to the majority of the discussion.
6 Also with us in the room today we have Steve
7 Gooderham, Jeremy Dixon, Diana Beck, Kyle
8 Christiansen, Jarret Hardisty, and Laurie Nadia.

9 Those last three (3) are -- are from
10 the -- the Lands Regional Office here in Fort Simpson.
11 I'll speak to the portion of the GNWT presentation
12 dealing with land tenure and administration, and then
13 Monica will speak to the permafrost and -- permafrost
14 portions.

15 We also have Rick Walbourne from the
16 Department of Environment and Natural Resources on the
17 phone. And, Rick, just checking in, can you hear us?

18 MR. RICK WALBOURNE: Yes, I can hear
19 you.

20 MS. LORRAINE SEALE: Thanks. And
21 after that, we'll return briefly to public -- the
22 public transportation system. So slide 2, please.

23

24 (BRIEF PAUSE)

25

1 MS. LORRAINE SEALE: Just one (1)
2 note, our -- the recommendation numbering is from the
3 GNWT Technical Report, which doesn't completely match
4 the agenda.

5 Next slide. So the -- the GNWT wishes
6 to clarify for the Review Board the legislative and
7 policy context regarding land tenure and the proposed
8 development. This context is unlikely to change
9 significantly over the life of the project, subject to
10 the outcome of the Dehcho process.

11 Next slide. The GNWT's approach to the
12 proposed road would be consistent with its approach to
13 existing resource access roads in the Northwest
14 Territories. Should the development proceed to the
15 regulatory phase, the Developer would need to apply
16 for a licence, also called a licence of occupation,
17 for the portion of the road located on territorial
18 lands, and that would include any winter-only
19 portions.

20 A licence of occupation is a non-
21 exclusive authorization that prevents the occupancy of
22 land for a specific purpose and does not convey --
23 excuse me, does not convey exclusive possession of the
24 lands. Neither the GNWT nor the Developer would have
25 the authority to deny the public access to the

1 portions of the road on territorial lands.

2 On existing resource access road --
3 roads, road users not associated with the operator
4 assume responsibility for their own activities. The
5 same considerations would apply to the proposed
6 Prairie Creek all-season road.

7 The Prairie Creek all-season road would
8 be an industrial road built to industrial standards,
9 not intended for public use. The GNWT would not
10 recommend that the public use the road.

11 Licence holders are able to inform and
12 educate road users, and to monitor road usage. The
13 GNWT supports the Developer's commitments to post
14 signs that the road not be used and warn of the
15 dangers posed by traffic, monitor and record any non-
16 mining traffic activity, including the establishment
17 of a checkpoint and annual reporting, and the use of
18 local environmental monitors on the all-season road
19 during periods of mine traffic.

20 As noted in the techni -- our technical
21 report, GNWT would also require some of -- certain of
22 these signs in particular to advise the public that
23 travel is at their own risk.

24 So that's -- so the next slide, please.
25 This is slide 5 for those on the phone. So for road

1 tenure requirements, GNWT recommends that Canadian
2 Zinc review its commitments regarding road access and
3 use from the current proceeding and from the previous
4 environmental assessment, because those commitments
5 are filed on the registry for this assessment to
6 ensure that they are consistent with the legislative
7 and regulatory framework and include any necessary
8 revisions in its response to other parties' technical
9 reports.

10 So this recommendation was largely to
11 ensure that Canadian Zinc wasn't making commitments
12 that conflict with the -- with the legislative
13 framework. The next slide.

14 At the -- at the Liard River Crossing,
15 as we've heard, the Developer will require surface
16 leases from both INAC and GNWT. The Developer will
17 require surface leases for the north shore of the
18 Liard River crossing, or the west side, the side
19 opposite that's not close to the Liard Highway, and
20 including any winter-only portions located on
21 territorial lands.

22 The Developer will also require water
23 lot leases on both sides of the -- from GNWT on both
24 sides of the Liard River to support development of
25 barge landing sites. Slide 7.

1 I should add from our previous slide
2 that GNWT is working closely with INAC. And although
3 we -- our land administration people have not yet had
4 discussions with Parks Canada, we are more than
5 willing to, and will do that as required.

6 So as -- as the Developer has noted --
7 we're on slide 7 now, access considerations. Canadian
8 Zinc will have the right to resist -- to restrict
9 access to its leased parcels on the north shore of the
10 Liard River. GNWT notes that the public would still
11 be able to travel around the leased parcels to public
12 lands on the far side of the parcels.

13 Access to the region currently exists
14 for hunters, traditional users, and the general
15 public. Travelling around the leased parcels to gain
16 access to the road would likely be more difficult than
17 travelling across the leased areas, and the Developer
18 spoke to this earlier in the week. Slide 8.

19 Our -- GNWT recommit -- recommendation
20 number 2. GNWT recommends that Canadian Zinc continue
21 to work with GNWT and INAC to clarify lease
22 requirements related to proposed facilities and
23 activities in the Liard crossing area.

24 Since the completion of the GNWT's
25 technical report, there have been some additional

1 discussions with the Developer. Canadian Zinc has
2 filed a letter regarding land tenure on the public
3 registry dated April 6th, 2017. This letter does not
4 necessarily represent GNWT con -- approval of the
5 content and the barge landing diagrams that were
6 attached to the letter. We anticipate having
7 additional discussions with the Developer before the
8 registry closes, and we'll submit a formal letter to
9 the Board after this hearing incorporating what we've
10 heard this week.

11 Should the project proceed to the
12 regulatory phase, GNWT would conduct additional
13 application and technical review processes. One (1)
14 point I particularly want to highlight is that a -- a
15 new distinction introduced this morning was the idea
16 that Nahanni Butte Dene Band would be managing the
17 access requirements. So we're still looking for some
18 clarity around whether that would involve a gate, and
19 the timing, and -- and how that would play out.

20 And that's the conclusion of the
21 portion regarding access considerations. I'll now
22 pass it to Monica Wendt for permafrost.

23 MS. MONICA WENDT: Thank you,
24 Lorraine. Monica Wendt, with GNWT ENR. So in regards
25 to permafrost, at the technical session, the Developer

1 committed to developing a permafrost monitoring plan
2 as a permit condition informed by the tailored
3 investigation of permafrost along the road alignment.

4 And in response to GNWT's Information
5 Request, Canadian Zinc provided a technical memo that
6 includes a list of commitments related to management
7 of potential effects to permafrost including the
8 establishment of a monitoring program as well as
9 monitoring requirements at borrow sites.

10 And also, the Developer's October 2016
11 Table of Commitments includes confirmation that all
12 recommendations by consultants have been accepted by
13 Canadian Zinc and will be submitted as commitments.

14 A specific characterization of
15 permafrost or -- or assessment of ice content within
16 the permafrost exist at this time for the road or
17 borrow sites. GNWT is unable to assess the
18 significance of permafrost degradation or its impact
19 to land and water.

20 Our experience suggests that, if ice --
21 sorry, ice-rich permafrost exists along the road or at
22 borrow sites, its degradation should like -- would
23 likely result in significant adverse impacts to water
24 and local landscapes.

25 GNWT supports the establishment of a

1 permafrost monitoring and mitigation program during
2 the regulatory phase. GNWT also is supportive of
3 monitoring at borrow sites which would include water
4 monitoring and permafrost monitoring if permafrost is
5 present.

6 GNWT acknowledges the Developer's
7 commitment to establish a permafrost monitoring and
8 mitigation plan during the regulatory process, and
9 recommends that the Review Board recognize this as
10 Developer's commitment which should be included in the
11 scope of development for --

12 THE CHAIRPERSON: Excuse me, but could
13 I ask the presenter to just slow down a bit? Our
14 interpreters are having --

15 MS. MONICA WENDT: Okay.

16 THE CHAIRPERSON: -- a difficult time
17 interpreting. Thank you.

18 MS. MONICA WENDT: Sorry. Sorry about
19 that.

20 Recommends that the Review Board
21 recognize this develop -- this as Developer's
22 commitment which should be included in the scope of
23 development for this proceeding and captured in the
24 Report of Environmental Assessment. This is our
25 recommendation number 10. Thank you.

1 MS. LORRAINE SEALE: Okay. It's
2 Lorraine Seale again. We're on slide 10, which is
3 considerations relating to transportation
4 infrastructure. This is -- the Department of
5 Infrastructure was until recently the Departments of
6 Public Works and Transportation. So the
7 Transportation Department is now participating as the
8 Department of Infrastructure.

9 This is -- this matter is resolved. We
10 include it for the information of the Board and
11 parties and for completeness to reflect the content of
12 our technical report. The GNWT has responsibilities
13 relating to the operations, maintenance, and
14 reconstruction of the public highway system in the
15 NWT.

16 Next slide, please. The GNWT and
17 Canadian Zinc entered into a transportation
18 collaboration agreement in August 2012 to work to
19 ensure safe and efficient transportation along Highway
20 7 and the Nahanni Butte access road. And that
21 agreement is on the public registry.

22 Next slide, please. The Developer has
23 stated on several occasions, including earlier in this
24 public hearing, that it can work within the current
25 speed and weight restrictions on Highway 7. And GNWT

1 recommends that Canadian Zinc continue to work with
2 the appropriate department in terms of hauling
3 schedules and weights.

4 And that concludes our presentation.
5 Thank you, Madam Chair.

6

7 QUESTION PERIOD:

8 THE CHAIRPERSON: Thank you.

9 Questions to the presentation, Dehcho
10 First Nations?

11 MS. CARRIE BRENEMAN: Carrie Breneman,
12 Dehcho First Nations. We have no questions.

13 THE CHAIRPERSON: Questions,
14 Environment Canada?

15 MR. BRADLEY SUMMERFIELD: Bradley
16 Summerfield, with Environment and Climate Change
17 Canada. We have no questions.

18 THE CHAIRPERSON: Questions, Fisheries
19 and Oceans Canada?

20 MS. VERONIQUE D'AMOURS GAUTHIER:
21 Thank you, Madam Chair. Veronique D'Amours Gauthier,
22 with Fisheries and Oceans Canada. We don't have any
23 question.

24 THE CHAIRPERSON: Questions,
25 Indigenous and Northern Affairs Canada?

1 MR. MIKE ROESCH: Mike Roesch, for
2 INAC. We have no questions. Thank you.

3 THE CHAIRPERSON: Questions, Liidlii
4 Kue First Nations?

5 MR. DEAN HOLMAN: Thank you, Madam
6 Chair. Dean Holman here. LKFN has no questions at
7 this time, thanks.

8 THE CHAIRPERSON: Questions Nahanni
9 Butte Dene Band?

10 MR. GARTH WALLBRIDGE: Thank you,
11 Madam Chair. Garth Wallbridge, for the Nahanni Butte
12 Dene Band.

13 One (1) question, please, on slide 3.

14

15 (BRIEF PAUSE)

16

17 MR. GARTH WALLBRIDGE: The second
18 bullet point, we're having a bit of difficulty
19 understanding it, and it might just be -- well, it is
20 wording. If we could just get an understanding:

21 "The context is unlikely to change
22 significantly over the life of the
23 project subject to the outcome..."

24 Is it "subject only to the outcome?"

25 It's -- it's just -- I'm having a hard time

1 understanding it and explaining it to my clients.

2 MS. LORRAINE SEALE: Lorraine Seale,
3 GNWT.

4 This is essentially a different way of
5 saying what INAC noted in its presentation, that there
6 are land resource and self-government negotiations
7 under way between -- among Canada, GNWT, and the
8 Dehcho First Nations, and that may result in changes
9 to land ownership and administration and control. And
10 that may occur during the life of this project.

11 MR. GARTH WALLBRIDGE: Thank you.

12

13 (BRIEF PAUSE)

14

15 THE CHAIRPERSON: No further
16 questions?

17 MR. GARTH WALLBRIDGE: Sorry, Madam
18 Chair. No further questions. Thank you.

19 THE CHAIRPERSON: Questions Natural
20 Resources Canada?

21 MR. DANNY WRIGHT: Danny Wright,
22 Natural Resources Canada. We have no questions.

23 THE CHAIRPERSON: Questions Parks
24 Canada?

25 MS. ALLISON STODDART: Allison

1 Stoddart, with Parks Canada. We have no questions.

2 THE CHAIRPERSON: Questions Canadian
3 Zinc?

4 MR. DAVID HARPLEY: It's Dave Harpley.
5 I have two (2) items I wanted to cover.

6 The first one has to do with the April
7 6th letter that we submitted to the Board. Just for
8 some background, we did draft the letter and circulate
9 it to comment from -- well, by GNWT and INAC. And we
10 did receive some review comments from GNWT, and made
11 some adjustments to the letter.

12 We did not share the actual diagrams
13 with GNWT that we submitted. We -- we discussed the
14 concept of the diagrams, and just to clarify the
15 intent of the diagrams was not as a final outline of
16 what the -- the leases -- the proposed leases will
17 actually look like. They're merely -- were intended
18 to put a picture to the words so people can understand
19 what they might look like.

20 So we understand and realize that a
21 formal Application is required, so that letter was
22 simply to convey to the Board and parties the general
23 understanding of how that arrangement was going to
24 work.

25 The second item has to do with the

1 comments on permafrost, and the -- the reference to a
2 permafrost monitoring plan and, quote, "during the
3 regulatory process." I always get a bit nervous with
4 those particular words because they're not very well
5 defined in terms of timing.

6 And I -- I just want to pose the
7 question back to GNWT, if they would be comfortable
8 with a more specific wording such as, develop a
9 suitable monitoring plan before road construction.
10 Because as we understand it the process will be a
11 permit gets issued with conditions, and probably a
12 condition of the permit is that a suitable monitoring
13 program is to be developed.

14 And as we heard earlier this morning,
15 one (1) can only be developed once the investigation
16 work has been undertaken, and that also comes after
17 the permit is issued. So I just want to make sure we
18 understand the timing. Thank you.

19 MR. RICK WALBOURNE (BY PHONE): I
20 think -- I think what we were going for there was that
21 a -- instead of establishing --

22 THE CHAIRPERSON: Please, state your
23 name for the record before you begin.

24 MR. RICK WALBOURNE (BY PHONE): I
25 apologize. Rick Walbourne, with ENR.

1 I think what we were aiming for there
2 was that it would be required during the regulatory
3 process. So maybe the word establishment is the prob
4 -- is the problem there that you're thinking that the
5 plan would have to be finalized during the regulatory
6 process.

7 I think we were looking for a
8 requirement of a plan during the regulatory process.
9 So that being said, I don't think we would have any
10 problem with the -- the wording you recommended
11 regarding that it be completed prior to construction
12 of the road. So I -- I have no issue with that.
13 Thank you.

14 MS. LORRAINE SEALE: It's Lorraine
15 Seale, with GNWT.

16 I'd also refer parties and the Board to
17 the GNWT's technical report. This recommendation was
18 intended to agree with and confirm commitments made by
19 the Developer.

20 So on page 28 of GNWT's Technical
21 Report there's a list of some of those specific
22 commitments made by the Developer in the October 2016
23 table of commitments. So the intent of this
24 recommendation was to support and bring to the
25 attention of the Board the GNWT's support for that

1 commitment, or that set of commitments rather.

2 MR. DAVID HARPLEY: Dave Harpley.

3 That's good. Thanks. I don't recollect everything
4 that's already on the record, so I'm completely fine
5 with that. Thank you.

6 THE CHAIRPERSON: Any more questions,
7 Canadian Zinc? Questions for staff and counsel?

8 MR. MARK CLIFFE-PHILLIPS: Thank you,
9 Madam Chair, Mark Cliffe-Phillips. Staff and counsel
10 have no questions.

11 THE CHAIRPERSON: Questions for Board
12 members?

13 MR. JOE HANDLEY: Joe Handley. Just
14 one (1) -- probably a minor question, but on page 4
15 you mentioned putting up a -- a road user notice that
16 the road is at their own risk. I thought we use all
17 roads at our own risk.

18 How's the public to interpret this? Is
19 -- is there some assurance that's not provided when
20 they're on this road? This is a public road.

21 MS. LORRAINE SEALE: Lorraine Seale,
22 GNWT. This was -- other resource assess roads,
23 notably the Tibbitt-to-Contwoyto joint venture, their
24 -- their licence of occupation includes a requirement
25 to post signs saying that it -- use by the public is

1 at its own risk.

2 This -- this highw -- this all season
3 road would not be a designated highway under the NWT
4 Public Highways Act, and it -- so the considerations
5 for the public travelling on the road are different
6 than travelling on a designated highway that's
7 developed and maintained by the Government of the
8 Northwest Territories.

9 THE CHAIRPERSON: Questions from --
10 questions from Board members?

11 MS. SUNNY MUNROE: This is Sunny
12 Munroe. I have one (1) question, Lorraine, regarding
13 what you just told Joe.

14 Since there are special conditions on
15 this par -- on this stretch of road specific to this
16 project, is there any way that that road can be
17 transferred to the proponent under the -- under the
18 legislation?

19 This is in terms of access control,
20 right, and then it would expire at the end of the
21 project.

22 MS. LORRAINE SEALE: Lorraine Seale,
23 GNWT. I -- I think the question is: Is there some
24 way that the Developer would be able to manage the
25 entire road. Is that correct? I'm seeing you are --

1 that is correct.

2 Under the current legislative framework
3 there is not a way for that to -- to be done. It is a
4 -- neither the Developer nor GNWT has the authority to
5 restrict public access. However, because of the
6 requirement for the Developer to obtain a surface
7 lease at the barge landing site, the Developer can
8 restrict access to that leased parcel.

9 Now that -- as we've discussed, that's
10 not the same as restricting the access to the road,
11 but it -- the expectation is that it would reduce
12 access to the road.

13 THE CHAIRPERSON: Questions from Board
14 members? Thank you very much for your presentation.

15

16 (BRIEF PAUSE)

17

18 THE CHAIRPERSON: The final
19 presentation for the day is Dehcho First Nations.

20

21 (BRIEF PAUSE)

22

23 PRESENTATION BY DEHCHO FIRST NATION:

24 MS. CARRIE BRENEMAN: Carrie Breneman,
25 Dehcho First Nation. Not part of our presentation

1 today, but a comment that we made after some of the
2 discussions around risk along the road. You know, we
3 heard today a bit about some of the landslide hazard
4 on the road, some of the steep slopes that are long
5 the road, kind of some conversation about road width.
6 And we have kind of some outstanding concerns about
7 what those risks would look like along the road.

8 As we mentioned earlier, we would like
9 to ask the Board for detailed road design and the
10 associated risk assessment that Can Zinc has already
11 said that they're going to do. We want that to be a
12 requirement for the review and approval of the water
13 licence and land use permit.

14 Secondary to that, this is what's on
15 our actual presentation, Canadian Zinc has made kind
16 of some general commitments regarding avalanche
17 hazards that are on the commitments table for the
18 project. At this stage in the EA, although we
19 recognize that Canadian Zinc has committed to general
20 mitigations proposed for avalanches, it's been de --
21 deferred to the detailed design phase of the project.

22 And we're looking for -- you know,
23 we're asking the Board just for a more detailed
24 commitment in the commitment table. The reason that
25 we want this is we just want absolute clarity on -- on

1 what the Developer is committing to in the commitments
2 table so that it's clear when we move on to later
3 permitting that we're clear what those commitments
4 look like. And we provided those details in our
5 technical report, so you can refer to that there. I
6 won't list them again.

7 Also, there is some evidence with
8 climate change that there could be changes to
9 avalanche conditions and possibly increased avalanche
10 risk. In the avalanche hazard report there was
11 indication there that there could be high avalanche
12 hazard from March onward.

13 But we just have concerns that from
14 December to February that there could exist some
15 hazard during that period of time and that when
16 Canadian Zinc goes forward and does their hazard
17 management plan, that they consider how to deal with
18 potential avalanche risks during the whole winter
19 season, not just in March. This could be a total
20 nonissue. It's just we don't have an understanding
21 from their Alpine solutions report of whether or not
22 avalanches are a risk all winter long or just in
23 March.

24

25 (BRIEF PAUSE)

1 MS. CARRIE BRENEMAN: That's all for
2 our presentation today.

3

4 QUESTION PERIOD:

5 THE CHAIRPERSON: Questions from the
6 presentation, Environment Canada?

7 MS. EMILY NICHOL: Emily Nichol, from
8 Environment and Climate Change Canada. We have no
9 questions at this time. Thank you.

10 THE CHAIRPERSON: Questions, Fisheries
11 and Oceans?

12 MS. VERONIQUE D'AMOURS GAUTHIER:
13 Thank you, Madam Chair. Veronique D'Amours Gauthier,
14 with Fisheries and Oceans Canada. We don't have any
15 question.

16 THE CHAIRPERSON: Questions,
17 Government of the Northwest Territories?

18 MS. LORRAINE SEALE: Lorraine Seale,
19 GNWT. No questions.

20 THE CHAIRPERSON: Questions,
21 Indigenous and Northern Affairs Canada?

22 MR. MIKE ROESCH: Mike Roesch, for
23 INAC. We have no questions. Thank you.

24 THE CHAIRPERSON: Questions, Liidlii
25 Kue First Nations?

1 MR. DEAN HOLMAN: Dean Holman, with
2 Liidlili Kue First Nation. LKFN has no questions at
3 this time. Thank you.

4 THE CHAIRPERSON: Questions, Nahanni
5 Butte Dene Band?

6 MR. GARTH WALLBRIDGE: Garth
7 Wallbridge, for the Nahanni Butte Dene Band. No
8 questions. Thank you.

9 THE CHAIRPERSON: Questions, Natural
10 Resources Canada?

11 MR. DANNY WRIGHT: Danny Wright,
12 Natural Resources Canada. We have no questions.

13 THE CHAIRPERSON: Questions, Parks
14 Canada?

15 MS. ALLISON STODDART: Allison
16 Stoddart, Parks Canada. We have no questions.

17 THE CHAIRPERSON: Questions, Canadian
18 Zinc?

19 MR. DAVID HARPLEY: It's Dave Harpley.
20 A couple of comments if I may. On the first
21 recommendations at the opening of the presentation, I
22 think we will deal with those in closing remarks later
23 on in the process. And on the second aspect regarding
24 avalanches, I did want to point out on a procedural
25 matter that we do already have a winter road permit,

1 and these commitments regarding avalanches is already
2 built into that permit. And -- and the commitments
3 that are made associated with it, those commitments
4 are carried forward to this process as well.

5 We've basically committed to follow
6 through on all of the recommendations in the Alpine
7 Solutions report. So whatever the professionals come
8 up with regarding avalanche planning through the
9 entire winter period, we'll be okay with. So I don't
10 believe there's any need to broaden those commitments
11 at this point.

12 THE CHAIRPERSON: No more questions or
13 comments? Okay.

14 Questions, Review -- Review Board staff
15 and counsel?

16 MR. MARK CLIFFE-PHILLIPS: Mark
17 Cliffe-Phillips. Review Board staff and counsel have
18 no questions. Thank you.

19 THE CHAIRPERSON: Questions from Board
20 members?

21

22 (BRIEF PAUSE)

23

24 THE CHAIRPERSON: Thank you for your
25 presentation. Masi cho.

1 At this time, we would now like to open
2 the floor to public comments. And we had one (1)
3 person that signed up, Raymond Michaud.

4 MR. RAYMOND MICHAUD: Thank you, Madam
5 Speaker and the Board. Name is Raymond Michaud, just
6 public concern.

7 Just so you know, I have forty (40)
8 years' experience on winter road travel. When I came
9 here in 1966, that's all we had was winter roads.
10 Right from Providence, there was no other road. Even
11 from Peace River to Providence, it was all gravel.

12 So the question I have, or the comment
13 I want to make is that I believe Oboni and Canadian
14 Zinc both agree that winter road travel is a greater
15 risk factor than regular roads. Am I correct in
16 making that statement? I believe that was the
17 statement that was made previously.

18 So with that assumption, we could
19 assume that a full-time road has a less risk factor.
20 So let's take Canadian Zinc. Prior to Canadian Zinc,
21 Prairie Creek was there.

22 All those buildings, the mine, the --
23 all the material that's out there wasn't there when
24 they got there, meaning it wasn't part of nature. It
25 had to get there. So we do have winter road travel to

1 the area that we're presently debating.

2 Now, think of the past. We didn't have
3 regulations with truck drivers where they had to quit
4 driving after a certain amount of hours. So fatigue
5 was very common with the truck drivers.

6 The road was a winter road. The
7 hauling was big hauling. Like, they had huge hauling,
8 fuel, et cetera, and numerous trucks going onto the
9 winter road. There is your area of facts.

10 What they showed, those three (3)
11 pictures of paved roads, and number 3 which we
12 consider better road condition than Fort Simpson, and
13 be damned if they're only doing 30 kilometres on that
14 road. I know they were doing more. I'm talking
15 winter road.

16 So go back on the facts. How many
17 accidents did they have on the initial haulage to
18 Prairie Creek Mine on the winter road when regulations
19 dealing with trucks, and drivers, and time that they
20 put into it did not exist? You'll probably find it's
21 very minimal, if any. I can't recall any accidents on
22 that road.

23 We hauled fuel as far north as Norman
24 Wells, believe it or not, Fort Norman and all that, on
25 winter road to north. We followed roads that were

1 less than 5 metres. They were called catrays
2 (phonetic), and they were leading us with our trucks
3 to go into Trout Lake.

4 So the situation then was very common,
5 and accidents were far and few between. Most of our
6 accidents were due to lack of bridges, and it's what's
7 called ice that would cause us to go off the road or
8 whatever. But actual collisions did not exist.

9 Example: corners. Turn off your
10 lights. If anybody's coming at you at night, you can
11 see him coming around the corner with his lights. As
12 long as we don't both turn our lights off at the same
13 time. So nighttime driving was safer than daytime.

14 But go to Prairie Creek Road, winter
15 road, in the past when they did all that hauling, and
16 you'll find that the accidents were minimal, if any.
17 And that is what I would call your -- to determine
18 your risk factor on a road that we're presently
19 talking about.

20 And where the regulations are a lot
21 stricter, and it's just beyond belief what that --
22 what I'm hearing, especially from the presentation
23 from a guy from, where was it, Sweden? You know, and
24 -- and looking at those pictures. No, I don't agree
25 with what he was saying.

1 Go on the past facts. Thank you.

2 THE CHAIRPERSON: Thank you. Public
3 comments?

4

5 (BRIEF PAUSE)

6

7 THE CHAIRPERSON: Public comments?

8

9 (BRIEF PAUSE)

10

11 THE CHAIRPERSON: Final call for
12 public comments.

13

14 (BRIEF PAUSE)

15

16 THE CHAIRPERSON: Okay. The meeting
17 is now officially adjourned until tomorrow morning
18 starting at 8:30 again. Thank you.

19

20 --- Upon adjourning at 5:18 p.m.

21

22 Certified by,

23

24 _____

25 Robert Keelaghan, Mr.

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