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MACKENZIE VALLEY ENVIRONMENTAL
IMPACT AND REVIEW BOARD

GIANT MINE REMEDIATION PROJECT
ENVIRONMENTAL ASSESSMENT 0809-001

TECHNICAL SESSION

The Facilitators: Alan Ehrlich
 Paul Mercredi
 Darha Phillpot

HELD AT:

 Yellowknife, NT
 October 20, 2011
 Day 4 of 5

	APPEARANCES	
1		
2	Alan Ehrlich	) MVEIRB staff
3	Paul Mercredi)
4	Jessica Simpson (np))
5	Darha Phillpot (np))
6	Doug Ramsey	) Tetrattec
7	Dave Tyson	) Tetrattec
8	Cesar Oboni)
9	Lukas Arenson	) BGC
10	Jack Seto (np)	) BGC
11		
12	Joanna Ankersmit	) AANDC
13	Lisa Dyer	) PWGSC
14	Adrian Paradis	) AANDC
15	Dr. Ray Case	) GNWT
16	Mark Cronk	) PWGSC
17	Daryl Hockley	) SRK
18	Darren Kennard (np)	) Golder
19	David Knapik (np)	) AECOM
20	Yose Cormier	) AANDC
21	Henry Westermann	) PWGSC
22	Katherine Silcock	) AANDC
23	Erika Nyssonen	) GNWT
24	Dave Abernethy	) PWGSC
25	Bruce Halbert	) SENES

1 LIST OF APPEARANCES (Cont'd)

2 Rudy Schmidtke) AECOM

3 John Hull) Golder

4 Octavio Melo) AANDC

5 Michael Nahir) AANDC

6 Dan Hewitt (np)) SRK

7 Doug Townson (np)) PWGSC

8 Robert Boon (np)) AECOM

9 Kyla Kirk (np)) AECOM

10 Hilary Machtans (np)) Golder

11 Nathan Schmidt (np)) Golder

12 Till Freihammer (np)) AECOM

13 Gord Woollett (np)) AECOM

14 Arthur Cole) Golder

15 Greg Newman) NGI/SRK

16 Tony Brown) SENES

17 Mark Palmer) PWGSC

18 John Hill) Golder

19

20 Jeff Humble (np)) City of Yellowknife

21 Dennis Kefalas (np)

22 Dennis Marchiori)

23

24

25

1 LIST OF APPEARANCES (cont'd)

2 Morag McPherson) DFO

3 Rick Walbourne)

4 Sarah Olivier (np))

5

6 Amy Sparks) Environment Canada

7 Lisa Lowman)

8

9 France Benoit) Alternatives North

10 Kevin O'Reilly)

11 Ed Hoeve (np)) EBA Engineering

12 Bill Horne (np)) EBA Engineering

13

14 Todd Slack) YKDFN

15 Randy Freeman (np))

16 Lukas Novy) ARKTIS

17

18 Ricki Hurst (np)) DPRA Canada

19

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22

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1 --- Upon commencing at 9:07 a.m.

2

3 OPENING COMMENTS AND RECAP:

4 THE FACILITATOR EHRLICH: Good morning.
5 Good morning, everybody. It is a little bit past nine
6 o'clock, and I would like to get going because as we've
7 discovered on the previous days, slippage is an easy trap
8 to fall into -- slip into -- slip into, and we're --
9 we're trying to take care of that.

10 As I mentioned yesterday morning, and
11 everyone agreed, we're gonna go as long as we need to
12 tonight. Wait a second. We're going to go as long as
13 until they throw us out of this room tonight, which will,
14 I think, be around eight o'clock.

15 If we get everything done by five o'clock,
16 then we're going to shut 'er down by five o'clock. If we
17 don't, then we will give you the -- the food you'll need
18 to carry on, and then keep on trucking until -- until we
19 get it all resolved, or -- or they make us leave the
20 venue.

21 But this is again something that is
22 particularly in response to the concerns that we've heard
23 from the Yellowknives before and during the session, and
24 things during the session are working well, so I want to
25 try and pack as much good stuff into it as I -- I can.

1 I think they're working well because the
2 parties here seem quite serious about understanding the
3 project and asking questions that are constructive, and
4 for the most part within the scope of the environmental
5 assessment, and that's quite an important thing.

6 I know it's more complicated for this
7 project than it has been for some others. And the
8 developers, from where I'm understanding, appear quite
9 serious about providing substantial responses to the
10 questions, and have got the technical team they need to -
11 - to do that.

12 Today the main part of the day is going to
13 be on risk assessment -- may I have a peek at that -- the
14 main part of the day is going to be on risk assessment,
15 but as promised yesterday, there's an opportunity to pick
16 up a few loose ends regarding surface remediation.

17 We know there's still a few questions out
18 there, so we're going to start with the surface
19 remediation material, then go to the developer's
20 presentation on risk assessment, and then go to questions
21 from the parties, which I believe will take us to lunch.
22 I -- I hope we have time for questions from the parties
23 before lunch on that. And then the rest of the afternoon
24 is going to be questions from the parties, as well as the
25 Review Board's experts.

1 The wrap-up time on the agenda, as I said,
2 is not accurate. I'm going to try to break for -- sorry,
3 it will not be me trying to break for lunch at 11:55 --
4 Chuck -- but -- but we want to try and break five (5)
5 minutes before lunch because it makes it a lot more
6 efficient to get to the restaurant, and then pay your
7 bill and come back in time.

8 We have a sign-in sheet right here. I'm
9 not going to do a Round Robin because there's no one in
10 this room today who I haven't seen previously, so you
11 know who each other are, and you've -- you've heard each
12 other's names many times. But please sign in on the sign
13 sheet, it matters, particularly because of our
14 transcription.

15 Again, my admiration to tscript.com. They
16 got the transcripts for yesterday up this morning, which
17 -- last night, and we're talking about a few -- a few
18 hundred pages of material that -- a few hundred pages of
19 -- of detailed material, and it's a helpful resource.

20 And if you're going away doing any
21 homework tonight or anything like that in preparation for
22 tomorrow, remember that it's there as a useful tool to
23 look back on. Of course, it forms part of the body of
24 the evidence. It's on the public record.

25 I'm going to say the few things that are

1 crucial enough so that I feel I have to say them at the
2 beginning of every day, even though you've heard them
3 yesterday. This is not a hearing. We are not Board
4 members; we are staff. The intention here is a technical
5 exta -- exchange of information between experts and
6 specialists, and -- and the parties; however, it is a
7 public venue so if people want to come in, and sit down
8 and listen they're certainly welcome to.

9 The media remains interested in this
10 subject, and in -- for the past two (2) days there has
11 been agreement from everyone here; no one had a problem
12 with them using our audio file for snippets when
13 necessary.

14 I will ask CBC, although I know there was
15 a journalist a few minutes ago but I don't see her now,
16 again we will ask them to not interview or ask questions
17 during the session, but to try and hold interviews in the
18 hallway or in other rooms either during the break, before
19 tomorrow, or after today. I'm guessing after tomorrow's
20 session probably won't work, because there'll probably be
21 a lot of people get -- heading towards planes.

22 The reason why we're going extra long
23 tomorrow -- today is to try and make sure that we're
24 caught up so that we can tackle tomorrow's agenda in the
25 time we have available.

1 The washroom is still down the hall, the
2 keys are still -- I believe the keys are still in the
3 little dish next to the mints on the bar. If they're
4 not, please think about what's in your coat pockets,
5 because you might have pocketed them accidentally. This
6 happened a few times earlier in the week.

7 Remember to say your names, and everyone's
8 been pretty good about saying your names.

9 I remind the developer again to continue
10 doing what they've been doing very well, which is, if
11 there's been a divergence between where your thinking is
12 at now for the project from where it was at back when you
13 wrote the DAR, making it clear for parties, because it
14 helps everyone keep up.

15 It would be very useful if you could flag
16 the major item -- any major items that have changed in a
17 written undertaking for the 14th, not exhaustively, but
18 enough so that we at least know which parts of the
19 transcript to refer to, to find out the details. It
20 would be the easiest possible way, I think, to more or
21 less update the DAR to -- to where -- where your thinking
22 is at.

23 I'd like to propose that as an undertaking
24 to the Giant team. Again, I'm not looking for a vast
25 treatise on this. You can use the transcript to show

1 people what has changed, and all you'd really need to do
2 with the undertaking is point people to the right times
3 where you've discussed this stuff during the sessions.

4 Is that something you're willing and able
5 to do for the 14th of November?

6 MR. ADRIAN PARADIS: Adrian Paradis, for
7 the Giant team. Just so we have an understanding, so
8 what you're asking is a -- a summary of where we're at
9 and a -- and a -- where we're at with the design and
10 changes from the DAR, and then refer it back into the
11 transcript so people can have an understanding.

12 THE FACILITATOR EHRLICH: Kind of. What
13 you just said is a little more ambitious than what I
14 said. To summarize where you're at is a very big deal,
15 because it's a very complicated -- you -- you know better
16 than anyone how complicated this project is, but to at
17 least flag what you consider to be the important changes
18 to design since the time that the DAR was written, and --
19 and then do what you said, link it back to the
20 transcript. So that you don't need to describe what --
21 the changes in design; you just need to point people in
22 the right direction to where you've already described it.

23 And during the session, the Giant team has
24 been very good about making quite clear where there's
25 been any -- any progression in the design. So it --

1 it'll all be captured on the transcript. Use the
2 transcript to save yourself some -- some labour.

3 Lisa, do you have a question?

4 MS. LISA DYER: Lisa Dyer. No. I just
5 wanted to clarify. It's not changes to the DAR. It
6 really is advancement in design thinking. And so I just
7 want to clarify. I -- I understand what you're -- you're
8 not saying it's a complete change to the DAR, but we just
9 want to be clear and make sure that it's on the record
10 that we -- we've advanced design thinking, and it's still
11 -- we're staying with the main concepts; we're just
12 moving forward in design, and there are some
13 modifications, and we're more than happy to indicate
14 where those have happened.

15 THE FACILITATOR EHRLICH: That's my
16 understanding, too, Lisa. The stuff in the DAR, if it is
17 not accurate, I assume you would have shown that, but
18 what I'm referring to is the ongoing progress of
19 engineering and design in response to your own technical
20 internal reviews, and the stuff you're hearing from the
21 outside. And with every project, we see that this
22 marches on, not only through the environmental
23 assessment, but to -- through the regulatory stage, and
24 then into the project implementation stage normally. And
25 so all I'm trying to say is we need to be pretty clear

1 where you're at.

2 It -- it would be helpful -- you guys have
3 enough brains working on this hard enough so that we've
4 already seen some engineering progress even since the
5 time of the DAR, and I want to make sure that parties are
6 able to -- to figure out where that was.

7 MS. LISA DYER: Lisa Dyer. We are more
8 than happy to indicate where we've made progress.

9 THE FACILITATOR EHRLICH: And I'm more
10 than happy to take yes for an answer, so thank you.

11 MR. ADRIAN PARADIS: Is this undertaking
12 number...

13

14 (BRIEF PAUSE)

15

16 THE FACILITATOR EHRLICH: Under -- number
17 9. We're on Undertaking number 9. So that would be by
18 November 14th. Thanks.

19 Alternatives North has a -- is it a
20 question or a comment?

21 MR. KEVIN O'REILLY: Thanks. Kevin
22 O'Reilly, Alternatives North. I understood they already
23 agreed to do this yesterday or the day before. I think
24 the new part was adding on the references to where items
25 may have been discussed in the transcript. I think that

1 would be really helpful, but I understood that they
2 already agreed to do this.

3 I don't have the list of undertakings in
4 front of me, but I understood they had already agreed to
5 summarize the major chan -- now I don't want to use the
6 word "changes," design refinements, or whatever they want
7 to call it, from the DAR to the -- the presentations
8 we've got here.

9 So the reference to transcripts, though,
10 would be really helpful. So I -- I think if you want to
11 modify this, go back and add that item onto the previous
12 undertaking. I think that would be a more helpful way to
13 approach it.

14

15 --- UNDERTAKING NO. 9: For Giant Team to flag what
16 they consider to be the
17 important changes to design
18 since the time that the DAR
19 was written and then link it
20 back to the transcript.

21

22 THE FACILITATOR EHRLICH: I see that as a
23 pure administrative matter.

24 MR. KEVIN O'REILLY: They're even
25 nodding. They agree with me.

1 THE FACILITATOR EHRLICH: A purely
2 administrative matter. The point is that everyone agrees
3 that this is something that would be helpful and the --
4 and the Giant team is prepared to do.

5 Onward and upward. We have some -- we
6 have a -- a comment from the Yellowknives.

7 MR. TODD SLACK: Todd Slack, YKDFN. One
8 (1) thing that it occurs to me might be useful to include
9 within that is when Kevin says, "or whatever you call
10 it", I think that one (1) of the problems we're having is
11 terminology.

12 So I think when we tal -- for -- as an
13 example, we talked about implementation and then
14 operations. If you came up -- and this was very useful
15 in the closure processes that we've been through, because
16 you often use objectives/goals interchangeably, but
17 they're -- if they have defined definitions it would help
18 everyone as this process moves forward. Just a
19 suggestion.

20 THE FACILITATOR EHRLICH: Can you
21 rephrase that suggestion in a succinct way, because I'm
22 kind of trying to recap it my mind and it's not -- I
23 understand that clear terminology is helpful, but what
24 exactly is it you're requesting?

25 MR. TODD SLACK: The suggestion would be

1 to include a -- a list of terms, perhaps, that provides
2 def -- clear definitions for those terms that were
3 routinely, I think, confusing in this process. As -- as
4 the team said, any step forward is a step forward here.

5 THE FACILITATOR EHRLICH: I see the Giant
6 team nodding. Would you care to respond?

7 MR. ADRIAN PARADIS: Yes, we'll do that.
8 Sorry, Adrian Paradis.

9 THE FACILITATOR EHRLICH: And I would
10 encourage the Yellowknives, if there are terms that have
11 been particularly problematic, to please send them to the
12 Giant team by email, copy the Board if you like, just to
13 make sure that the terms that you have in mind are -- are
14 the ones that you -- you have defined.

15 But everyone seems okay with this. Let's
16 move onto the -- the next item which is where we start
17 the technical goodness and we'll start by picking up
18 where were at yesterday.

19 The parties had more questions regarding
20 surface remediation. Who would like to start? Kevin
21 O'Reilly from Alternatives North, please go ahead.

22 MR. KEVIN O'REILLY: Thanks. Kevin
23 O'Reilly, Alternatives North. Alan, I just have one (1)
24 procedural item that I wanted to bring forward before I
25 start. And I want to thank Michael Nahir for following

1 up with one (1) of our technical consultants, Bill Horne,
2 with EBA Engineering.

3 And there was a -- an email exchange
4 between Bill and Michael yesterday late in the afternoon
5 and I just want to read this into the record:

6 "Kevin, I got a call from Michael Nahir
7 about the wetting and freezing issue.
8 Mike said they are going to develop
9 this plan further and give ourselves
10 and the Board (Lukas Arenson) a chance
11 for further review. This sounds like a
12 good way forward. Mike is going to get
13 back to us in a couple of days -- in --
14 in a couple of days about the schedule.
15 Bill Horne, EBA."

16 So I guess I'm not quite sure how you want
17 to handle this, whether this should be a -- an
18 undertaking from the -- the developer to provide this
19 information or how -- how you want to handle it.

20 I guess if it came in before the end of
21 the day tomorrow it might not be an undertaking, but I'm
22 just worried that -- I think it should be probably an
23 undertaking unless we get it by the end of the day
24 tomorrow. Thanks.

25 THE FACILITATOR EHRLICH: There's a

1 procedural complexity with having the Review Board's
2 internal experts, which are not parties, and not
3 interacting with the record the way that external parties
4 do, engaging in direct technical discussions outside of
5 the technical sessions.

6 I'm not sure if I understood exactly what
7 you just said. I'd like to take a minute right now, have
8 a look at the email you just read so that I can think
9 about this carefully from a procedural fairness
10 perspective.

11 MR. KEVIN O'REILLY: Thanks. Kevin
12 O'Reilly. The email was copied to Lukas. I don't think
13 he initiated it in any way, but I think there was some
14 interest. I don't want to speak for Mr. Arenson, but go
15 ahead and look at it. Thanks.

16

17 (BRIEF PAUSE)

18

19 THE FACILITATOR EHRLICH: Okay. I
20 believe that the -- the fair way to move forward on this
21 is, Mike, if you have any further developments that you
22 want to put forward during the technical sessions, our
23 experts are participating in the technical sessions as
24 they have been.

25 You've said in -- Bill Horne has told

1 Kevin here that -- that you've said you're gonna further
2 develop the plan and share it with them. Sharing it with
3 the parties; great, strongly encouraged.

4 People in this room should understand that
5 if after this technical meeting -- technical session
6 parties want to go and meet amongst themselves, and I'm
7 including the developer when I say "parties" here, it --
8 the Board strongly encourages that. If you can work out
9 stuff amongst yourselves without doing it all in our --
10 either on our website or in our -- our venues, that's --
11 that's great.

12 We do have a specific form for parties to
13 give summaries of these meetings. Because in the past
14 before we had a format for that, parties would go to the
15 same meeting but then they'd come back as if, in some
16 cases, they hadn't been to the same meeting.

17 And so we've got a report form for the
18 meeting which summarizes what was discussed about, who
19 took what positions, where you wound up, and both parties
20 sign it, and then that goes on the record.

21 And -- and that way other parties have the
22 advantage of understanding what was discussed, at least
23 in summary, without having to do everything in the -- in
24 the middle of a Board forum.

25 We -- I -- I'd be happy to put that on the

1 record, that meeting report form, if it's of any use. My
2 suggestion is, instead of copying the results directly
3 back to Lukas Arenson, anything relevant from that, just
4 give to the Review Board, we'll put it on the record.
5 The Review Board's internal experts look at everything on
6 the record, and take it under consideration.

7 However, Mr. Aren -- Arenson would not be
8 able to wade back into the discussion as it evolves in
9 that meeting because we have to make sure that our
10 experts are not put in a position of judging their own
11 work later on.

12 And this is just a fundamental principle
13 of procedural fairness. That's why I'm -- I'm trying to
14 handle this a bit carefully.

15 So everything I've seen in the email I'm
16 reading, which Kevin just read for the record, is you
17 working closely with the parties -- the -- the Giant team
18 working closely with the parties to sort the stuff out is
19 great.

20 If there is technical material that is --
21 is germane to what the Board does, put it on the record.
22 Our experts will see it there, but they can't engage in
23 further discussion outside of a forum like this. Thanks.

24 MR. KEVIN O'REILLY: Thanks, Alan. Kevin
25 O'Reilly, Alternatives North. Look, I don't want this

1 form, quite frankly. I just want the stuff put on the
2 public registry for everybody to see it. So, I guess
3 I'll seek it as an undertaking then from the developer.
4 I think that's just a cleaner way to do it.

5 Doing a form, having our engineer review
6 it, like that starts ka-ching, ka-ching, ka-ching. I
7 don't want to pay for it quite frankly, so just file the
8 stuff on the public registry, and then everybody can have
9 a look at it.

10 And if we have any additional questions,
11 we can file an IR. Thanks.

12 THE FACILITATOR EHRLICH: It's -- it's a
13 modest enough task so that if the Giant team agrees to do
14 it, I -- I don't think we need to make it a formal
15 undertaking. I -- I see no reluctance on the Giant's
16 team to do it, and -- and no reason to think they won't.

17 Giant team, are you okay with -- with
18 doing this not as a formal undertaking? Kevin, I -- I
19 can see that -- that this doesn't give you the comfort
20 you were looking for with this, so I'll ask the Giant
21 team then: Are you prepared to make this an undertaking
22 for November 14th?

23 MR. ADRIAN PARADIS: Adrian Paradis, for
24 Giant team. Yes, we'll submit this on the 14th.

25 MR. KEVIN O'REILLY: Thanks. Kevin

1 O'Reilly, Alternatives North. Yes, and I think that's
2 the procedurally fair way to do it so that Lukas can then
3 have a look at it, or other parties who may have an
4 interest in this can look at it.

5 So -- because if it's just between the two
6 (2) of us it doesn't go on the Review -- on the Review
7 Board public registry. I -- that's where I think I want
8 it to go. Thanks.

9 THE FACILITATOR EHRLICH: And, Kevin, to
10 be -- be clear, what I heard from them was they were
11 going to get back to you and copy the Review Board. It
12 was never my intention that it wouldn't go on the public
13 registry, which means that Lukas would still have a
14 chance to -- to look at it during the process.

15 I'm just trying to keep it efficient and
16 not overload the undertaking list with a -- a pile of
17 tiny things. To me this is a small thing that everyone
18 agrees on, but they've agreed to do it as an undertaking
19 and that's fine.

20

21 --- UNDERTAKING NO. 10: Giant Mine Team will advise
22 when they will have timelines
23 and a scope for a plan for
24 the wetting

25

1 THE FACILITATOR EHRLICH: Okay.
2 Questions from the parties regarding surface remediation.
3 At the end of the day yesterday we heard that there were
4 some.

5 Environment Canada and DFO, do you have
6 anymore questions regarding surface remediation that you
7 didn't have an opportunity to ask yesterday?

8 MS. MORAG MCPHERSON: Morag McPherson,
9 Fisheries and Oceans. No, we have no further questions
10 on the surface remediation topic.

11 THE FACILITATOR EHRLICH: And how about
12 Environment Canada?

13 MS. AMY SPARKS: Amy Sparks, Environment
14 Canada. We don't have any questions either. Thank you.

15 THE FACILITATOR EHRLICH: Alternatives
16 North, you indicated at the end of yesterday that you
17 might have some questions for this morning. Do you still
18 have them?

19 MR. KEVIN O'REILLY: Yes. Kevin
20 O'Reilly. They didn't go away last night. Maybe I'll
21 start with slide 81 in the presentation. There was --
22 this was new information that the CALPUFF modelling for
23 the Jackfish Plant was being redone.

24 And I'm just wondering -- and the reason
25 why I'm asking this, I think this is a -- a critical

1 piece of work in terms of doing a proper cumulative
2 effects assessment of air emissions from the project and
3 from Jackfish.

4 So I'm just wondering when that CALPUFF
5 modelling is gonna be done and whether it's gonna be done
6 in time for the end of the Environmental Assessment.
7 Thanks.

8 MR. ADRIAN PARADIS: I can answer, Lisa.
9 Adrian Paradis for the Giant Mine Project Team. SENES is
10 currently just starting to do the work. It'll likely be
11 finished in December. We'll have to review it. We'll
12 probably be looking at sometime in late January, early
13 February to submit that work.

14 MR. KEVIN O'REILLY: Thanks. Kevin
15 O'Reilly, Alternatives North. And that will be submitted
16 then to the Review Board for the public registry,
17 presumably? Thanks.

18 MR. ADRIAN PARADIS: Yes. Adrian
19 Paradis. This will be submitted to the public registry.

20 MR. KEVIN O'REILLY: Great. Thanks.
21 Kevin O'Reilly. As I understand it, a number of -- or a
22 bunch of surface debris, demolition materials debris, and
23 I'm not going to -- I may not get the terminology right,
24 so don't get too excited, hazardous, maybe some non-
25 hazardous waste is gonna be put as a backfill into the B1

1 Pit.

2 And I know there's going to be some
3 thermosyphons put in to freeze that material in place.
4 So those thermosyphons, are they there to just freeze the
5 material in place or do they actually go right down into
6 -- below the B1 Pit to freeze the arsenic chambers as
7 well? Thanks.

8 MR. MARK CRONK: Mark Cronk. Probably
9 the easier way to do it, Kevin, is we need to freeze the
10 arsenic chambers that are in the wall of the pit, but we
11 need to drill vertical pipes. The surface doesn't exist
12 where we need it to.

13 So what we're doing is taking the more
14 highly contaminated material, putting it against the wall
15 of the pit so it gets incorporated into the freeze zone
16 for the chambers. Does that answer your question?

17 MR. KEVIN O'REILLY: Thanks. Kevin
18 O'Reilly, Alternatives North. I think it does. So
19 there's just basically one (1) set of pipes to freeze
20 both the -- the chambers and the contaminated materials
21 as backfill?

22 MR. MARK CRONK: That is correct.

23 MR. KEVIN O'REILLY: Okay. Thanks.
24 Kevin O'Reilly. I just -- I'm not sure I'm really
25 comfortable -- I understand the need to contain the

1 contaminated surface materials. I just wonder whether we
2 might find a better place for them and that might be a
3 cause of -- for some de -- debate.

4 What I'm getting at is the reversibility
5 of the frozen blocks that are underneath the contaminated
6 materials. Because if at some point in the future we
7 ever want to go back under there and get at that stuff
8 we've got to remove all this other stuff that's
9 contaminated first.

10 And I'm not quite sure what's involved in
11 thawing that out and how you properly manage that and so
12 on, but presumably, the developer looked at the tradeoffs
13 associated with putting this -- the -- the contaminated
14 material somewhere else versus putting it on top and then
15 freezing it. But I'm concerned about reversibility and -
16 - and whether we -- there's opportunity costs that might
17 be associated with putting the contaminated materials as
18 backfill.

19 So any -- any comments or thoughts about
20 that? Thanks.

21 MR. MARK CRONK: Mark Cronk. Question
22 for you, Kevin. The reversibility aspect in going back
23 in, are you referring to going back in to get the arsenic
24 dust out of the chamber, or the contaminated material,
25 soils?

1 MR. KEVIN O'REILLY: Thanks. Kevin
2 O'Reilly. No, I'm talking about the -- the frozen block,
3 ex-situ extraction, reprocessing, blah-blah-blah. Not
4 in-situ; I don't want to go back there right -- right
5 now, but, yeah, extraction. Thanks.

6 MR. MARK CRONK: Mark Cronk. It's my
7 opinion that the material that we'll be using for
8 backfill in the pit -- hang on one (1) second. I'm
9 sorry.

10

11 (BRIEF PAUSE)

12

13 MR. MARK CRONK: Mark Cronk. Always fun
14 listening to a bunch of technical people talk about a
15 question, and all good stuff.

16 Kevin, the backfill does several things
17 for us: it -- the open-pit operations occurred after the
18 creation of those stopes, so the backfill produces
19 stability, you heard, and Darren Kennard's need to
20 stabilize adjacent rib pillars to the chambers, so the
21 backfill does that.

22 In terms of reversibility, it does not
23 impair that option at all.

24 MR. KEVIN O'REILLY: Okay. Thanks.
25 Kevin O'Reilly. I'll have to mull that one over, I'm not

1 sure having backfill with contaminated materials is a
2 great idea, but I -- I can live with your response for
3 now. Thanks.

4 As I under -- oh, sorry. I think Lukas
5 Novy whispered in my ear that he might have a quick
6 followup, so I just wanted to let him to do that, Alan,
7 if I could. Thanks.

8 MR. LUKAS NOVY: Thanks, Kevin. Just a -
9 - a followup to -- for the contaminated soils in -- in B1
10 and then in tailings. I know the original plan that was
11 outlined was that B1 would be filled, and whatever
12 remaining volumes would go into the tailings area.

13 And now, I just know that in the -- in
14 yesterday's presentation, the actual volumes of the soil
15 now are significantly more than was initially presented
16 in the DAR, and I guess I just want to get an
17 understanding of the -- the methodology for -- for
18 putting in the -- the contaminated material in the B1
19 pit.

20 What is the primary objective of this? Is
21 it to put in the most contaminated, or is there equal
22 performance for the tailings or the pit, or is it more
23 from a stability aspect of -- of drilling in the holes
24 for the freeze chambers? I just want to get an idea of,
25 when this is actually going to be happening what is the

1 overall methodology that's going to be put in play for
2 the soils into the B1 Pit?

3

4

(BRIEF PAUSE)

5

6 MR. MARK CRONK: Mark Cronk. Good
7 question. There's a subtlety in the backfill of the B1
8 Pit scenario. There's two (2) zones of contaminated
9 material within the B1 Pit. The highly contaminated
10 material, primarily arsenic trioxide-containing material,
11 from around the mill complex is intended to be in the
12 freeze zone; the less contaminated material would be in
13 between those two (2) zones, because the arsenic chambers
14 are on both sides, or opposite sides of the pit.

15 So, yeah, the methodology is, we need a
16 place to put that material. The material is granular
17 material which we can drill through, which is a
18 consideration, and it would be put in in engineered
19 lifts.

20 And the last comment I would make, going
21 back to Kevin's, is that any infiltration into that
22 backfill ultimately repours to the general minewater, is
23 picked up by the water treatment plant and treated. So
24 if that answers your question.

25 MR. LUKAS NOVY: Thanks, Mark. Lukas.

1 THE FACILITATOR EHRLICH: I have a
2 question on surface remediation that touches on something
3 I talked about a little bit yesterday. I talked about
4 the roaster and the baghouse, and how there's a fair
5 amount of arsenic trioxide. I think the figure was
6 around seven (7) -- seventy (70) tonnes, but I could be
7 wrong.

8 Right now, it's in a facility that was
9 never designed for long-term storage of arsenic trioxide,
10 and it's something you'll have to be dealing with sooner
11 or later, and maybe sooner.

12 Do you guys have a plan, once that
13 remediation is done, and -- and I -- I got a very helpful
14 response from the Giant team on how you propose to do it
15 yesterday, when it's done, is that arsenic going to be
16 frozen along with the rest, assuming that it's under the
17 time? If there's any need to do it in the meantime, are
18 you planning to eventually freeze it? What's gonna
19 happen to the arsenic in the baghouse?

20 I know it's a very small quantity compared
21 to everything that's underground, but it helps me
22 remember the scale of the project when seventy (70)
23 tonnes of arsenic trioxide is considered a small
24 quantity.

25 MR. MARK CRONK: Mark Cronk. Good

1 question. An underlying principle in the DAR and the
2 RAP, and for the project team is that arsenic trioxide
3 dust, regardless of origin, is to end up inside one (1)
4 of the frozen zones.

5 THE FACILITATOR EHRLICH: If you should
6 have to, just due to the ongoing deterioration of the --
7 the baghouse, which I understood from one (1) of the mine
8 tours, that that structure's not in great shape -- if you
9 have to deal with it in advance, do you have some way to
10 store it between now and freezing? Is that -- that the
11 plan, just keep it somewhere safe and then -- and then
12 wait till you start with the frozen blocks, or -- or do I
13 misunderstand?

14

15 (BRIEF PAUSE)

16

17 MR. MARK CRONK: Mark Cronk. Yeah,
18 certainly the roaster complex and the baghouse assemblies
19 are in rough shape. It is one (1) of the priority
20 aspects that the Giant Mine team is looking at in terms
21 of some of the stability work that's proposed and
22 upcoming. My expectation is that works that we had to do
23 in advance of the final remediation would result in
24 arsenic materials being highly secure in containers for
25 an interim period, until the final remediation took

1 place, at which point they would be transported into one
2 (1) of the frozen zones.

3 THE FACILITATOR EHRLICH: But here we're
4 just talking about years, not decades, or centuries, or
5 millennia?

6 MR. MARK CRONK: Yeah.

7 THE FACILITATOR EHRLICH: Okay. That --
8 that helps. Thank you.

9 MR. MARK CRONK: Mark Cronk. That is
10 correct, short term.

11 THE FACILITATOR EHRLICH: Thank you. Do
12 the Yellowknives have any additional questions on surface
13 remediation? They've got two (2), and then we're going
14 to go to Alternatives North for more questions.

15 MR. TODD SLACK: Todd Slack, YKDFN. Two
16 (2) simple questions, I think. And the question was
17 yesterday, Is -- in terms of regulation and air quality,
18 is GNWT the regulator of air quality within
19 commissioner's land?

20 DR. RAY CASE: Ray Case, Giant Mine team.
21 I wish it was a simple question. Certainly with re --
22 with respect to air quality there's a number of different
23 aspects that we -- we need to consider.

24 There's air quality with respect to human
25 health and safety, there's ambient air quality, and

1 regulations of -- and control of ambient air quality, and
2 then there's regulation and control of emissions related
3 to air quality.

4 With respect to human health and safety,
5 that's something under the Worker Safety and Com --
6 Compensation Commission, and they have territorial
7 legislation with respect to that, and I'm not a -- an
8 expert on that, but that piece of the puzzle is within
9 the GNWT in -- in that commission.

10 With regard to ambient air quality --
11 quality, the GNWT has established guidelines for ambient
12 air quality, and these are based on national air quality
13 standards for carbon monoxide, PM2, ozone, NO2, SO2, and
14 particulates, or -- or dust.

15 We do not have regulations that place
16 limits on these, but we do have standards -- or sorry --
17 yeah, standards for these -- these materials.

18 Should we detect or suspect exceedances of
19 these standards, then under the Environmental Protection
20 Act we will engage those parties we believe responsible
21 for those exceedances, identify the requirement to
22 correct them. And should they not be corrected we can
23 step in with a stop work order and require those
24 exceedances -- stop the activity though -- that generate
25 those exceedances.

1 With regard to emissions, either point
2 source admissions or mobile source emissions, there are
3 no regulations established for -- for the North on these.

4 The Canadian Council of Ministers of the
5 Environment are currently working on an air quality
6 management system that will establish baseline industrial
7 emissions regulations that will apply in the -- in the
8 Northwest Territories, either through federal legislation
9 or territorial legalisation yet to be developed.

10 So not quite straightforward, but I thought
11 -- hopefully that covers the -- the gist of your
12 question.

13 MR. TODD SLACK: Thanks, that is -- it's
14 very helpful. But I do have two (2) particular points of
15 clarification, I guess.

16 So when Bruce went through his quick air
17 quality presentation there, he mentioned arsenic levels.
18 And, you know, they -- they've been declining, and they
19 seem to be within the -- a particular guideline, and for
20 -- forgive me for not knowing which one (1).

21 Would that fall within the second set of
22 criteria that you were talking about? I believe you
23 described them as ambient environmental, but I might be
24 conflating the words there.

25 That is clarification number one (1), and

1 clarification number two (2) is, How -- what department
2 and how would these things be enforceable?

3 Like -- sorry. Who would issue that stop
4 work order? Who -- what's -- I'm just trying to
5 understand the chain of enforcement that would be
6 attached to this for clarity.

7 MR. BRUCE HALBERT: Bruce Halbert for the
8 record. I'm going to deal with part one (1), and pass
9 the -- over to Ray.

10 The air quality standard I referenced
11 yesterday was one from Ontario as there isn't -- for
12 arsenic, specifically, as there isn't one currently for
13 the GNWT or for the -- our Canadian Guidelines. And that
14 is an ambient air quality criteria.

15

16 (BRIEF PAUSE)

17

18 DR. RAY CASE: Ray Case. The Government
19 of Northwest Territories has not specifically adopted an
20 arsenic guideline for the Northwest Territories. In
21 situations where we do not have a guideline our
22 Environmental Protection Act will look at those from
23 other jurisdictions.

24 And in the case of exceedances, the
25 Environmental -- Chief Environmental Protection Officer

1 does have an option or an opportunity to intervene with
2 those exceedances.

3 MR. TODD SLACK: Thanks. That's very
4 clear. Well, mostly. And then my last question, it --
5 it just comes to me now that we're looking at one (1) --
6 one (1) component of the -- of the power draw, and in
7 terms of community effects here, has anyone talked to
8 NTPC in -- in terms of the reliability of the system?

9 You know, we've been here four (4) days
10 and we've already seen one (1) power spike. Would the
11 addition of 3 megawatts, or however many megawatts in
12 terms of pull, would that al -- impact the reliability of
13 the system for Yellowknife and N'Dilo and Dettah?

14 MR. MARK CRONK: Mark Cronk. Yes, Todd,
15 we do meet fairly regularly and update the NTPC crowd on
16 what we are expecting to deliver as a grid load. For the
17 project itself, with respect to the freeze systems, if
18 there's a pause in power or we need to get off the grid
19 for some reason, there's a dialogue that goes on in those
20 situations with NTPC and the site now.

21 We would continue to liaise and
22 accommodate them as necessary. It would not impact the
23 freeze other than adding some time to it. Critical
24 infrastructure that must keep running on the site has
25 emergency standby generators. For example, the water

1 treatment plant, the new one (1) will have a generator.

2 Does that answer your question?

3 MR. TODD SLACK: It does, but I was
4 coming at it from the other point of view. Like from the
5 -- the residents of N'Dilo and Dettah, are they expecting
6 -- or could they -- should they expect to have lower
7 reliability with this additional power draw on the
8 system?

9 MR. MARK CRONK: Mark Cronk. I'm not
10 sure I should be speaking for the Power Corp's ability to
11 provide reliable power. If you don't object?

12 THE FACILITATOR EHRLICH: I -- I don't
13 think you should be doing that, but if your project is
14 likely to affect the availability of power for other
15 power users, then I can understand why the Yellowknives
16 are interested.

17 MR. MARK CRONK: Our peak load is
18 expected to be 3 megawatts out of twenty-seven (27). I
19 would not expect our project to have any reliability
20 impacts on NTPC. Mark Cronk.

21 THE FACILITATOR EHRLICH: Thanks for
22 that. Kevin, do you have any questions?

23 MR. KEVIN O'REILLY: Thanks. Kevin
24 O'Reilly, Alternatives North. Yesterday I did give them
25 a heads up. I'm wondering about the size of the treated

1 water storage pond. I was told I couldn't ask that
2 during the water stuff. But what's the size of this
3 treated water storage pond, and is it -- presumably it's
4 going to be heated and open.

5 And I guess I want to -- I might have
6 another question afterwards. So can you tell me what the
7 size of it is and where it's going to be located?
8 Thanks.

9 MR. RUDY SCHMIDTKE: Rudy Schmidtke,
10 Giant Mine Team. So I did -- thank you for the heads up
11 on that, and I did contact Bob Boon last night. The
12 current thinking is that we have two (2) storage cells,
13 both made of concrete and below the plant. So it's --
14 they're heated year round, so that will facilitate year-
15 round treatment.

16 Each cell is 800 cubic metres in size, for
17 a total of 1,600, which would give us about twelve (12)
18 hours of storage at -- at maximum capacity of 34 litres
19 per second, which is, I think, what we've had on the
20 documents, which is about 2900 cubes a day.

21 And again, any out of compliance water in
22 that case would be thrown back again for re-treatment.

23 THE FACILITATOR EHRLICH: Kevin...?

24 MR. KEVIN O'REILLY: Thanks. Kevin
25 O'Reilly, Alternatives North. So I -- I think I heard

1 Mr. Schmidtke say that they were gonna be below the
2 plant. So it's totally enclosed. It's not going to be
3 open to the surface or the air? Thanks.

4 MR. RUDY SCHMIDTKE: Rudy Schmidtke,
5 Giant Mine Team. That's correct.

6 MR. KEVIN O'REILLY: Thanks. Kevin
7 O'Reilly, Alternatives North. So presumably, if -- if
8 you reach the capacity in the storage areas, then you'd
9 start to go back into the mine and store the stuff there?

10 MR. RUDY SCHMIDTKE: Rudy Schmidtke,
11 Giant Mine team. That's correct.

12 MR. KEVIN O'REILLY: Great. Thanks.
13 That's really helpful. Alan, can I go on to another
14 question?

15 THE FACILITATOR EHRLICH: I just -- I
16 want -- just a -- a short question on that. How long
17 does the concrete water storage you described last?

18 MR. RUDY SCHMIDTKE: Rudy Schmidtke,
19 Giant Mine team. Why did I not see that coming? Good
20 question, Alan. I mean, most of these civil structures
21 will have a design life of fifty (50) years, so there's -
22 - there are other structures in Canada that -- that have
23 been built in sort of the 18 -- late 1800s that are still
24 functioning today, so we might be able to push more than
25 that fifty (50) year period. But also recall that --

1 that we will have recapitalization in some of our
2 treatment plant works, and if they're not working, we can
3 line them, we can build new ones, whatever we need to do
4 to make sure that that plant operates and doesn't allow
5 any adverse impact to the environment.

6 THE FACILITATOR EHRLICH: Thanks. I'm
7 not -- not asking you just out of a -- a fear of -- of
8 complete failure or that you guys would fail to notice
9 that you're fifty (50) years overdue for -- for fixing
10 it. It's -- it's also -- I think it's helpful for people
11 to have an understanding of what kind of ongoing
12 management is required in -- in the project, and, as you
13 point out, you know, replacing things like this from time
14 to time are -- are part of it.

15 So, from what you said, you think, in this
16 location, you think around fifty (50) years. Did I --
17 did I get that right?

18 MR. RUDY SCHMIDTKE: That would be my
19 estimate at this time, yes. Rudy Schmidtke.

20 THE FACILITATOR EHRLICH: Okay. Thanks.
21 Sorry, Kevin, I just -- I didn't want to totally leave
22 that -- that part without it. Thanks for that.

23 MR. KEVIN O'REILLY: Thanks. Kevin
24 O'Reilly. That's why I paused. I think there's maybe
25 two (2) or three (3) other little lines of questioning.

1 One is re-vegetation studies. I think they were
2 discussed on page 665 of the DAR. What's the status of
3 the re-vegetation studies, and when can we expect to see
4 some results? Thanks.

5

6 (BRIEF PAUSE)

7

8 MR. MARK CRONK: Mark Cronk. Thank you,
9 Kevin. Re-vegetation, several aspects. The Reach 4
10 realignment that we did had some re-vegetation work done
11 on it. We're currently evaluating, to be quite frank,
12 successes and failures within that effort, and we learned
13 a bunch from that. We are developing a new program now
14 that we'll start in on in the spring.

15 A big part of the re-vegetation certainly
16 involves the parties, and there's a whole consultation
17 effort as to -- as we spoke about yesterday: What do
18 people actually want to see on those covers when we're
19 done?

20 MR. KEVIN O'REILLY: Thanks. Kevin
21 O'Reilly. And this gets back into the discussion we had
22 yesterday about we need to understand where you are with
23 your studies and design work with re-veg and where that's
24 going, and what are your measures of success. And I've
25 looked at this issue in the context of a different mine.

1 How do you measure sustainability of vegetation.

2 One (1) of the issues, though, that --
3 this came up yesterday -- was root penetration, and,
4 presumably, when you're designing your covers, you're
5 designing them so that roots are not gonna penetrate
6 through the cover, through the geotextile liner into the
7 tailings. And do we know how -- you know, how deep roots
8 go from northern tree species?

9 You know, because when I look at your
10 preliminary design work and so on, and I look at the --
11 the tree roots in my front yard that get into my gardens
12 every year, I -- those suckers can grow pretty fast over
13 a huge distance. So what do we know about this, and how
14 is that going to play into your -- your design of the --
15 or monitoring of the re-vegetation?

16 Because I think we want to monitor for
17 success and sustainability, but you also want to monitor
18 to make sure that stuff doesn't get through, and -- and
19 des -- well, wreck the -- the cover, so. Thanks.

20

21 (BRIEF PAUSE)

22

23 THE FACILITATOR EHRLICH: Kevin, after
24 this I'm go ask if you can really try to prioritize
25 whatever remaining questions you have on surface because

1 it -- it's getting on, and we really don't want to run
2 out of time for the risk assessment, or the stuff
3 tomorrow either.

4 We start to -- start to lose opportunities
5 for those the further we go with this, although there
6 will be some opportunity for catch-up this evening, but
7 let's make sure that we pack in everything we need to
8 pack in.

9 So I think the Giant team is ready to
10 respond to Alternatives North question.

11 MR. MARK CRONK: Mark Cronk. Kevin, you
12 have picked up on exactly why we're in early states of
13 design. So part of the re-vegetation studies that we'll
14 do, we'll look at local species, use experience of people
15 who are knowledgeable in the re-vegetation field.

16 In some casual discussions that I've had
17 with some of those people, they suggest there's a broad
18 range of local species that only penetrate 2 or 3 feet
19 and then the roots go horizontal. So that would be fed
20 into John Hull and his design team as part of the final
21 design thickness for the covers, and bring those two (2)
22 aspects together.

23 THE FACILITATOR EHRLICH: I have a
24 comment I'd like to add to that, just a -- a design
25 thought. I assume that since this tailings cover is

1 going to have to survive what you've called a very long
2 term, you -- whatever plantacologist you get to look at
3 this will be thinking carefully about not just pioneering
4 and secondary species composition, but also climax
5 species condition under this and the other range of
6 climate scenarios that you are investigating for the
7 duration of the project, right.

8 That's -- that's quite a different thing
9 from what a lot of plantacologists are used to thinking
10 about. You've identified certain potential shifts in
11 baseline conditions, and you've identified that for the
12 first part of this project, but if you do a plant cover
13 it's going to have to last for the long part of the
14 project. Please -- I -- I assume you're going to make
15 sure that your plantacologist understands the -- the
16 scale and scope of -- of what the -- the cover is
17 supposed to achieve.

18 MR. MARK CRONK: Mark Cronk. That is
19 correct. It is a short and long term consideration.

20 THE FACILITATOR EHRLICH: Thanks, I just
21 had to say it out loud. You have another comment, Mr.
22 Cronk?

23 MR. MARK CRONK: Mark Cronk. If I can go
24 back to some of the previous topics. Rudy Schmidtke was
25 describing a concept called "cubes." I -- it was brought

1 to my attention that it doesn't really mean anything to
2 some people. That term, for the record, would refer to
3 cubic metres of water.

4 And lastly, on the power issue, a
5 refinement in my thinking. In fact, we are saying that
6 we would have a peak load of 3 megawatts out of NTPC's
7 27. That's not actually correct. NTPC, in my
8 understanding, has 27 megawatts roughly of hydro, and an
9 additional full redundancy of diesel of twenty-seven
10 (27), so we're in fact looking at 3 out of 54 of NTPC's
11 total capacity, so. Thank you.

12 THE FACILITATOR EHRLICH: Mr. Cronk, just
13 on -- on that subject. And, Kevin, I'm not going to
14 forget about you here. But my understanding is in year
15 two (2), if you need to go to a fully active system
16 you're gonna have a required load of -- predicted to be
17 57.1 gigawatts.

18 I -- I'm just going to read out of the --
19 out of the DAR, and it seemed like a pretty high number
20 to me; maybe it was an error. But I quote, it's on page
21 8-121 in Table 8.11.5:

22 "For the active freezing operation,
23 electricity demands will be at their
24 greatest in year two (2) when annual
25 demand for the project is predicted to

1 be 57.1 gigawatt --"

2 Oh, sorry, gigawatt hours; big difference.
3 Gigawatt hours, right:

4 "This incremental consumption will
5 increase the total demand of..."

6 Because I'm thinking, you know, that --
7 that seems rather high.

8 "Incremental consumption will increase
9 the total demand on the NTPC system to
10 246.7 gigawatt hours."

11 And then you get into some detail. All
12 right.

13 Obviously it's -- it's a fine line, but an
14 important line. Could you just talk for half a minute on
15 the difference between gigawatt hours and gigawatt
16 demands that you're talking about, because this is
17 something that is easily confused and needs to be
18 straightened. Thanks.

19 MR. MARK CRONK: Mark Cronk. For the
20 record, I am a civil engineer and not an electrical
21 engineer. Generally one (1) is a peak energy demand on
22 an instantaneous period of time. So the 3 megawatts is
23 what we would pull off the grid at a very small slice in
24 time.

25 The kilowatt hours, or megawatt hours that

1 you're referring to is a consumption over a long period
2 of time. They're two (2) very different units. But if
3 we ask for a lot of power in a short period of time, that
4 is what will produce problems for NTPC and we're well
5 below their ability to sustain those kind of loads. So
6 again, I would expect no problems at all.

7 THE FACILITATOR EHRLICH: Okay. And I
8 appreciate your explanation. Thank you for that.

9 And, Kevin, you were still asking
10 questions, but are you going to go to a different
11 subject? Because it appears that Lukas Novy has a
12 question on the same subject. Different subject? Lukas,
13 is your question on the subject -- on a different
14 subject? I'm gonna let Kevin go, but look, please think
15 carefully about the priority of questions because of the
16 -- the timing.

17 Kevin, you said you've got two (2) more.
18 Is that right?

19 MR. KEVIN O'REILLY: Thanks. Kevin
20 O'Reilly, I'm mega relieved. I've got two (2) more. One
21 (1) is I want to ask about the cost of fencing versus
22 backfilling. Fencing and berms and maintaining them
23 forever versus backfilling of the pits.

24 I understand you don't want to backfill
25 the pits at the beginning, but once the -- the frozen

1 blocks are completed, I don't think there's a -- an issue
2 with backfilling.

3 So you're gonna have a bunch of rock cuts,
4 you're going to have some rock onsite; I know you want to
5 use a lot of it on tailings and so on. But at some point
6 the break even between the perpetual care costs of
7 maintaining fences and berms forever has got to equal the
8 -- the cost of backfilling.

9 So have you done that kind of calculation?
10 Have you thought about this? And my reason for asking
11 this is I just don't like the idea of leaving anything
12 onsite or as little onsite as we possibly can that
13 requires perpetual care.

14 And leaving fences and berms around open
15 pits is just not a good idea as far as I'm concerned,
16 forever. So have you done the -- the calculations on
17 what the break -- break even point is and how is that
18 factored into the -- the choice of fencing and berming
19 rather than backfilling? Thanks.

20

21 (BRIEF PAUSE)

22

23 MR. MARK CRONK: Mark Cronk. Kevin, we
24 have not done full economic analysis in terms of
25 optimizations. The mixture of fencing and berms is

1 consistent with proposed guidelines from the Land and
2 Water Board that are coming up.

3 The pits that are not being filled are
4 large. I would expect, in talking to John, maybe over a
5 million cubic metres of material, assume a cost of
6 twenty-five dollars (\$25) a cube. It's a lot of money to
7 fill those pits.

8 We are -- in the Yellowknife area, we can
9 put fences up and there will be ready access to men and
10 equipment to maintain those fences -- and women, rightly
11 pointed out. It's where we currently are in design.
12 Thank you.

13 MR. KEVIN O'REILLY: Thanks. Kevin
14 O'Reilly. Just -- sorry, Alan, I've got to make a quick
15 comment. I'm not -- even though that might be in the
16 guidelines, it's in the Mine Safety Act, as a local
17 resident who may have grandchildren here hopefully some
18 day, and their grandchildren and their grandchildren, the
19 idea of fences and berms around pits just not a good idea
20 if we can avoid it. Sorry, I just have to say that.

21 Anyways, that's -- it's -- as far as I'm
22 concerned, if we can find a way to get rid of as many of
23 the perpetual care requirements onsite as we possibly
24 can, we should be doing that, and fencing and berming is
25 just not acceptable, as far as I'm concerned.

1 But, anyways, I understand Lukas has one
2 (1) question, then I have one (1) other line after that.
3 Thanks.

4 THE FACILITATOR EHRLICH: Before Lukas
5 goes, on that exact subject of access, there's one (1)
6 small point I wanted to pick up on yesterday. We heard
7 yesterday that ATV use is extremely destructive on the
8 plant layer, and it was identified as being a
9 particularly challenging thing to try to -- to maintain
10 vegetative growth under. In other years, we've found
11 that managing access is extremely difficult. Access is
12 one of the toughest things to manage, and someone really
13 determined with an ATV can get -- well, that's the point
14 of an ATV, you can get almost anywhere.

15 I was wondering what you have in mind, if
16 you plan to prevent ATVs from accessing the -- you know,
17 the large space relatively close to town that the
18 tailings ponds will be once they're -- once they're
19 covered, how do you propose to manage that access, I
20 mean, in light of the vulnerability you identified, over
21 the term we're talking about -- over the period of the
22 project?

23

24

(BRIEF PAUSE)

25

1 question, because it was -- you literally took the
2 question I had and asked it word for word, so you guys
3 have already answered it, so I've got nothing.

4 THE FACILITATOR EHRLICH: That is
5 certainly the easiest comment or question you've had in a
6 while, so that's good. Anything else on surface?

7 MR. KEVIN O'REILLY: Yes, one (1) more.

8 THE FACILITATOR EHRLICH: Kevin, go
9 ahead, please?

10 MR. KEVIN O'REILLY: Sorry. Thanks.
11 Kevin O'Reilly, Alternatives North. Just one (1) more
12 quick comment about fencing and berms, if I may. And I
13 don't want anybody on the team, please, to take this
14 personally.

15 Even if it's in the -- the guidelines and
16 it's in the Mine Health Safety Act, I think it's rather
17 absurd of us, though, to think that we can maintain
18 fencing and berms forever. What that really means is you
19 have to have an infinite supply of fencing. You have to
20 have people that are going to be monitoring and
21 maintaining it, not just now, forever. You have to have
22 site surveillance, you have to have regular inspections.

23 We don't even know what's gonna happen ten
24 (10) years from now, let alone ten thousand (10,000)
25 years from now, so this is part of the absurdity, I

1 think, of having perpetual care as the way in -- in --
2 that it's acceptable for us to put off these things to
3 future generations. So I'm gonna leave it at that, and
4 maybe we're going to pick this up again this afternoon.

5 But my last line of questioning is in IR
6 Number 16 that we asked, Mr. Halbert made a presentation
7 earlier about air quality effects, and he had these very,
8 very tiny maps in his presentation, and I don't have the
9 page handy.

10 But in the response, our question was that
11 even within the red line where air quality guidelines
12 were being exceeded, I think it was for arsenic and maybe
13 some particulates, that that red line actually
14 encompassed part of the Ingraham Trail, and that people
15 actually drive, walk, cycle along the Ingraham Trail, and
16 could get -- get exposed to levels above limits that are
17 supposed to be protective.

18 The response, though, basically said on
19 page 4 that, It's okay, they're not going to be there for
20 very long, and it's a very conservative prediction, and
21 they might be inside cars with rolled -- rolled up
22 windows. Maybe I'm exaggerating a bit, but it was
23 basically saying, Don't worry about it, it's not
24 something anybody ever has to worry about even though
25 there is going to be exceedances.

1 I didn't feel very comfortable with that
2 response. I was sort of hoping that they might come out
3 and say something like, Well if we detect levels above --
4 above exceedances, we might actually stop traffic along
5 the road. That's what I was sort of hoping to see.

6 And that you would actually have a
7 monitoring program in place that would allow you to
8 detect exceedances, and if necessary you would stop
9 traffic. That's not in here.

10 Is that what -- so I'm wondering, is that
11 what the plan would be, or -- and this may all be
12 academic once the highway is routed around the site
13 completely, but we're looking at what you've got on the
14 table. We're not supposed to talk about the highway.

15 So what's the plan if you have
16 exceedances? Would -- will you stop traffic along the
17 road? Thanks.

18 THE FACILITATOR EHRLICH: Thanks, Kevin.
19 I'd like to apologize to everyone, but the only part of
20 this session that I'm not going to be able to be here in
21 person for is between now and when we start again this
22 afternoon.

23 So I'm going to hand over the Chair to
24 Environmental Assessment Officer Chuck Hubert, who you
25 recognize from earlier in the session. Paul Mercredi is

1 also going to be taking -- and I'm going to be coming
2 back at one o'clock.

3 I apologize. It's just a completely
4 unavoidable conflict that I -- I have a commitment to.
5 Thanks.

6 So the Giant team, please go ahead with
7 the response, but Chuck will be Chairing from this point
8 on.

9 MR. BRUCE HALBERT: I understand your con
10 -- concern, Kevin. It's Bruce Halbert for the record.

11 The analysis as we presented on those
12 isopleths, or concentration contours are -- are certainly
13 the maximum at any point in the -- in a full year of
14 predictions, if you will.

15 The actual control cannot be real --
16 really tied back to arsenic levels, because they -- you
17 know, you can't get there results back quick enough, if
18 you will, to -- to regulate on an arsenic concentration
19 basis.

20 So you'd have to go -- really go back --
21 back to dust control, okay. So that's really where you
22 start from. I don't want to pre-empt what might come out
23 of the environmental mon -- monitoring plans, but there
24 is technology out there today, give you real-time
25 monitoring on -- on particulate matter.

1 So it's that -- when activities are
2 actually going on, such as reme --remediation on the
3 tailings area, or whatever, that if levels get up too
4 high, and this is often done on -- just on a visual
5 basis, but it could be taken a step further.

6 You can act -- you actually implement
7 control measures, whether that's wetting or other cutting
8 back activities, whatever, to limit that -- that -- the
9 impact you're seeing on the -- on that local study area.

10 So we're not trying to trivialize the
11 answer here, but we're recognizing that yeah, we --
12 within that -- that small footprint we are going to
13 likely have some exceedances at some points in time, if
14 all of these -- all the sort of assumptions that we made
15 were actually to be realized.

16 So the real answer at the end of the day
17 is gonna be control of -- of total suspended particulate
18 matter, and that's dust, if you want to look at it from
19 that point of view. Okay, so...

20 THE FACILITATOR HUBERT: Thanks very
21 much. you have a follow-up question? It's Chuck Hubert.

22 MR. ADRIAN PARADIS: And, sir, thanks for
23 the clarification.

24 MR. ADRIAN PARADIS: One (1) other thing
25 on this, Bruce. It's Adrian Paradis from Giant Mine

1 project team. The other half of that IR that was not --
2 that we didn't -- that was not discussed is also not with
3 understanding the conservative assumptions noted:

4 "All appropriate measures will be put
5 in place to mitigate situations in
6 which exceedances of applicable air
7 quality criteria may occur."

8 And we then refer it back into the
9 developer's assessment report, Section 8.6.2.4, and I
10 don't -- don't want to bore people, so I -- but it's -- I
11 think we already have multiple mitigation measures in
12 place to address your -- those concerns.

13 MR. KEVIN O'REILLY: Thanks. Kevin
14 O'Reilly. So is one (1) of the mitigation measures --
15 and I -- to actually stop traffic along the Ingraham
16 Trail if necessary?

17 MR. MARK CRONK: Mark Cronk. Yes.

18 MR. KEVIN O'REILLY: Great. That's all I
19 wanted. And at -- at some point, it would be helpful to
20 know what the criteria is for when you would do that, so
21 that your guys on site who are doing the monitoring, the
22 continuous monitoring, or the -- the guys who are doing
23 the construction with the CATs know when and how they're
24 supposed to notify people that, We're gonna stop traffic.
25 That's essential for -- for me to know and I think the

1 community to know, that you actually have a plan and that
2 there's specific triggers, and this is a mitigative
3 action. So thanks.

4 MR. MARK CRONK: Mark Cronk. Those are
5 all good points, Kevin, and those are gonna be part of
6 the EMS program that we're working on and done in
7 consultation with you.

8 If I may, Kevin, go back to your comments
9 on open pits and fencing. It's a tricky question, and I
10 would just like to bring to your attention that even if
11 we filled those pits, specifically A2 and A1, right to
12 the rim of the pit, there would still be hundred (100)
13 foot cliffs naturally occurring immediately adjacent to
14 those pits. So it -- it's not as simple as just filling
15 the pits and the problem goes away.

16 THE FACILITATOR HUBERT: A final question
17 before we break?

18 MR. KEVIN O'REILLY: No.

19 THE FACILITATOR HUBERT: Well, thanks
20 very much for your questions and -- and thanks for the
21 answers as well. With that, we'll take a -- a fifteen
22 (15) minute health break, and after the break we'll
23 proceed with today's topic of risks -- risk assessment
24 with a presentation from the Giant team. Thanks. See
25 you then.

1 --- Upon recessing at 10:20 a.m.

2 --- Upon resuming at 10:37 a.m.

3

4 THE FACILITATOR HUBERT: Thanks very
5 much, everybody. My name's Chuck Hubert again, with the
6 Review Board. And we'll -- we've all been waiting for
7 this interesting presentation on risk assessment from the
8 Giant team, and, with that, I'd like to turn the mic over
9 to the people across the table. Please proceed.

10

11 DEVELOPER'S PRESENTATION RE RISK ASSESSMENT:

12 MR. MARK CRONK: Thanks very much. Mark
13 Cronk. A new individual has joined me here at the table,
14 Mike Nahir. He is the manager of engineering for AANDC
15 out of Ottawa. He's been doing contaminated sites in
16 various aspects for about twenty (20) years, and he is
17 going to be leading this discussion through the Failure
18 Modes Risk Assessment. Mike Nahir.

19 MR. MIKE NAHIR: Thanks, Mark. Can I get
20 a bit of light just before we -- these glasses aren't
21 infrared. Okay. I'll do my best here.

22 THE FACILITATOR HUBERT: No, the lights
23 are coming on. Paul? Okay, thanks.

24 MR. MIKE NAHIR: All right. Mike Nahir.
25 We undertook to look at risks due to human health and

1 environment and costs to the taxpayer due to the project
2 in both the short term, meaning the construction and
3 major adaptation phase to achieve steady state -- we
4 expect that to be about ten (10) years of construction
5 and fifteen (15) years of major adaptation -- and in the
6 long term, which we define as a period of a hundred years
7 after the steady-state period.

8 This is deliberate. This reflects the
9 fact that, although we expect society to live in
10 perpetuity, any large remediation project similar to the
11 built environment is subject to the constraints of
12 engineering methods and materials.

13 So the Giant Mine team has been managing
14 risk at the site since we began care and maintenance, and
15 we will continue to manage risk at the site.

16 I'd like now to introduce John Hull, who
17 will be discussing the methodology of the failure modes
18 analysis that we undertook, and -- and walk us through
19 the results. John...?

20 MR. JOHN HULL: Thank you. John Hull.
21 The -- the Giant team, with the people with knowledge and
22 understanding of the -- the site, and of the risk at the
23 site went through a series of risk workshops. The
24 guidance that was used to develop the -- the workshops
25 was based on CSA-Q850. We identify or note that this has

1 been improved and updated.

2 And we also use as guidance the ISO
3 Standard, which essentially goes through the -- an event
4 and a risk, identifies the risk that's for a particular
5 component, analyzes the risks, and then evaluates them to
6 find some methods -- mitigations. You then monitor it,
7 review it, and then do the process over again.

8 What the -- the risk methods that were
9 considered, or part of the overall analysis that was eval
10 -- considered included the analysis definition, which
11 includes checklists and studies as identified. It
12 includes hazard ident -- identification, consequence
13 analysis, risk estimation, and the probability analysis
14 eith -- with several models that are possible and
15 appropriate.

16 What was done for each hazard that was
17 identified in a component, and there's numerous com --
18 hazards in a component, you would identify the risk, then
19 you would consider the causes of failure or accidents.
20 And then, what's the result of that accident or failure.

21 You then note the accident, and how does
22 that lead to a chain of events which would cause a
23 failure, and what's the consequence of that failure.
24 What's the impact to human health, the environment, and
25 cost.

1 For each component, you then do this
2 numerous times to revo -- review and evaluate the -- the
3 risks and various elements in a component. What I mean
4 by a component would be for this -- this site would be
5 Baker -- Baker Creek would be a component, or the freeze
6 would be a component.

7 We then looked at sub-components. Baker
8 Creek, the -- the banks would be considered a sub-
9 component of the Baker Creek element.

10 So what are the events or causes that
11 would be evaluated? Flooding for Baker Creek, which
12 we've discussed, and Nathan dis -- talked about In -- in
13 some length. What are the -- the potential consequences.
14 So then you look at the likelihood of that event
15 occurring, what's the consequence to public safety, the
16 environment, and what's the cost to manage that or
17 mitigate it.

18 So then you say, All right let's mitigate
19 this, do some control, some management measures. Once
20 you've done that you say, We now have a new situation,
21 let's re-risk, re-estimate the likelihood that that's
22 going to occur; have we improved it, the expectation is
23 yes; have we reduced the severity and -- and the
24 consequence in terms of public saf -- safety, the
25 environment, and cost.

1 You do that for each sub-component within
2 a component, and then you develop a matrix that evaluates
3 the risks. This is the overall risk matrix that was
4 developed for this specific project; it's a very site-
5 specific element. It identifies five (5) categories of
6 severity; the low, moderate, and critical.

7 If you looked at a component, you would
8 say, Let's look at the environment. If an event occurs,
9 or failure occurs, is there an impa -- impact to the
10 environment. In some cases there would be no impact if
11 it was -- for an example, if somebody had a hydraulic
12 line break and a small spill, a couple of litres, that's
13 easy to pick up; it's easy to -- to mitigate. That would
14 be less than a hundred thousand dollars (\$100,000) to fix
15 up. It probably wouldn't even be close to that.

16 On the other hand, if you had a serious or
17 critical event, ses -- there's a -- severity, that's
18 gonna be -- there will be an impact -- a long-term
19 impact, to a valued ecosystem, so that -- that -- it
20 ranks -- rights the various severities of a -- an event.

21 So what's the likelihood? We identified
22 that there were five (5) categories, one (1) to five (5),
23 looking at what -- is it going to happen once every five
24 (5) years, once every fifteen (15) years, or once every
25 thousand (1,000) years?

1 What we looked at in terms of this system
2 was a -- failure modes and effects critical analysis, so
3 an FMECA approach. This is an adaptation from a failure
4 modes effects analysis. The failure modes effects
5 analysis looks at small components in a plant or -- or in
6 a operation, so you'd be looking at a failure of a pump,
7 and what's the effect of that failure of the pump on the
8 parts of -- of that plant. Is that -- is it going to be
9 critical? Is it a minor effect? That looks at small
10 pieces.

11 So what the FMECA approach looks at is the
12 big picture, more of a -- a global approach, which is
13 what we've done, and this is what is represented on the
14 slides you're looking at.

15 So what was the -- the program that was
16 carried out? There were three (3) workshops. The -- the
17 first workshop, we gathered a group that included a lot
18 of the people that you've seen here in the last couple of
19 days who understand the mine, understand what's
20 happening. So what would be events that would cause an
21 accident, and what would be the failures that would cause
22 an issue that -- that should be risked?

23 The second workshop looked at the risk
24 scenarios, looked at the key components, which -- the
25 sub-components: What was the -- the estimated risk or

1 consequence to public safety, the environment, or the
2 costs? And then what would you do, or what could be
3 done, on the property and the project to mitigate these?

4 The third workshop then re-evaluated --
5 everybody had gone away, thought about it, and then
6 developed all the tables that were presented in IR-12
7 response. So we've identified the causes, the
8 consequences of key component failures, identified the
9 risk, and then gone through what would be done to
10 mitigate that, and that then helps the management team to
11 manage -- manage these, mitigate them, and prevent
12 failures in closure and post-closure.

13 What we had to struggle with initially,
14 but then identified: What are some key terms in terms of
15 defining the periods we were looking at? The timeline
16 for the short term is the closure period, and it's
17 assumed to be about a twenty-five (25) year period, as
18 Mike said. So there's about ten (10) years of contracts
19 and construction, then there's a ten (10), fifteen (15)
20 year period where monitoring and managing it. It's a
21 reasonable amount of work just to make sure you get to
22 what we've called steady state.

23 You then get into the long term or the
24 post-closure, and for that, we identified what we, as
25 reasonable engineers, could look forward and said that's

1 probably a hundred year period that this -- we would look
2 at. There would be ongoing evaluations and assessments
3 over that period, but this was -- the hundred years was a
4 reasonable period to consider for post-closure, accepting
5 that it has to last a lot longer, but there would be
6 maintenance for the key items.

7 Further assumptions: Care and
8 maintenance, which is currently going on, will be
9 maintained, and will look after the site in a safe -- and
10 manage the risks that are occurring in the care and
11 maintenance period. The -- the short term starts on day
12 1 when construction starts, so that anticipates and
13 assumes that all the permits that are required, such as
14 the environmental assessment permit, are in place.

15 It also assumed that worker health and
16 safety would be managed and dealt with on each particular
17 contract in each particular phase of the project. No
18 project would be started or initiated that wouldn't cover
19 the proper training for the workers, the proper safety
20 protective equipment, and wouldn't be -- and would be
21 consistent with the Mine Health and Safety Act for the
22 Territories, and any training that is required.

23 So the group from the first session
24 identified a series of components and sub-components.
25 We'll talk briefly about those as we go on, but they are

1 also topics that have been presented in the -- the first
2 three (3) days of this session.

3 There's the underground system. Darren
4 talked of bulkheads and plus, and -- and pillars. Dave
5 Knapik talked to freeze systems, some issues with drill
6 holes, the active freeze, the frozen shell, the frozen
7 block, Baker Creek. We spent a reasonable amount of time
8 on that.

9 And institutional controls and systems,
10 that's part of your discussion for tomorrow. We also
11 talked about yesterday specifically surface systems,
12 tailings covers, public safety of the existing water
13 treatment plant, the new water treatment plant,
14 underground storage for water, the diffuser.

15 And we've also talked -- or thought about
16 infrastructure of the buildings that are -- will -- are
17 on site that will be removed as the project moves
18 forward.

19 As discussed in the analysis, and for the
20 criteria that we're -- we're using for the -- the
21 process, the method identifies and or -- and requires you
22 to organize con -- events and conditions into a string or
23 a series, and so that you can risk them.

24 So what you identify is a -- an initiating
25 event, which is a -- the starting of the -- the chain, or

1 the link. It then connect -- connects to accidents or
2 malfunctions, and then this then goes to a failure or a
3 subsequent failure.

4 It's a systematic analysis which
5 identifies various factors, and considers what -- how did
6 this start, and what can you do to prevent it at the end
7 of the day.

8 The advantage of this approach is it
9 clearly ill -- illustrates the sequence of events that
10 could take place, or that are required to cause a
11 failure.

12 For example, if you had an initiating
13 event in -- oops -- in the -- in the closure period it
14 could be a malfunction or a failure -- an accident leads
15 to a failure, and that could either be mitigated and/or
16 subsequent failure for the system.

17 To -- to give an example, what we've
18 identified is a -- an accident or a malfunction at the
19 mill. Cladding has been falling off of the mill. Some
20 of it is asbestos.

21 If it fell off and it damaged some
22 infrastructure, the one (1) that would be potentially of
23 more concern if it fell inside and hit one (1) of the
24 tailings -- the tanks with tailings or pipes with
25 tailings which are still in the mill building, that could

1 release some tail -- tailings to the edge of the building
2 or outside which then -- would then get into the surface
3 water so there is a release, albeit minor, to the
4 environment.

5 There's also impacts of the cladding
6 potentially falling off either hitting some -- one (1) of
7 the worker on the site, or falling off and being blown in
8 a strong wind towards the Ingraham Trail.

9 The mitigation is the mill is removed in
10 the closure period. So that in post-closure there's no
11 mill, so there is no issue or concern with the cladding.

12 Before going through a -- a couple of
13 quick examples, just to identify what the -- the team
14 looked at, I want to re-present the -- the matrix that
15 was used for the FMECA evaluation.

16 And again, the system is for larger
17 components, and looks at the -- identifies the risk, then
18 flags the mitigation measures, and then it estimates or
19 ranks the -- the risk.

20 We've talked a lot about Baker Creek,
21 because it is a -- represents one (1) of the higher --
22 highest risks on the -- on the project, and through the
23 mine site.

24 What we've identified is if the creek
25 channel loses containment, whether it's during a large

1 flood or at another time, what is the -- the event or the
2 accident that occurs, water could get into C1 or B1 Pits.
3 And if that was to occur, there could be loss of ground
4 support into the mine. So what's the likelihood that
5 this is going to occur? The team identified that that
6 would be potentially a likelihood of an -- of an index of
7 three (3). They then identified that because it's inside
8 the -- the mine site, risk to public safety would be low;
9 however, there is also a risk to the environment and the
10 cost. It is contained within the mine and, under a very
11 high, extreme condition, could be released to the
12 environment if it overwhelms the mine and the pumping
13 system.

14 Is this -- is this likely or possible?
15 Note that this spring, the water level in Baker Creek and
16 Reach 3, just downstream of the UBC bridge, was within a
17 third of the -- a third of a metre of the crest of the
18 dike and bank that is in that area at that specific
19 location. So it -- it is likely.

20 So after mitigation and considering moving
21 the creek and/or other measures to potentially discharge
22 or divert the stream or the creek upstream and offsite,
23 we've reduced significantly the likelihood of an event
24 and a potential for underground instability. So we've
25 reduced -- we haven't changed the public safety, but we

1 have reduced the consequence on the environment, and we
2 have reduced the consequence on the cost, because the
3 cost, after we've mitigated and improved the -- the
4 channel, there is less cost implications.

5 To summarize it, and going back to the
6 overall chart, you can see the initial evaluation with
7 the environment and costs under "major and critical."
8 After the mitigation measures that have been identified,
9 we've reduced it, and that's the intent. We've now moved
10 it from a higher risk to a slightly lower risk, so we are
11 improving the situation. There's still potential --
12 potentially work that could be done.

13 Another high-risk element was, as
14 discussed by Darren, was a sill pillar failure. The
15 concern here is, if the sill pillar fails, there could be
16 release specifically around one (1) of the arsenic
17 chambers or stopes of -- excuse me -- arsenic into the --
18 the mine that could cause a problem with high levels of
19 arsenic in the minewaters. Con -- also, if one (1) of
20 the sill pillars collapses under Baker Creek, that could
21 also result in flooding into the mine.

22 The mine workings are fairly stable, but
23 while this is an old fol -- fail -- an old photo, there
24 are slabs and sections of sill pillars that are
25 collapsing. This is just outside of the area of one (1)

1 of the arsenic stopes, well away from the area, but it's
2 still in that general region of the -- the mine.

3 As noted, if there was a loss of support,
4 there could be a loss of arsenic dust into the mine pool.
5 For the workers, it'd be an issue of dust potentially
6 into the ventilation system. Those could be managed and
7 mitigated, and that's part of what the closure effort
8 would do. It would backfill the areas around the open
9 stopes and drifts around the arsenic chambers and stopes;
10 that would improve the long-term stability. There then
11 is no -- little -- little or -- limited risk of the sill
12 pillars collapsing. They're managed and they're
13 supporting and there's a significant improvement in the
14 consequence, because we have managed and mitigated that
15 eve -- potential event.

16 And again, as a summary, we've identified
17 the -- the accident, which would be the collapse or loss
18 of ground support; the consequence, which, as I've
19 identified, arsenic dust into the mine pool, or
20 potentially into the ventilation system; mitigation and
21 planned controls support that if there is -- with a new
22 water treatment plant, there's an improved ability to
23 manage the arsenic in the -- the water underground. Not
24 anticipated that it -- that it would be necessary,
25 because, as we've supported and backfilled the stopes

1 around the -- the arsenic chambers, we have managed and
2 mitigated the event.

3 A final example that was worked through
4 was the potential failure of cladding or parts of the C
5 Shaft headframe. There has been some weather damage.
6 The risk -- the likelihood is it's low, but there is a --
7 a risk to the public safety, there is a risk to the
8 environment, and there is a cost identified.

9 As everybody who has driven up the
10 Ingraham Trail knows, the headframe is in -- it needs
11 repair. Yeah. There have been pieces -- there have been
12 -- there have been some sheets that have fallen off.
13 Measures have been taken to minimize the future potential
14 of that. Some of the sheets have fallen off and have
15 fallen towards the highway, so there is a risk of injury.

16 In closure, the building is removed, so,
17 in the long term, as the building no longer exists and is
18 -- and it's removed from the site, the closure plan
19 mitigates and manages this risk, and with the building
20 gone, in the long term the cost goes to a very low
21 number. Again, the risk on this one was public safety.
22 By removing and taking the headframe down again as part
23 of the closure planning, we have -- the -- the project
24 has managed and mitigated that issue.

25 We also looked at cascading events and

1 multiple-cause scenarios. What was defined as a
2 cascading event was one that starts a chain of events
3 which leads to multiple failures of several systems
4 within the -- on the -- within -- within the mine or with
5 -- on the site.

6 The multiple scenarios cause -- the
7 multiple-cause scenario which we looked at is two (2) or
8 more unrelated events which happen either simultaneously
9 or at about the same time, which then cause a string of
10 failures and component failures. What we looked at again
11 is my favourite, Baker Creek, as it is one (1) of the
12 higher risk items on the site.

13 So if I lose, as I said previously, the
14 bank or there's an overflow, I -- there's flow into the
15 mine, water level in the mine rises, this potentially
16 increases the arsenic concentration -- concentrations in the -
17 - the mine. There's a component failure potentially of
18 the -- around the arsenic stopes where there's a release
19 of arsenic dust and/or there's just an increase in the
20 arsenic that is in the mine pool. The existing effluent
21 treatment or water treatment plant is unable to handle
22 that, and the new plant is not online.

23 So there's a component failure. I've now
24 gone from a flood to failing around the -- the chambers,
25 and now the ETP can't handle it, and there's a potential

1 release to the environment if we can't get the system
2 under control and mitigate -- whoops -- mitigate one (1)
3 of these events to stop that sequence, that cascading
4 event string to occur.

5 Next we looked at multiple-cause
6 scenarios, where you've got two (2) items happening at
7 about the same time, that -- that then cause a -- a
8 failure and a risk to the -- the system. We've got the -
9 - the environmental treatment plant for some reason --
10 I'm not into that part of it, but I was told that it's
11 not impossible to lose the chemicals for a two (2) month
12 period.

13 At the same time, it's around freshette.
14 I -- with your new bridge, that probably won't happen as
15 much, but with -- sorry about that. the failure of the
16 bank would happen in freshette, that floods the mine, the
17 pumping system can't handle it; because you can't treat,
18 you can't discharge; and at the end of the day, you have
19 a -- you have to replace the pumping system, there's an
20 increased cost, and the potential release of arsenic to
21 the environment if the system can't -- isn't pulled under
22 control in a reasonable amount of time.

23 Another event -- another multiple-cause
24 scenario that was considered, considered the freeze
25 system is not working effectively -- that was touched on

1 -- and at the same time, we have a sill pillar failure,
2 assuming we haven't done the backfilling of all the
3 stopes that are necessary around the arsenic chambers.

4 That leads us to the component failure
5 underground, again a major loss of arsenic and -- and
6 slurry into the mine, overloads the ETP, water treatment
7 plant. Again, the result is an increase -- increased cost
8 to the system and to the -- the closure, and a potential
9 release to the environment.

10 In summary, for the -- these scenarios
11 that we looked at, we looked at over a hundred and -- a
12 hundred risk -- risk failure scenarios. We looked at six
13 (6) cascading scenarios that we could identify within the
14 risk scenarios and failures that we looked at, and five
15 (5) multiple scenarios.

16 What I want to do was, picking through the
17 -- the results of the evaluation, look at a couple of key
18 items where we had high risks, and how they -- proposed
19 management and mitigation reduced the risk.

20 I looked at the roaster. Again, the
21 identification, which has been discussed already, it's at
22 present managed. There is limited impact -- potential
23 impact to the environment because of the measures that
24 have been taken, but cost is, at the moment, fairly high
25 if a failure occurs.

1 Once the roaster is taken down -- I lost
2 cost -- but it would go in low. It's off the bottom of
3 the sheet. So again, the management proposed and the
4 mitigation reduces the risk, and with the roaster being
5 removed during the closure period, we've -- the Giant
6 Mine project has reduced this concern.

7 Underground storage. At the moment, if
8 there's a loss of underground storage the -- there's a
9 flood water into the -- the mine, we would then
10 potentially have a -- an issue with the overloading the
11 water -- water treatment plant with a release of arsenic
12 dust into the mine pool.

13 Again, as I mo -- noted before, with
14 workers there's a potential for ventilation -- as the
15 dust gets into the system obviously the ventilation
16 system would be shut down, the workers would be removed,
17 and then we would go back in with the plan to support the
18 chambers around the arsenic storage chambers.

19 We support the sill pillars, we support
20 the -- and with a new water treatment plant, the system
21 would be able to manage, if this were to occur. The are
22 -- the increased loading on the arsenic in the minewater
23 if this were to occur.

24 There's a concern with several of the
25 crown pillars. This has been identified in both the work

1 that's presented in the -- the DAR and the WRAP
2 (phonetic), and the work that we're presently working on.

3 The expectation is that if a crown pillar
4 were to fail, we don't see this as -- with the management
5 going on, this is -- has the likelihood that's been
6 identified. With all the measures that have been
7 identified and were discussed with the underground and
8 the freeze, the cost of such an event goes down, and the
9 public safety is significantly improved.

10 So again, we're moving from the high risk
11 area to the -- moving it with mitigation to a lower risk,
12 and managing it.

13 One (1) of the other items that was
14 identified in part because of the -- all the drilling
15 that's required around the arsenic chambers was, What's
16 the risk today of a drilling into the chambers, and
17 having a release of arsenic dust to the surface.

18 Again, with the management, with improving
19 and understanding the -- the mine, managing the drilling
20 such that the drilling is away from the -- the chambers
21 by a reasonable setoff, we've reduced and improved the --
22 oops, too fast -- again, improved the like -- reduced the
23 likelihood and definitely reduced the cost of such an
24 event.

25 And with the health and safety plans that

1 would be in place, that's part of that reduction in -- in
2 management to -- to make these improvements.

3 The diffuser, which was identified as
4 having a major concern with public safety; with the
5 design that was discussed, and the mitigation and
6 management measures that would be put in place, it's
7 anticipated that the location of the diffuser would be --
8 would be mel -- well marked.

9 In the initial area -- periods, there
10 would be monitoring programs to confirm that the diffuser
11 is working as intended, that it's not reducing the
12 thickness of the ice, that it is dis -- performing as
13 required, and the mixing is occurring in the mixing
14 zones.

15 And as this modelling is confirmed, we're
16 then getting into a scenario that we've reduced the
17 public safety concern down to a much lower -- much lower
18 level.

19 So in summary, the purpose of the sessions
20 was to assess the project elements and components,
21 identify those which will impact the project's success,
22 could be a risk to public safety and/or the environment.
23 The bottom line is that it allows the operator and the
24 owner to manage these high risk events, and elements, and
25 accidents.

1 This allows for setting priorities --
2 priorities for mitigation and management -- excuse me --
3 assist with planning and sequencing of closure in a cost
4 effective manner -- manner to manage the high risk events
5 at the start of the project, and manage and mitigate the
6 various components that are on the site in a prudent and
7 proper manner.

8 I thank you.

9

10 QUESTION PERIOD:

11 THE FACILITATOR HUBERT: Thanks very much
12 for that presentation. It's Chuck Hubert with the Review
13 Board. The intent is to -- going forward is to allow for
14 questions from parties for the remainder of the morning
15 until lunch. And after that I know the technical
16 advisors of the Review Board here are chomping at the bit
17 for...

18 So please, questions from parties to the
19 Giant team. Go ahead.

20 MS. FRANCE BENOIT: France Benoit for
21 Alternatives North. I have a very general question,
22 which is very near and dear to my heart. And thank you
23 for the opportunity to ask the question. I won't be here
24 this afternoon, unfortunately.

25 Every day -- it's -- it's regarding

1 communications with future generations. And every day
2 we've heard issues of public safety, be it making the
3 public aware of issues around, you know, thinging --
4 thinning ice around the diffuser, or the pits, or the
5 ponds. Has any thought gone into thinking about how we
6 are going to convey this information to future
7 generations?

8 It's -- if -- we are dealing with in
9 perpetuity here, and has any thought gone into the issue
10 of public safety, but in a context of in perpetuity?
11 It's -- it's a very difficult concept for a lay person
12 like me to wrap her head around.

13 MR. ADRIAN PARADIS: Adrian Paradis for
14 the project team. France, it's -- it's a difficult
15 subject, I think, for a different top -- a difficult
16 topic for anyone to discuss with any authority.

17 We have started, and I think with the
18 perpetual care workshop that was held in N'Dilo at the --
19 early in the month, I think there was some good -- or
20 sorry, Dettah -- some very good thoughts that actually
21 came out of that. For the most part, I think we are
22 going to be having to come back to the community and talk
23 to the community about what is the best way of going
24 forward with that.

25 MR. KEVIN O'REILLY: Thanks for that,

1 Adrian. It's Kevin O'Reilly on behalf of Alternatives
2 North. And I guess my question is really to follow up on
3 this. And I've got some questions around how you did the
4 -- this risk assessment. I noticed that it's for a
5 hundred year timeframe, and you had lots of engineers
6 involved and -- and I'm sure -- I think -- it looked like
7 there was some interesting results that -- that came out
8 of that.

9 But as I understand risk assessment, it's
10 really about -- at the end of the day it's about values.
11 And what sort of values do you place on different things,
12 like costs, and safety, and -- and so on.

13 And I guess what I'd like to suggest is
14 that, I think we need to redo the risk assessment, or
15 have a different focus to it, and I think we need to have
16 a perpetual care focus to a risk assessment.

17 And I think it needs to be done involving
18 all the stakeholders, the people that are gonna have live
19 with this after it. And we can have the engineers
20 involved, I think that would be really helpful, but I
21 think you need to involve folks from the communities, and
22 particularly the -- the Yellowknives. But -- and I don't
23 want to speak for them on this, but -- and -- and re-
24 doing it from a perpetual care perspective, it's -- it's
25 got to be not for a hundred years, but forever.

1 And what we need to do is, in my humble
2 opinion, or what I -- I think might be helpful is to --
3 to think about a series of scenarios that -- that could
4 happen into the future, things like there is no civil
5 society; we don't have electricity; we don't have road
6 access any more; we don't have vehicles. And how would
7 you design the project if those things actually were
8 where we're gonna end up?

9 We might get to a different point, or it
10 might influence the way that we start to manage risk
11 today, and I think that's really, really important for --
12 for us in the community.

13 There's -- there's examples of doing this,
14 too, so I'm not, you know, trying to reinvent the wheel
15 here. Nuclear waste management, there's been this kind
16 of thinking brought to bear, both in the US and in
17 Canada, to perpetual care of contaminated materials and -
18 - and how we -- how you properly mark them on the surface
19 so people a thousand, ten thousand (10,000) years in the
20 future might actually understand what's underground, or
21 at least hopefully understand what's underground.

22 There's very elaborate work that's being
23 done in the US, developing scenarios involving a whole
24 variety of people: futurists, artists, and so on. I
25 don't know if we want -- we need to go to that extent at

1 this point, but we need to do the risk assessment in a
2 collaborative fashion, involving all the stakeholders,
3 and using a much longer timeframe than -- than a hundred
4 years, because I think that will start to create a much
5 higher comfort level with what's being proposed.

6 I think a lot of the resistance to the
7 frozen block, quite frankly, is because people may not
8 fully understand it, but they want to make sure that
9 their kids, their grandkids, seven (7) generations, a
10 hundred generations into the future or more have some
11 confidence that we have the right systems in place to
12 manage that stuff forever.

13 Right now, I don't -- I can see parts of
14 it, but I don't see it all, and I -- that's why I think
15 we need to redo this in a -- a collaborative, multi-
16 stakeholder fashion, with a much longer timeframe than --
17 than a hundred years. It's got to be forever.

18 So that's my suggestion, and it's -- it's
19 really a proposal, to see if there's any interest on the
20 part of the Giant team to -- to do that. And as part of
21 risk management, as I understand it, you've got to
22 regularly redo this anyways. You've got to reassess
23 the risk on a regular basis. And I think, from an
24 engineering perspective, from a design perspective, you
25 guys have probably done a -- a really good start here,

1 and -- and that's great, 'cause that'll influence,
2 hopefully -- and that's one (1) of the questions I want
3 to ask later: How has this work influenced your design
4 work?

5 But that's only a -- that's only the
6 design work that is gonna take us to the twenty-five (25)
7 year mark, or fifteen (15) year mark, when you -- when
8 you implement this and do all of this stuff. But it's
9 the long term, the perpetual -- the in perpetuity, the
10 perpetual-care aspect, that this doesn't cover.

11 So anyways, there's a proposal on the
12 table. I'd be interested in hearing your thoughts about
13 it, and I think it's done in a constructive way, and I'd
14 be interested in hearing your thoughts about it. Thanks.

15 THE FACILITATOR HUBERT: Thank you for
16 that suggestion and proposal. Would the Giant team care
17 to respond to that? Let's give them a minute or two (2).

18 MR. ADRIAN PARADIS: Adrian Paradis --

19 THE FACILITATOR HUBERT: It's Chuck
20 Hubert.

21 MR. ADRIAN PARADIS: Adrian Paradis with
22 Giant Mine project team. If you give us a few moments to
23 caucus.

24 MR. KEVIN O'REILLY: Adrian, Kevin here.
25 You've got forever to think about it.

1 THE FACILITATOR HUBERT: Chuck Hubert
2 here. Yes, the Giant team has some -- some few minutes
3 to caucus, and we'll get back once they're completed.
4 Thanks.

5

6 (BRIEF PAUSE)

7

8 MS. LISA DYER: Lisa Dyer, for the
9 record. Thank you for us caucusing for a second, just so
10 we can make sure we give a -- a clear answer, because
11 there's a lot of really good issues that were brought up.
12 And so I'm going to ask Daryl Hockley to -- to answer the
13 questions that have been asked by Kevin.

14

15 (BRIEF PAUSE)

16

17 MR. DARYL HOCKLEY: There were, I think,
18 three (3) things that we want to -- to address there, and
19 all of them good points.

20 The first is the issue of whether this
21 assessment considered perpetual -- the perpetual systems,
22 and it's a -- it's a -- it's hard to explain this, but I
23 assure you they absolutely did. Everybody that was in
24 the rooms was thinking about the long-term future when --
25 when we did this.

1 You'll notice there is quantification on
2 those things about likelihoods. It's impossible to
3 quantify likelihoods unless you choose a period to
4 consider, okay.

5 So the period that was considered was a
6 hundred years. But that hundred year period isn't from
7 2011 to 2111, and nothing afterwards. It's in fact any
8 hundred year period anywhere in the foreseeable future.

9 So if our biggest risk was that the -- you
10 know, the pen -- the fences would -- would fall down in -
11 - in year hundred and seventy-five (175), let's say, then
12 -- then when we were considering that risk we were
13 imagining a hundred year period starting in -- in year
14 hundred seventy-five (175). How big would the risk be in
15 that time.

16 We -- we needed to say that hundred years
17 just to make the math work, okay, but it -- and it's --
18 it's one (1) of the many things that's hard to explain
19 when you communicate the results of a risk to -- to
20 another audience, but that's -- does that fairly -- yeah,
21 okay.

22 MS. LISA DYER: M-hm.

23 MR. DARYL HOCKLEY: The second issue
24 raised was the question of subjectivity. Subjectivity is
25 -- is a part of all risk assessments, and you can -- you

1 of these other things, there's subjectivity involved in -
2 - in all those definitions, okay.

3 And -- and the only response to
4 subjectivity is to get a broader participation in -- in
5 the -- in the process. I think, however, that having
6 done these things lots of times in lots of different
7 places, including with --with different participants and
8 different subject matter, other than the cost, which is
9 entirely dependent on the resources of the individual,
10 the other boxes -- subjectivity may shift a judgment from
11 one (1) box to the left to one (1) box to the right,
12 okay.

13 And that can be significant, but generally
14 something that appears as a high risk on -- on my -- in -
15 - in my view of human health and safety, will also appear
16 on your -- your -- all right. Similarly with other
17 agreed upon important things.

18 The real value in getting other input is
19 sometimes communities have a whole -- a whole row that
20 the rest of us don't even think about. You know, like
21 they're interested in the caribou and the rest of us
22 never even thought about the caribou. That -- that sort
23 of thing, okay.

24 So -- so there are ways to get community
25 input into these things without necessarily trying to do

1 this in front of a group of a hundred people.

2 But I -- I guess my central point is there
3 is subjectivity, and -- and absolutely we admit to that,
4 and we -- we have to realize even after we have a hundred
5 people we still have something subjective. The hundred
6 and first (101) person has every right to have a
7 different opinion on the importance of those risks, okay.
8 There's no escaping subjectivity, okay.

9 The third point I want to respond to was
10 the question about very long term risks, and sort of
11 worst-case future scenarios, or -- and the one (1) that
12 was put forward was loss of civil order.

13 And I -- in this case I can only -- I -- I
14 can't find you any academic papers on this, maybe some of
15 the experts can. But I can tell you how I think about
16 this because I do -- closure plans, we're always faced
17 with this -- this question. You know, we say, yeah,
18 there's going to be fences; fences will keep us safe.
19 Well, what if there's nobody to look after the fences;
20 what if there's no government anymore. Total legitimate
21 question.

22 What -- what I find though is that -- what
23 I found helpful, I guess, is that when I'm -- when I look
24 at that, I try to put -- I try to propose this alternate
25 world with no government, and I try to say, Is the risk

1 on -- on this site disproportionate to other risks that
2 would be present in this alternate world.

3 So a world with no government, you're
4 probably not -- you know, you -- there's -- lots of bad
5 things are going to happen, right. We -- we -- yes, the
6 fence may fall down and you might fall over the fence,
7 but you're probably far more likely to die from bubonic
8 plague because nobody's keeping the sewer separate from
9 the water treatment, or things like that.

10 And I -- I don't mean to minimize the
11 risk. It can go the other way, where -- where, in fact,
12 you do this, you propose this alternate future, and you
13 still conclude that your risk is significant in that
14 thing. But that's a trick that I've used over time when
15 -- when evaluating these long-term worst-case scenarios,
16 and I've -- I've -- I think it's helpful for keeping --
17 well, to me, it -- it adds a bit of perspective to some
18 of those harder long-term questions.

19 THE FACILITATOR HUBERT: Thank you.
20 Follow-up question here from Lukas at our table.

21 MR. LUKAS ARENSON: Lukas Arenson. I
22 just want a -- a clarification, too. It -- it's directly
23 related to -- to this answer, sorry, and I don't want to
24 take any time from the parties, and not from our risk
25 expert. It's more a layman's thing in terms of

1 likelihood.

2 When you -- you -- you were talking about
3 the one (1) in five thousand (5,000) likelihood, which I
4 completely understand, for a hundred year project. But
5 for a project in perpetuity, a one (1) to five thousand
6 (5,000) event has still a probability of one (1) to -- to
7 happen. A one (1) to ten (10) year event has the same
8 probability as a one (1) to a hundred thousand (100,000)
9 event when you think of probabil -- perpetuity. It has
10 basically a probability of one (1).

11 MR. DARYL HOCKEY: Yeah. Again, it's not
12 a hundred year project; it is a hundred years at any time
13 in -- in the future, and I'm -- I'm being a bit of a
14 stickler for that, because I have tried to find a short
15 way to say that, and -- and it always confuses people
16 unless we always talk about a hundred year -- arbitrary
17 hundred (100) year project at any time in -- in the
18 future.

19 But -- but you're right that if you take
20 any math and take it to infinity, it comes to -- to one
21 (1), any -- any -- you know, of course. But I think you
22 would still agree that something that is a catastrophic
23 event that has a likelihood of happening every one (1)
24 year is significantly worse than a catastrophic event --
25 presents a higher risk than a catastrophic event that has

1 a likelihood of occurring once every ten thousand
2 (10,000) years.

3 And -- and that's all we're seeking to do
4 here. We're not seeking to say that -- that the hundred
5 (100) year applies, that we -- it should be a hundred and
6 fifty (150) or two hundred (200) or ten thousand
7 (10,000). You could actually take any one you want. The
8 point is to get a -- a sense of perspective on things
9 that are likely to happen all the time and things that
10 are -- that are likely to happen only under very rare and
11 extenuating circumstances.

12 MR. LUKAS ARENSON: I -- I would agree,
13 and again, I -- I want to leave that to -- to the risk
14 specialists, but I think that should go into a spatial
15 and temporal probability rather than in - into a
16 likelihood, and the same on the consequence side when --
17 when you talk about costs, reoccurring costs, and so on.

18 But, yeah, I think we're going to have --
19 you can talk for weeks about risk; I'm completely aware -
20 - aware of that, but I want to give it back to you.

21 THE FACILITATOR HUBERT: Chuck Hubert,
22 with the Review Board. Back to the parties, please.

23 MR. KEVIN O'REILLY: Thanks. Sorry,
24 Todd. I -- I really want to -- Kevin O'Reilly,
25 Alternatives North. I want to thank Daryl for offering

1 those insights into how the -- this risk assessment was
2 done. That was helpful in terms of my understanding of
3 how some of these factors were considered, but it didn't
4 really answer the question.

5 I guess I -- I'm going to go back, first,
6 to the -- the terms of reference for the -- the
7 environmental assessment, and this is Section 3.3.9(e),
8 and I'll read it into the record:

9 "The developer's supposed to --"
10 I don't have the -- just so I get this
11 right.

12 "The description of potential impacts
13 and proposed mitigation for this
14 section should include the following
15 elements at a minimum."

16 And this is the part I -- I want to draw
17 attention to:

18 "A discussion of how any information
19 regarding an accident or malfunction,
20 or the risk of such an event, would be
21 communicated to the local population,
22 and how the developer plans to engage
23 with local communities in regards to
24 risk management."

25 So you folks went through quite an

1 elaborate process, obviously, to prepare what we see here
2 today and how you responded to the Review Board's
3 request, but you didn't involve or engage the community
4 in doing that. And I guess I'm interested in hearing
5 whether and how you want to involve the community in
6 doing this, but from a -- not a hundred year perspective,
7 but from a perpetual-care perspective.

8 And I don't think we need a hundred people
9 in the room. I think we probably need a -- a smaller
10 workshop over maybe several days, but I didn't hear a
11 response to that -- that part of the question that I
12 asked. I heard an explanation of how you did it, how
13 some of those things were considered. That's all great
14 and dandy, but we weren't in the room, we weren't part of
15 it, nor were other people.

16 And, as I said, I think this was probably
17 very helpful for you folks from a -- an engineering and
18 design perspective, but it's -- I don't feel any more
19 comfortable about the perpetual-care aspects, having
20 heard what Daryl has said, and knowing that we -- I just
21 want to know whether you will think about redoing this in
22 a more collaborati -- collaborative way, with the
23 community, and -- yeah. Thanks.

24

25

(BRIEF PAUSE)

1 MS. LISA DYER: I think, Kevin, you've
2 brought up the -- the true issue. What I'm hearing you
3 say is that it's communications: How do we communicate
4 risks?

5 This risk assessment has been done looking
6 at the project in perpetuity. I see them as two (2)
7 separate issues. I do not see the risk assessment will
8 inform how we communicate. I think communications is a
9 separate issue, and I think that definitely that is
10 something that we need to work with the parties on the
11 risks that exist onsite and how we communicate them.

12 I do not see that redoing the risk
13 assessment will assist us in doing that. We have a lot
14 of good work that I think we can build upon, and we can
15 look at what the findings are of the risk assessment, and
16 build upon addressing your concerns about communications.
17 And I think they're very important to build upon the
18 issue that you've brought up about communications.

19 Now, we did present some options in the
20 DAR, but we haven't had a chance to really have that
21 discussion on what's adequate and what's not adequate.
22 So I -- I don't want to refer back to the DAR, but I do
23 want to say that I see that there's an opportunity to
24 build upon this work, because this work has also helped
25 to form how we are doing our remediation, and so I feel

1 this is an opportunity to build upon things, not to
2 deconstruct and -- and construct again.

3 So I -- I guess I would like to chat about
4 that opportunity to take this information and move
5 forward on developing those issues about communication.

6 MR. KEVIN O'REILLY: Thanks, Lisa. It's
7 Kevin O'Reilly. I -- and I thank you for your response,
8 but it's not about -- just about communications; it's
9 about risk itself: how it's assessed, how people are
10 involved in that assessment, how their values are brought
11 to bear on that, and how that may influence your design.
12 And I'll give you one (1) specific example, and France
13 brought it up, but -- communications, but, more
14 specifically, information management.

15 How have you put together the information,
16 and how are you going to manage information for perpetual
17 care? There's nothing in the DAR about -- are you going
18 to digitize all the records that you have? Are there
19 going to be paper copies stored somewhere? There --
20 there doesn't appear to be a proper inventory even now of
21 the records that -- that you folks have, at least from
22 the response that I got. Do we digitize that? What sort
23 of format is it put in? Where is that information
24 stored? Is it stored onsite? Is it stored locally? Is
25 it stored in Ottawa at the Library and Archives of

1 Canada? Is it deposited in international institutions?

2 Paper doesn't last forever, CDs don't last
3 forever, electricity may not be here. So where's the
4 redundancy in the information management that I would
5 expect to see when we look at this from a -- a perpetual-
6 care perspective?

7 So I only raise -- and I don't want answers
8 to those questions, but that's the kind of thing that I
9 think you start to get at if there's a more collaborative
10 approach in looking at risk.

11 It's not just about communications, and we
12 -- we can talk lots about communications tomorrow. This
13 is about how we assess risk, and how the values of people
14 in this community can be brought to bear in looking at
15 risk, and how we design to -- to better manage those
16 risks.

17 But if you don't involve people in
18 assessing the risks, then I think our views aren't
19 reflected very well in your design, particularly when it
20 comes to perpetual care.

21 That's my opinion, but -- so I think I
22 made a reasonable suggestion of -- and I'm not talking --
23 anyways, how we do that, or whatever, whether it's --
24 it's a workshop or whatever, I -- but I just -- I guess
25 I'm -- I'm trying to find a -- I'm offering a

1 constructive suggestion, and I guess what I've heard is -
2 - I'm trying to chose my words careful here, but a -- a
3 defence of what's been done.

4 And as I said earlier, what -- what you've
5 done is great from an engineering design perspective,
6 although I have a few questions about it, it doesn't
7 address the -- the bottom line of how you engage the
8 community in expressing its values with regard to risk.

9 And it's not about com -- it's --
10 communications is part of it, but it -- it's not just
11 about communications. Thanks.

12

13 (BRIEF PAUSE)

14

15 THE FACILITATOR HUBERT: Thank you.
16 Chuck Hubert, Review Board. We'll await a response from
17 the Giant team, and give them a minute. Thanks.

18 MR. KEVIN O'REILLY: Sorry, it's Kevin
19 O'Reilly here, and if they want to take this away and
20 sleep on it, or something, that's fine, and I'm not
21 trying to push them to answer it right here, right today.
22 It would be nice to know before we go back.

23 But I guess I -- I'm hoping that I can
24 come away with this with a greater comfort level that the
25 values of the community are gonna be reflected in -- in

1 risk assessment, risk management, in a -- in a better way
2 than they have been to date, so.

3 If they want to think about it, that's
4 okay, too. Thanks.

5 THE FACILITATOR HUBERT: Thank you. A
6 couple options there for the Giant team to think about as
7 far as a response goes.

8

9 (BRIEF PAUSE)

10

11 MS. JOANNA ANKERSMIT: Sorry, Joanna
12 Ankersmit, Aboriginal Affairs. Just -- if you can just
13 give us one (1) second.

14 We would like to respond to Kevin. I
15 agree that this is not going to get completely resolved
16 here today. There's going to be -- we have a -- a day
17 tomorrow to talk about engagement, and how we better work
18 -- and I think you've heard that as a common theme from
19 us, that we accept that we need to get more input into
20 certain elements of the project, and I think we've stated
21 a number of times we're committed to doing that.

22 And so I appreciate the -- the comments
23 from Kevin, and I'll just -- if you could just give us a
24 second. We would like to -- to respond, and trust me, we
25 will continue to think about it.

1 THE FACILITATOR HUBERT: Thank you. A
2 few minutes are granted.

3

4 (BRIEF PAUSE)

5

6 MS. LISA DYER: Lisa Dyer for the Giant
7 Mine project team. What we have done here is as a
8 requirement of the EA, and it is a very good and well
9 thought out assessment of the risks on this project from
10 a technical perspective.

11 When we sit in the room, we go through
12 details like a pump fails, or a line breaks, or -- and --
13 and it's very tecno -- technical, and so there's a lot of
14 detailed thoughts and experts in the room looking at
15 this. So this is a really good basis to start from. I
16 understand that there are risks and concerns that the
17 community wants to have an opportunity to understand and
18 have input into.

19 And so for the basis of the EA, I think
20 this is a good assessment of the technical risks we're
21 dealing with. I think there is also an opportunity to
22 sit down and talk with the communities about their
23 concerns and their issues without minimizing the work
24 that has been done, because this is sound technical work.

25 THE FACILITATOR HUBERT: Thank you.

1 Todd...?

2 MR. TODD SLACK: Todd Slack, YKDFN. I --
3 I have a -- a couple of comments to this exchange, and
4 while there is no doubt that this is sound technical
5 work, it's technical work. You know, I -- I have respect
6 for you guys, but -- and no one is looking to reinvent
7 the wheel. Like, the issue being, I -- I saw Daryl
8 present on the work that you had done in Keno that
9 involved communities in terms of multiple accounts
10 analysis and options selection, and I wish I remembered
11 where.

12 But that certainly could have been done in
13 this case, and as much as I -- I'm hearing that, you
14 know, com -- we want to involve communities, this work
15 was done a few months ago, and, as far as I know -- and
16 we have cap -- capacity issues, but, as far as I know, the
17 communities weren't invited to participate. So we're
18 coming into this situation after the decisions have
19 already -- or the risks have effectively already been
20 assessed from a technical standpoint.

21 Now, that being said, I have to clarify
22 another issue here, and that -- when Daryl talks about
23 the failure -- I don't want to use failure modes, because
24 that's obviously a specific term here, but when you talk
25 to Elders, they will tell you when they -- when they met

1 the first white man in this territory. It was not very
2 long ago that society existed before government and these
3 mines were in place.

4 It was the mining industry that brought
5 about treaty, and that -- that treaty is disputed in
6 terms of what it really says, but the First Nations
7 perspective is always the return to the land; that the
8 land can always provide for the people.

9 So I certainly don't see that being incor
10 -- incorporated into this risk assessment, because that
11 is the underlying principle to all of the guidance and
12 direction that I receive.

13

14 (BRIEF PAUSE)

15

16 MS. LISA DYER: Lisa Dyer, for the
17 record. Todd, you've brought up some -- Todd and Kevin,
18 you both brought up some really good issues, and this is
19 something that, talking with my colleagues at the table,
20 we'd like to have some time to think about what you've
21 brought up and take it under advisement, and we'd like to
22 get back to you.

23 And it's -- we don't want to give a pat
24 answer right now to appease you. We really want to have
25 an opportunity to think about this, and think about how

1 we can address these important issues that you've brought
2 up. So if you can give us some time to digest this, and
3 we'll either come back later on today or tomorrow morning
4 and -- and see if we can provide an opportunity for us to
5 work together on this -- these concerns and issues.

6 THE FACILITATOR HUBERT: Thank you. Is
7 that acceptable?

8

9 (BRIEF PAUSE)

10

11 THE FACILITATOR HUBERT: I'll take that
12 as a yes. Thanks. Party in the corner, please?

13 MR. DENNIS MARCHIORI: Hi. Dennis
14 Marchiori, City of Yellowknife. Risk or hazard matrix,
15 it doesn't really matter; we all go through them in some
16 extent during the day. We probably don't use a 5 x 5
17 like you did.

18 The question that I have from the City's
19 perspective -- and I deal with public safety, so I have
20 the fire division and MEDs, so we go through this quite a
21 bit: identify our hazards, pick our risks. We usually
22 do something more along a 3 x 3 to keep it fairly simple,
23 but what I'd like to know is, I don't see a listing of
24 the hundred and two (102) factors that you looked at, and
25 I'd like to know what some of those are, because those

1 would get reevaluated into both the emergency plan that
2 we've gotten from NUNA (phonetic), and it'd also be
3 reevaluated into our City's emergency plan to see if any
4 of those are something that would affect how the City may
5 assist in any sort of response.

6 The other thing is, usually with a -- a
7 lot of risk matrices, you always throw in one, and this
8 probably will come from the panel later. You always
9 throw in a risk matrix on what happens if you failed with
10 your risk matrix and what the results of that are.

11 And the third point that I would like to
12 know is: This is all based on the remediation project.
13 Is this going to be done to a lesser extent once the
14 remediation is done and you're going into your
15 perpetuity, because you'll still be running a water
16 treatment plant on the surface, as well as access into a
17 confined space, which would be your mine site?

18 So those would be my questions.

19 MR. MICHAEL NAHIR: It'S Mike Nahir. I
20 refer you to IR-12, which has the full list of all the
21 tables and charts of all the -- the results. But for the
22 presentation we -- what we did was we highlighted the
23 ones that showed up as -- as more high risk so that we
24 could -- and also for demonstration of how -- how the
25 system works.

1 Is it not on the public register? Mike
2 Nahir.

3 MR. ADRIAN PARADIS: I'll -- I'll resend
4 it.

5 MR. MICHAEL NAHIR: Yeah, we can send
6 that. That's not a problem.

7 MS. LISA DYER: Actually, Lisa Dyer here
8 for the record. We have given a complete copy of the IRs
9 to the City of Yellowknife. I delivered it to them
10 personally.

11 MR. MICHAEL NAHIR: Can I get a re-
12 statement of question number 2? There's what I think it
13 is, but I'd rather you re-state it.

14 MR. DENNIS MARCHIORI: That would just be
15 the fact of doing a risk matrix on the fact as to whether
16 or not you covered everything in your initial risk
17 assessments.

18

19 (BRIEF PAUSE)

20

21 THE FACILITATOR HUBERT: And thanks, from
22 -- from the City, can you re-state your name, please, for
23 the record.

24 MR. DENNIS MARCHIORI: Sorry. It's
25 Dennis Marchiori. I'm the Director of Public Safety for

1 the City of Yellowknife.

2 So while Mr. Kelfalas gets the large
3 document, I only get to skim parts of it when he leaves
4 it in his office.

5 MR. MICHAEL NAHIR: Mike Nahir. The way
6 the risk assessment was constructed was we -- basically
7 it was a big brain storming session with the -- everybody
8 associated with the project on a technical level, and --
9 so it -- it represents the best thinking that we have at
10 the time.

11 And I -- and I think, sort of, in support
12 of your third question and to what Kevin said, it's an
13 ongoing process of updating it as -- as the work
14 proceeds.

15 THE FACILITATOR HUBERT: One (1) further
16 follow-up question from the City?

17 MR. DENNIS MARCHIORI: No, I believe he's
18 kind of covered it off in the fact that he's saying
19 there's going to be a perpetual review probably of this
20 risk matrix, especially as they finish the -- the larger
21 scale remediation portion, correct?

22 MR. MICHAEL NAHIR: Yeah. And in general
23 our risk management process is an ongoing process and
24 this is part of that.

25 THE FACILITATOR: State your name,

1 please.

2 MR. MICHAEL NAHIR: Mike Nahir.

3 THE FACILITATOR: Thank you very much.

4 With that we will note that we're very close to lunch and
5 we're taking a break for lunch. Thank you very much.

6 Sorry, I wasn't paying attention. Go --
7 go ahead.

8 MS. MORAG MCPHERSON: Morag McPherson
9 with Fisheries and Oceans. I'm -- I'm not sure if the
10 other parties are -- are done with their line of
11 questioning, but Fisheries did have some questions we
12 wanted to ask.

13 We do realize it's -- it's before lunch
14 and we'd prefer to go for lunch as well, but just wanted
15 to make sure that the Board was aware that if we had a
16 chance we do have a -- a series of questions. They are
17 sort of statements with questions. It's hopefully, not
18 gonna be too long-winded, but we do need a little bit of
19 time to sort of work our way through it.

20 THE FACILITATOR: Thank you, Chuck
21 Hubert, Review Board. DFO will have the opportunity
22 immediately after lunch to ask questions. Thanks.

23 With that, again, we'll break for lunch.
24 Thanks, everybody for participating and see you at 1:15
25 p.m. sharp. Thanks.

1

2 --- Upon recessing at 11:55 a.m.

3 --- Upon resuming at 1:30 p.m.

4

5 THE FACILITATOR EHRLICH: Okay. It looks
6 like most of the Giant team is back. I want to get
7 going. It's Alan Ehrlich. I'm -- I'm back, and I'll
8 resume co-chairing this with Chuck.

9 My understanding is that, before lunch,
10 DFO was asking questions regarding risk assessment.

11 CHUCK HUBERT: Haven't had a chance yet.

12 THE FACILITATOR EHRLICH: Or was waiting
13 to ask questions regarding risk assessment, hasn't had a
14 chance yet, and, Morag McPherson, can you please go
15 ahead?

16 MS. MORAG MCPHERSON: Morag McPherson
17 with Fisheries and Oceans. The questions that we have
18 are directly related to the Review Board IR-12 and 20,
19 the responses given by the Giant Mine team related to
20 risk evaluation and the failure modes. So it's not
21 really ecological risk assessment questions; it's
22 specific to this sort of failure modes report that was
23 submitted, and most of that was the focus of this
24 presentation.

25 So just to put it in a bit of context, we,

1 for the other parties as well, DFO -- this is the first
2 time we had seen this report as well, so we appreciate
3 the opportunity to be able to ask questions on this in
4 these technical sessions.

5 We've done a preliminary review of it, not
6 a -- not a full, detailed review, but wanted to make sure
7 we asked questions of clarification so that we're -- you
8 know, have an -- make sure that we have an appropriate --
9 a proper understanding, I guess, of what is in the report
10 and what some of the conclusions are. We're not experts
11 in this type of risk assessment, you know, so we're not
12 going to comment on sort of the approach or -- or some of
13 the specific factors, but just making sure we're clear on
14 what went into it and what some of the conclusions are
15 that are coming out.

16 Based on our review of this report and our
17 current understanding of the information that's in the
18 report, most of the initiating events are causes that
19 seem to -- I'll also preface this saying, of course, we -
20 - in terms of our interests, looking at impacts of this
21 project, we're going to focus on the Baker Creek aspects
22 of this failure modes risk assessment.

23 So, based on our sort of current
24 understanding, I guess, of -- after reviewing this
25 report, most of the initiating events and causes that

1 result in a loss of Baker Creek, or Baker Creek becoming
2 a risk to the site, which has been characterized as a
3 flood, are related to failure of systems and components
4 on the site itself, such as channel blockage, crown
5 pillar collapse, loss of ground support, and subsidence,
6 which all relate to stability of the surface and the
7 underground.

8 Can the project team please car -- clarify
9 that, as evaluated or outlined in -- in this report to
10 date, the only initiating events directly related to
11 Baker Creek system itself is flooding related to high-
12 flow events and seepage from the channel?

13

14 (BRIEF PAUSE)

15

16 MR. MICHAEL NAHIR: Mike Nahir. That's a
17 fair comment.

18 MS. MORAG MCPHERSON: Thank you. This is
19 sort of how our line of questioning is gonna go, because
20 I think, you know, it might be oversimplifying things,
21 and please -- please clarif -- you know, correct us if
22 we're oversimplifying or not, you know, kind of
23 understanding. I know there's a lot of complexities in
24 this, but we just need to make sure we -- we have a
25 proper understanding of this in terms of the context of

1 some of the other discussions that have been initiated in
2 this technical session.

3 It's also our understanding that the risks
4 of these events -- so these sort of other initiating
5 events on the site related to stability in the
6 underground, I guess, as well as flooding of Baker, have
7 been in existence since at least the 1980s, and that
8 these systems and components of the site related to
9 stability -- so these other initiating -- these sort of
10 initiating events -- are proposed to be addressed as
11 outlined in the remediation plan that was submitted in
12 2007.

13 Could you please clarify if there are any
14 of these systems and components of the site -- so these
15 things related to stability -- that would -- would then
16 result in a loss of Baker Creek that are not -- that are
17 not or cannot be addressed in this proposed remediation
18 project?

19

20 (BRIEF PAUSE)

21

22 MR. MICHAEL NAHIR: Mike Nahir. The
23 failure modes analysis we did is our best assessment at
24 this point in time.

25 THE FACILITATOR EHRLICH: Sorry, Morag,

1 I'm going to jump in a second. I'm not sure I completely
2 understood the question. Could you re-word that?

3 MS. MORAG MCPHERSON: So I guess right
4 now I'm focussing on some of these -- the initiating
5 events that are outlined in the report, the ones that
6 would -- haven't -- would result in the loss of Baker
7 Creek, so the ones that we had outlined were channel
8 blockage, crown pillar collapse, loss of ground support,
9 and subsidence, all of which were sort of the events that
10 caused flooding of Baker -- besides just the actual
11 flooding, like high-flow events. So it's focussing on
12 those components and systems that were outlined in the
13 report.

14 I guess I just want to understand, based
15 on this as new information and kind of a new recent
16 evaluation, are there any gaps in terms of new risks
17 onsite or new -- new components of -- of the project that
18 are -- could fail that aren't being addressed by the
19 remediation plan, or can't?

20 I'm focussing on those systems that would
21 then lead to Baker Creek losing -- losing Baker Creek.
22 So I'm just trying to understand if there's a gap between
23 what's being proposed in the remediation plan to
24 stabilize all of these areas, if -- if there's a risk or
25 an event that now they've built into this analysis that

1 can't be or, you know, isn't being addressed somehow
2 through the remediation plan.

3 THE FACILITATOR EHRLICH: To my
4 understanding -- and correct me if I'm wrong -- but, you
5 know, there were some questions regarding the potential
6 risks posed by Baker Creek previously in the technical
7 session, and the Giant team said clearly that, as a
8 source of -- potential source of -- I think the preamble
9 to do something with groundwater, heat, and -- and
10 energy, that the presence of Baker Creek onsite was one
11 (1) of the bigger risks that it had to deal with, but a
12 lot of this plan, as I understood it, was managing risk.

13 Just because they've considered the risk
14 doesn't mean that there is no residual risk whatsoever,
15 and your question doesn't seem to make a differentiation
16 between the two (2) of them.

17 Yes, we understand that the Giant team is
18 looking to deal with Baker Creek and looking to freeze a
19 big block of arsenic, and, yes, there are many ways it's
20 interacting and it's taking what management actions it's
21 described it would to try and deal with that, but your
22 question seems to -- seems to be getting at -- at whether
23 or not all residual risk to or from Baker Creek has been
24 mitigated, and I - I'm not sure I understand that
25 correctly.

1 Are you asking if the creek still can --
2 if -- if there are no more hazards posed to the project
3 by the creek?

4 MS. MORAG MCPHERSON: Morag McPherson
5 with Fisheries and Oceans. I -- I think we're sort of
6 saying the same thing when you were talking about the
7 residual risk. It's -- it's what's left over. I guess,
8 just to the start out, I was wondering how -- I'm -- I'm
9 just focussing on what's in here. Those components and
10 systems on the mine site that could fail or cause an
11 event that would result in the loss of Baker. So I'm
12 talk -- this has both been, as far as I can read from
13 this report, evaluated in the short term and the long
14 term.

15 I'm just asking clarification, just if --
16 in case there is a gap that I'm not understanding, or
17 there is a residual risk that -- it would lead to a
18 residual risk that I'm -- I'm not quite understanding is,
19 are any of those components not able to be, or not
20 addressed in the current remediation plan? Which would
21 then mean that there would be residual risks.

22 So I'm trying to understand, of these
23 events that they've outlined could cause Baker Creek to
24 be lost into the mine site, are they all planned to be
25 addressed in this remediation plan, or -- or are there

1 aspects that can't be, which would result in a residual -
2 - you know, that's what I'm trying to clarify, for my
3 understanding, is: What is the residual risk?

4 So I just need to understand, of those
5 components, are they being addressed, or is -- is there a
6 new risk that I'm unaware of or -- it -- it's very -- you
7 know, it's in here that I just haven't understood.

8 THE FACILITATOR EHRLICH: So are you
9 asking if there's anything in the project that's proposed
10 that could affect Baker Creek over the course of -- of --
11 forever while the projects operating? Could anything
12 ever go wrong that hurts Baker Creek? Is that the
13 question?

14 MS. MORAG MCPHERSON: No, just the
15 components that were outlined in this risk analysis that
16 they felt could -- that they've outlined if there was a
17 failure of those components a result would be a loss of
18 Baker Creek, which obviously has a very high risk.

19 But it's an initiating event that's
20 related to systems and components, and it's all just laid
21 out in here. I mean, I'm trying to use the same words.
22 There's initiating events laid out here, so causes, that
23 are related to these other systems and components of the
24 mine.

25 And I'm just trying to understand, are all

1 of the ones that are -- at least that they know -- I
2 mean, you can't predict everything, that they know of,
3 are they planned to be addressed in the remediation plan,
4 can they be addressed?

5 Just so I understand, is there a residual
6 risk of those events happening, or not, after
7 remediation.

8 THE FACILITATOR EHRLICH: And you're
9 saying addressed in that has the Giant team prepared to
10 deal with them, not does that mean there is zero chance
11 of -- of the -- the real world not doing what's
12 predicted, right?

13 MS. LISA DYER: Lisa Dyer. We understand
14 the question. We just need a few moments to talk about
15 it to make sure we truly give a succinct clarified answer
16 to Morag.

17

18 (BRIEF PAUSE)

19

20 MS. LISA DYER: Thank you for giving us
21 some time to consider and think over our response. Lisa
22 Dyer, for the record.

23 The current plan proposed in the
24 remediation plan does address the risks. We -- we -- the
25 initiating events we have considered. There is, however,

1 a period of risk until we can implement this plan. And
2 so until we implement this plan there is risk that is not
3 being addressed.

4 But the long term, once it's implemented,
5 we feel that the risks have -- we've considered the
6 risks, and they have been mitigated.

7 MS. MORAG MCPHERSON: Morag McPherson.
8 Thanks. I -- I didn't mean for this to be overly
9 complicated. I -- I think it's under -- it's important
10 to understand because when you're presenting this type of
11 information, and you're talking about risks and
12 probabilities and what it means now and what it means
13 later, obviously it's a dynamic site; there's a lot going
14 on, and I guess I'm just putting out -- this is my
15 understanding, that these things are proposed to be dealt
16 with, but what is -- you know, how confident are you in
17 though -- the ability of those systems and the mitigation
18 measures you're proposing in this remediation plan to
19 sustain those systems?

20 And if there is a gap, if things have
21 changed, that the parties understand that. So that --
22 that's kind of where this direction is going. Just
23 making sure if there's new -- you know, there's a lot
24 information in those charts and things. If there's
25 nuances that we're not understanding that -- that we can

1 clarify that here.

2 THE FACILITATOR EHRLICH: Thanks for
3 that, Morag. The Board's expert in risk assessment, Dr.
4 Cesar Oboni, would like to make a -- ask a question.

5 MR. MICHAEL NAHIR: Sorry. Can I just
6 make a clarification based on the last -- that might
7 resolve that.

8 THE FACILITATOR EHRLICH: Clarify away.

9 MR. MICHAEL NAHIR: It's Mike Nahir.
10 Yeah, so what we've done is we've looked
11 at risks in the short-term during implementation and some
12 steady state period, and then we looked at long-term
13 risks.

14 What we've done is identify some short-
15 term risks that were -- that clearly are there and that,
16 you know, prob -- would likely need some address. And
17 the remediation plan is more focussed on the long-term
18 risks as -- as we proceed going forward and we -- so we
19 do anticipate some short-term risks that, as we've
20 identified.

21 THE FACILITATOR EHRLICH: Thanks. Dr.
22 Oboni does have a question while we're on that subject.
23 Morag, we -- we will get back to you though. You -- it's
24 just that -- if it's on -- because it's on subject I'd --
25 I'd rather just deal with it a little bit more now. So I

1 -- I thank you for your patience.

2 MR. CESAR OBONI: Yeah. So it's just a
3 clar -- quick clarification.

4 From the risk matrix, the "Likelihoods" is
5 Index number 3, and if I go, it's once every thirty (30)
6 years. So even once the -- the risk -- even -- even once
7 the risk will be mitigated they still have the same
8 likelihood, which I have a hard time understanding how
9 that's possible that the probability did not change even
10 when it's mitigated or not.

11 MR. MICHAEL NAHIR: Mike Nahir. Can you
12 identify which one you're referring to?

13 THE FACILITATOR EHRLICH: Are you talking
14 about which slide number?

15 MR. CESAR OBONI: Slide number 15, the
16 Baker Creek flood, FMECA table.

17 THE FACILITATOR EHRLICH: And you're
18 contrasting that with Slide 18?

19 MR. CESAR OBONI: Yes.

20 THE FACILITATOR EHRLICH: And so it
21 sounds like slide -- which was the first one?

22 DR. CESAR OBONI: Fifteen (15).

23 THE FACILITATOR EHRLICH: Slide 15 is
24 being contrasted with the information on Slide 18.

25

1 (BRIEF PAUSE)

2

3 THE FACILITATOR EHRLICH: Slide 15 in Dr.
4 Oboni's question is being contrasted with the information
5 on Slide 18.

6 MR. CESAR OBONI: Yeah. Cesar Oboni for
7 the record. So before the remediation the likelihood is
8 -- is the Index number 3 on the -- once every thirty (30)
9 years. And after the probability likelihood is -- has
10 remained the same. So could you clarify what happened?

11 THE FACILITATOR EHRLICH: This is -- all
12 I understand, with respect to the flooding of Baker
13 Creek, right?

14 MR. CESAR OBONI: Yes.

15

16 (BRIEF PAUSE)

17

18 MR. CESAR OBONI: Can I clar -- clarify
19 one (1) more thing? Cesar Oboni for the record. I'm
20 sorry.

21 MS. JOANNA ANKERSMIT: No, no, you can
22 still go. You can go, we'll listen. We're all
23 listening, Cesar.

24 MR. CESAR OBONI: So my question is:
25 How, by putting some mitigative measure, the cost of

1 consequences are moving if we look at either -- either
2 cases?

3 So either cases being either during the
4 remediation, or in the long term.

5 THE FACILITATOR EHRLICH: So if I
6 understand the question correctly, you're saying that the
7 evaluation of the severity?

8 MR. CESAR OBONI: Yes.

9 THE FACILITATOR EHRLICH: Evaluation of
10 severity of a Baker Creek flood appears to be the same in
11 this diagram before and after mitigation.

12 MR. CESAR OBONI: No.

13 THE FACILITATOR EHRLICH: No? Hold on a
14 second. Please correct me, Dr. Oboni.

15 MR. CESAR OBONI: Cesar Oboni. Should be
16 the same, because the consequences should be the --
17 remain the same whether the mitigative measure is in
18 place or not.

19 THE FACILITATOR EHRLICH: I -- so my
20 understanding is, this is because the mitigative measure
21 affects the frequency, which is a measure of likelihood,
22 but the -- the hazard, the outcome, would not be changed,
23 the frequency would be changed.

24

25 (BRIEF PAUSE)

1 MR. JOHN HULL: John Hull. In that
2 particular example, and in the table response IR-12.B.5,
3 the evaluation in this case anticipated that we had not -
4 - there had not been a full remediation of the -- the
5 site, and that there was a delay in the backfilling and
6 backfilling of the B1 Pit. So that there was a delay.
7 It wasn't the full remediated site, so that we hadn't
8 gotten into the long term scenario.

9 So we -- we've improved it by improving
10 the dike, the -- the banks, considering moving the water
11 from Baker Creek offsite to the north, in a potential --
12 as a diversion, but we -- they haven't finished all of
13 the closure activities. So there's no stabilization.

14 MR. LUKAS ARENSEN: Lukas Arenson. It's
15 -- the -- the problem is more that we -- we have a
16 fundamental understanding problem right -- right now.
17 It's that when you remediate, you change the likelihood
18 that something occurs, but not -- you -- you don't change
19 the consequence.

20 So in -- in other words, you have your
21 flood. The flood spills, and causes someone to die. Now
22 that flood is a 1 in a 20 year event. You increase your
23 berms to something much higher. So now what you're
24 changing is that your likelihood goes into 1 to 100, but
25 the consequence that when it spills that the person going

1 to die is the same. And that's what we're saying here.
2 I have to -- I don't have a pointer, and I can't stand
3 up, but basically -- I have to take the mic with me.
4 Thanks. Okay. Where's the pointer?

5 So basically what we're saying is that you
6 should be -- in the consequence matrix, you've got to
7 move up and down here, and for all, being it environment,
8 being it cost, but you're going to go down into the --
9 into these areas. You -- so you want to change your --
10 your consequences. And once you -- and the next step is
11 once you're changing your mitigation, or you're changing
12 that the person never is going to be there, for example,
13 to protect that person you're -- get rid of the whole
14 matrix completely because you manage your hazard, and
15 you're not mitigating it.

16 That's -- that's a thing where we want to
17 go. Is -- is it -- just put it into more layman's term
18 because I'm -- he's a risk guy, not -- not me, sorry.

19 MS. MORAG MCPHERSON: Can -- Morag
20 McPherson with Fisheries and Oceans. I think this is
21 getting to the heart of the -- what I'm trying to get at
22 in terms of how this has been communicated. Is that I
23 was trying to clarify in terms of flood, when you say
24 Baker Creek flood, there's various flood scenarios laid
25 out, so what flood scenario are you talking about?

1 So what I was saying is they've outlined
2 components and systems of the mine that would fail. That
3 has to happen first. That's the initiating event. Then
4 there would be a flood. So what I was asking, in terms
5 of what potentially was evaluated in here is you get rid
6 of those initiating events, they're -- that you -- you
7 stabilize the site, those initiating events can't happen,
8 therefore, those flood -- the floods that would happen
9 from that initiating event -- event is gone.

10 The only flood that would be remaining in
11 terms of Baker Creek flood would be a high-flow event.
12 So that's a flood initiated by Baker Creek itself, by the
13 Baker Creek system, would be a high-flow event. So we
14 need to look at what the risks of that are, but, as far
15 as I can tell from what's been evaluated in here, the
16 initiating event is something happening onsite:
17 underground, surface, stability goes, then you have a
18 flood.

19 So I think there's -- I think it's
20 important to clarify, when we're talking about flood,
21 what kind of flood are you talking about. Are you
22 talking about one (1) initiated by the Baker system
23 itself, and then the consequences of that, which are not
24 good; or -- or an event happening onsite which causes a
25 flood, which also has the same severe consequences?

1 But I think it's just important to
2 distinguish what flood event are we talking about,
3 because if you do remediate or mitigate those initiating
4 events, then those subsequent floods which could happen
5 won't happen. So that flood risk isn't even there,
6 because those things have been mitigated, but there's
7 still -- then the only remaining flood risk of Baker is
8 high-flow events of the creek itself.

9 So I'm just trying -- I just think it's --
10 it gets complicated and it gets confused, and I think
11 some of the way it's been laid out in these tables as
12 well is a bit misleading, because it'll say "risk issue
13 or failure first," but then the actual event listed
14 second, but it's the event that actually has to happen
15 first; then you have the risk or failure.

16 And even on Slide 15, it has the risk or
17 issue failure first, and the event second. So I -- I
18 think it causes a lot of confusion, that essentially it's
19 the event first and then the flood. The consequences are
20 all the same, whether it's initiated by Baker or not, but
21 I'm -- I just think it -- it's an important distinction
22 that I struggle with in terms of trying to understand the
23 risks onsite and how -- how they're evaluated short term.
24 Once mitigations are put in place, then what remains long
25 term?

1 So I -- I'm not sure if that's where
2 confusion's coming in, but that's where I've had a
3 challenge with talking about flood.

4 THE FACILITATOR EHRLICH: And, Morag,
5 there's a clarification I'd like to -- to make on -- on
6 something that you said there. You talked about once the
7 -- the risk is -- is mitigated, then it -- you can't
8 start from initiating events. But, of course, mitigation
9 does not necessarily suggest exhaustive prevention;
10 mitigation could simply be the reduction of the
11 likelihood of it occurring over a given period of time.

12 And we're talking about a lot of given
13 periods of time in this case, but -- but, you know,
14 mitigation is not an all-or-nothing prospect, you know.
15 It can reduce as well as prevent the likelihood of a
16 significant adverse effect.

17 Something that I think would help at least
18 my understanding of the context of this discussion is,
19 Morag mentioned the consequences, that this is about the
20 consequences of unintended flooding prior to the -- I
21 think I heard prior to the freezing of the chambers, or
22 at least that implied.

23 Could you describe briefly what the
24 consequences would be if there was a -- a major flood of
25 Baker Creek before the chambers are frozen?

1 MR. MICHAEL NAHIR: It's Mike Nahir.
2 There was -- there's about three (3) sets of questions
3 there. Since you're the Board staff, we'll start with
4 yours, but I need some time, so if you can give me a few
5 minutes here.

6

7 (BRIEF PAUSE)

8

9 THE FACILITATOR EHRLICH: Okay. We're
10 going to start again. It sounds like the Giant team has
11 a response.

12

13 (BRIEF PAUSE)

14

15 MR. MARK CRONK: Mark Cronk. I think
16 we've agreed that we're gonna change the order of the
17 questions, and we hope that that provides more clarity.

18 Alan, if I understood your question, you
19 asked: What would happen if we flooded the mine now
20 under basic conditions, before remediation? So what I'll
21 do is I'll walk you through what I believe that scenario
22 is. Is that a correct interpretation of your question?

23 THE FACILITATOR EHRLICH: It's pretty
24 close. I was thinking the very early stages of the
25 project, but once the project's implemented, but before -

1 - you know, when -- once you've started doing the
2 project, but before the frozen blocks exist.

3 MR. MARK CRONK: Mark Cronk. In my
4 opinion, it wouldn't materially change the answer.
5 Without the frozen blocks, if you had a massive
6 inundation of the mine that ultimately arrive with the
7 water surface underground connected to the environment on
8 surface, the general effect would be that the arsenic
9 that is outside the chambers from chronic leakage would
10 be mobilized as part of that. To what extent, we don't
11 know. We would simply be guessing, but you would
12 certainly have a non-compliant discharge to the
13 environment of significant effects.

14 The frozen block would isolate the
15 majority of that arsenic that could be mobilized in that
16 environment -- or in that scenario, rather, and that's
17 the real fundamental difference.

18 THE FACILITATOR EHRLICH: Yeah, but, I
19 mean, I'm thinking before the frozen block exists, if you
20 got a big enough flood at Baker Creek, for example, there
21 could be overtopping into, say, the -- one of the C pits
22 that has, you know, an arsenic chamber underneath it.
23 And I know that you can certainly -- if such an
24 unfortunate event should happen, I know that you can
25 certainly pump and treat up to a certain rate. I don't

1 know how long you can store water for before you need to
2 start discharging in the event of a serious high floor.

3 I was wondering, can you -- can you just
4 sort of fill us in on -- I mean, what kind of a scenario
5 are we looking -- looking at? Because, I mean, all this
6 talk is about the flooding of Baker Creek, and I just --
7 I want people to understand, you know, what kind of risks
8 are out there.

9

10 (BRIEF PAUSE)

11

12 MR. MARK CRONK: Mark Cronk. The project
13 team refers to a -- an internal discussion that we call
14 "The Very Bad Day," and I think it's appropriate and it
15 speaks to your question.

16 You would have heard Nathan Schmidt say
17 that Baker Creek can deliver something like 25 cubic
18 metres a second as it's -- as a flood event. If that was
19 delivered directly to underground, there is -- I think
20 the number -- about 4 million cubic metres of space
21 available in the mine, that's a little bit of a guess,
22 but, in simple terms, it suggests that you could flood
23 the surface in the worst possible case in three (3) to
24 five (5) days. We have no capability to pump or treat
25 those kind of volumes.

1 If you extend that line of thinking and
2 you are now flooded to surface in that environment, the
3 chambers -- I think this is also an important point: we
4 do show representations in some of the presentations of
5 creating these frozen blocks, and we present them so they
6 look like ice cubes in space. They're really not; they
7 are -- the chambers are voids inside a massive solid
8 rock. So even if you flood the surface it isn't as if
9 you're flooding the chamber; it's surrounded by rock, if
10 you will. It's a distinction I think may be
11 misunderstood by some folks.

12 Once you arrived at the point where you
13 were -- flooded the surface, you would have noncompliant
14 discharge, spilling from A2 Pit into Back Bay. You would
15 then try to undertake the recovery of the mine.

16 Your current pumping systems would be lost
17 due to the inundation. You would have to reconstruct
18 those pumping systems. The Northwest Pond, if you were
19 to assume that this scenario happened, and freshette
20 would be over half full from receding water all year
21 round from the pumping operations, you may have 400,000
22 cubic metres of capacity in the Northwest Pond.

23 So even if you could dewater the mine, you
24 have nowhere to put it to feed it through the water
25 treatment plant. The water treatment plant that exists

1 now under the care and maintenance mode can probably
2 treat a million cubic metres in an open water season,
3 given some of the operational restrictions that we are
4 under.

5 You have a significant challenge. You
6 would be multiple years trying to build or mobilize a
7 temporary water treatment plant, new pumping systems, and
8 you would be treating, in my opinion, for some period of
9 time to recover the mine.

10 THE FACILITATOR EHRLICH: I -- I want to
11 understand what you mean by noncompliant discharge to
12 Back Bay. What kind of concentrations are we looking at
13 in a -- in a worst-case scenario here?

14

15 (BRIEF PAUSE)

16

17 MR. MARK CRONK: I would defer that
18 question to Bruce Halbert, who I suspect would only be
19 able to offer an educated guess.

20 That is one (1) of the certainties, is how
21 fast would -- if you rapidly inundated the mine and how
22 fast would that arsenic dissolve into the water column,
23 would it stay at depth, would it appear at the surface
24 flow and go into Back Bay. I'm going to see if Bruce can
25 give you a better answer.

1 THE FACILITATOR EHRLICH: And -- and I
2 specifically said, you know, one (1) of the pits that has
3 a chamber that's hydrologically connected -- hydro --
4 hydrologically connected underneath it. But I -- I would
5 say that Bruce Halbert's educated guests are -- guesses
6 are purported to be about as good as anyone's purport --
7 educated guesses in this kind of thing.

8 MR. MARK CRONK: Mark Cronk. It is one
9 (1) of the subtleties of the particular project that
10 we're dealing with. There is significant volumes of
11 arsenic already outside the chambers, and in a massive
12 flood situation you would mobilize that arsenic long
13 before you mobilized the arsenic in the chambers.

14 THE FACILITATOR EHRLICH: I -- I
15 understand. So my question is, When you said
16 noncompliant discharge to Back Bay, what kind of
17 concentrations -- I'm wondering what kind of maximum
18 concentrations you're talking about there.

19

20 (BRIEF PAUSE)

21

22 MR. MARK CRONK: Mark Cronk. One (1)
23 thing to carry on while these gentlemen try to answer a
24 difficult question.

25 Even in that very worst-case scenario

1 which would produce a whole bunch of challenges for the
2 team, you would ultimately dewater the mine, recover it,
3 treat the water off as you go, and you would then be able
4 to reinstitute the plant.

5 It would be a mess in terms of recovering
6 the mine, and getting it done, but it would not sterilize
7 the ability to ultimately execute the remediation plan.

8 THE FACILITATOR EHRLICH: It -- it looks
9 like Bruce is ready to give a response but, Mark, do you
10 have something to say first?

11 MR. MARK CRONK: If I may. One (1) other
12 aspect of a massive inundation of water is it would
13 produce significant -- expected significant underground
14 instability issues that would -- would have to be dealt
15 with once we dewatered the mine.

16 THE FACILITATOR EHRLICH: Just on that
17 subject before we go to Bruce. Well, you've pointed out
18 that most of the chambers are voids encased in rock, but
19 -- but you also point out that the same flooding could
20 cause massive instability issues. So I presume that some
21 of the crown pillars and things you've talked about as
22 being unstable could have integrity issues under that
23 circumstance.

24 MR. MARK CRONK: That is possible. I
25 would expect that the majority of conditions would be

1 movement of backfill, which would subsu --
2 subsequently have to be replaced as an active backfill as
3 part of the remediation plan.

4 THE FACILITATOR EHRLICH: So, Bruce, you
5 look like you're ready to go with the question of when --
6 when I hear non-compliant discharge, what sort of a
7 maximum non-compliant discharge in that circumstance
8 would we be looking at?

9 MR. BRICE HALBERT: Bruce Halbert for the
10 record. I -- I pulled back a few numbers that -- that
11 had been mentioned over the last few days.

12 One (1) is that the current concentrations
13 in Baker Creek at the outlet are in the order of a
14 hundred (100) to 200 micrograms, or let's say, .1 to .2
15 milligrams per litre. And in the mine itself we're
16 talking several milligrams per litre of arsenic. In the
17 flood case, you know, I don't know, we're -- it's going
18 to be in the milligrams per litre range, so we're going
19 to be ten (10), twenty (20), thirty (30) times the
20 concentration going into -- into Back Bay that it is
21 currently

22 THE FACILITATOR EHRLICH: So in your
23 worst-case scenario the highest concentrations you're
24 looking at are -- it sounds like about thirty (30) times
25 the current amount that's going into Back Bay.

1 MR. BRUCE HALBERT: Bruce Halbert again.
2 I'll just try and to put it in perspective as to what's
3 in back -- in Baker Creek right now; that doesn't reflect
4 what's in the mine. But certainly the feed to the water
5 treatment plant is in the milligrams per litre range
6 currently.

7 If you flood, you are putting a lot of
8 clean water in there to dilute. You're not gonna
9 necessarily have a massive jump in the -- in the
10 concentration of arsenic in -- in the minewater. It's
11 speculation, but I don't think it's unreasonable. So,
12 you know, 3, 10 milligrams per litre, but it's -- it's
13 going to be certainly above discharge limits.

14 THE FACILITATOR EHRLICH: So would --
15 would this -- these kinds of concentrations result in --
16 in what you would consider to be a biological crisis for
17 Back Bay?

18 Or -- I'm trying to figure out what kind
19 of ultimate effect on, you know, fish, water users, and -
20 - and the ecosystem there that this translates into.

21 MR. BRUCE HALBERT: Bruce Halbert again.
22 In the short time that this event is likely to happen,
23 and we're not talking this being -- lasting for, I don't
24 think for weeks or months necessary, I would expect to
25 see a short-term, if you will, blip going through the

1 system and the system would adjust itself again.

2 You -- you recall the -- the analysis that
3 I gave, if we did nothing on site, and now discharge was
4 something like about 7,000 kilograms per year of arsenic
5 going out, an estimate, on an annual basis, right, so.
6 And that sustained certainly would cause a -- an adverse
7 effect and probably significant in -- in some measures,
8 adverse effect in the environment; certainly compared to
9 water quality criteria, no question.

10 So a short-term blip going through we
11 probably would see a, you know, a rise in Back Bay, for
12 example, above the CCME value of five (5) that we've
13 talked about -- of micrograms per litre. It would adjust
14 itself fairly quickly, but it's going to have some
15 consequence.

16 THE FACILITATOR EHRLICH: But with your
17 technical background, what -- you can -- you can clearly
18 envision what a short-term blip looks like, right?

19 I -- I -- if -- I think in terms of, you
20 know, fish, wildlife, water, that kind of stuff. What
21 does a short-term blip actually mean in terms of the
22 ecosystem in Back Bay? Are we talking about, you know,
23 dead fish? No dead fish? I -- I really don't -- I don't
24 know. And I know that this is not, you know, this is not
25 what you're expecting to happen; I know you're taking

1 steps to avoid this, I -- I get that. But if we're
2 talking about a worst-case scenario, it -- it would be
3 nice to understand what that actually involves.

4

5 (BRIEF PAUSE)

6

7 MR. BRUCE HALBERT: Bruce Halbert again.
8 Well, if we go back historically in -- into the -- into
9 the '70s I think the -- the concentrations in Back Bay
10 were in the 60, 70 microgram per litre range, if I -- if
11 I recall correctly. I'd have to verify that, but we do
12 have a summary table in the -- in the DAR and in one of
13 the responses, I believe, on this.

14

15 And we -- we're going to exceed the CCME
16 guideline of five (5), but that doesn't mean we're going
17 to have a disaster out there. As we talked about with
18 respect to toxicity reference values the other day, the
19 level we need to get to where we're going to have a toxic
20 response, or certainly an acute toxic response, were up
21 in the, you know, a couple hundred micrograms per litre.

22 So I don't think we would end up, in all
23 likelihood with a -- a fish kill, but we certainly would
24 have an effect on some of the ecosystem. And the -- the
25 question beyond that is a longer term question of how

1 long it takes to remediate itself, if you will, over
2 time, but...

3 MS. JOANNA ANKERSMIT: Joanna Ankersmit.
4 I think it's just important to point out following that
5 analysis, which I'm sure everyone clearly understood,
6 it's a bad situation. We would spend significant
7 resources and -- and I just feel I have to state this.
8 If that were to happen, we would spend significant
9 resources to have to address that, which ultimately we
10 would have to assume would be using the money that we
11 would have been using for freezing in the remediation
12 plan to address that crisis event.

13 And so it's really important to understand
14 that the -- the consequences to -- to the people, plants,
15 bugs, and water are very, very important. There would be
16 a significant financial consequence to something like
17 that as well.

18 THE FACILITATOR EHRLICH: Yeah. Thanks
19 for that. Morag McPherson from DFO was -- was en route
20 with some questions there, and I kind of diverted just to
21 try to clarify some stuff that was coming up, and I hope
22 I haven't diverted so much we haven't got back there.

23 But let's let Giant answer the questions
24 that they're ready to answer now, because they had other
25 answers ready to go, and then it'll come back to DFO.

1 MR. MARK CRONK: Mark Cronk. I laid out
2 a scenario of what would happen in this interim period
3 until the site is remediated. I think it's now
4 appropriate to allow Brian Griffin, who is a risk process
5 expert, walk you through some of the interpretation of
6 likelihoods associated with the diagram, and we'll see if
7 we can clarify from there, and we'll move on, if that's
8 okay.

9 THE FACILITATOR EHRLICH: Yeah. Please
10 go ahead, Brian Griffin.

11 MR. BRIAN GRIFFIN: Brian Griffin with
12 the design team. The question here was how to interpret
13 what the scenario was and mitigations around the
14 scenario, I believe, and in the detail back of that, that
15 example that you picked out was dealing with the short
16 term, and specifically example was taking a look in terms
17 of is the likelihood of the -- the complete chain, the
18 complete chain including the consequence, not just the
19 likelihood of, let's say, a collapse of a -- a pillar or
20 something like that. The likelihood is with the complete
21 chain, including that consequence that's defined here.

22 And what was done in the short term was a
23 different scenario of some mitigation that's detailed
24 here, and I -- I'll let John -- I'm not an expert there,
25 but what was done in the short term is basically a

1 different scenario, and that's why the likelihood is with
2 a different consequence here, because they wanted to deal
3 with that in the short term. And the likelihood has
4 actually been -- in the long term has been reduced. That
5 was the objective. It was just a two (2) step process to
6 get there.

7 So in terms of what was done in terms of
8 the consequence on mitigation, I was just going to pass
9 that on to John Hull here.

10 MR. JOHN HULL: John Hull to finish -- to
11 finish that answer. As Brian identified, and in part
12 Alan alluded to, this situation or slide identifies
13 during the -- in the short term when there is some
14 mitigation, but the closure has not been finished.

15 If you look at page B5 and you now move to
16 long term, where we now say there's a bank overtopping
17 and we've now finished the remediation and we're moving
18 to post-closure and we now have another bank overflow, we
19 have identified that the con -- the likelihood now has
20 dropped to a four (4), so that we've increased the period
21 over which it would occur.

22 We've also identified that the -- the
23 severity of the consequence, in terms of public safety
24 and environment, is dropping to an 'A', so it is dropping
25 in terms of the likelihood index, and it is also dropping

1 in terms of the severity.

2 And the cost, because we've now got a
3 stable situation, we've managed that the freeze -- the
4 freeze chambers are working and they're in a steady
5 state; the water treatment plant, the new one's up and
6 running, it's in place; while the mine still wouldn't --
7 not necessarily want to handle a flood of one (1) in two
8 hundred (200) or one (1) in five hundred (500) years, we
9 have finished all of the -- the effort, and we can now
10 handle the flood. Don't want it, but we -- it could be
11 handled.

12 So that's -- this is the short-term
13 scenario. I wasn't clear in saying this is a short-term
14 situation. When we finish in the short term and -- and
15 all the deconstruction and construction, we now move to
16 the long term, which, as I say, has reduced the
17 likelihood and the consequence. John Hull. That's B5 of
18 IR-12. It's one (1) of the tables in Appendix B.

19 THE FACILITATOR EHRLICH: Morag, would
20 you like to continue?

21 MS. MORAG MCPHERSON: Yeah. Morag
22 McPherson with Fisheries. My apologies there for -- just
23 sort of go off. I -- I -- we fully understand the risks
24 and consequences with -- if, in this situation the mine's
25 in now and in the short term, we don't question that at

1 all, and we know nobody wants that, and that's the whole
2 point of this remediation project.

3 We understand that in terms of, we're not
4 questioning what the consequence would be. I think what
5 -- what we were trying to get a little bit more clarity
6 on, or make a point about is -- is the initiating events,
7 and I guess the probability and risks of those initiating
8 events happening that would then lead to a flood, or
9 these various ways that flooding would occur in to the
10 underground.

11 So I think that's where we were focussing
12 on, on those sort of issues to do with stability in the
13 surface and the underground, and sort of the risks
14 associated with those short term and long term, you know,
15 pre-remediation, post-remediation, and ensuring we
16 understood if -- if those risks still -- I mean,
17 obviously you can't eliminate all risk, but if the
18 likelihood is different post that -- that we had a clear
19 understanding of what are all the initiating events,
20 stability onsite and underground, that would cause
21 flooding of Baker Creek. And I think that's where we
22 were trying to go with that.

23 So I think -- you know, I -- it's become -
24 - you know, how we've sort of seen it, or it's come --
25 become clear that there -- a lot of events that aren't

1 from the Creek itself but from the instability on the
2 site, is what -- what we were trying to just make sure we
3 understood that.

4 And -- and sort of as John mentioned
5 there, I think, was where we were trying to get
6 confirmation on, just to make sure we understood what you
7 were presenting in terms of your conclusion were that the
8 risks to Baker from these initiating events, or from the
9 stability of the site, are short term as evaluated here,
10 which obviously there can be lots of discussion on that,
11 and would be reduced once the remediation project is
12 implemented. So we just wanted to make sure that that
13 was our read of it, and that that was -- nothing had
14 changed.

15 MS. LISA DYER: Lisa Dyer. You are --
16 you have interpreted everything correctly.

17 MS. MORAG MCPHERSON: Morag McPherson,
18 and yeah, I understand there's -- you know, it's a very
19 technical document. There's a lot that goes into these
20 things, and -- and that's why -- you know, we -- we want
21 to be in the session as well to hear sort of how these
22 approaches are done, and -- and what kind of questions
23 there might be in terms of what was done here.

24 One (1) last question here. Hopefully it
25 won't spur too much, but I think it's really important

1 for us to understand this. Risk is a -- is a difficult
2 thing to communicate. So the short-term risk considers a
3 timeline of twenty-five (25) years from the start of
4 remediation, and you alert -- alluded to this before,
5 but, however, it's unclear if consideration of risk
6 between now and then have been evaluated.

7 Is there a point at which the short term
8 risk evaluation, as presented here, is no longer relevant
9 such that the probability or likelihood of initiating
10 events -- sorry -- such that the probability or
11 likelihood of initiating events, for example, evaluation
12 of immediate risk to the site, in this extended care and
13 maintenance scenario -- sorry, I -- my question isn't
14 very clear there.

15 I need a -- I need one (1) second here to
16 review it.

17

18 (BRIEF PAUSE)

19

20 MS. MORAG MCPHERSON: Morag McPherson.

21

22 (BRIEF PAUSE)

23

24 MS. MORAG MCPHERSON: Morag McPherson.

25

THE FACILITATOR MERCREDI: Go ahead,

1 Morag.

2 MS. MORAG MCPHERSON: Apologies for that.
3 I had two (2) questions there in a row, and I -- I mixed
4 them up, so you know you're -- you're done when...

5 So, sorry, it's sort of two (2) -- two (2)
6 questions all in the same vein. Is there a point at
7 which the short-term risk evaluation is no longer
8 relevant?

9 For -- for example -- I guess what I'm
10 trying to get to is: Has there been an evaluation of the
11 immediate risk posed to the site in this extended care
12 and maintenance scenario.

13 I'm trying to understand this timeline is
14 from twenty-five (25) years from the start of the
15 project, but like you said, there's a gap in -- between
16 now and then, so has there been a risk evaluation done
17 for the immediate care and maintenance scenario?

18

19 (BRIEF PAUSE)

20

21 MS. LISA DYER: Lisa Dyer. Morag, we do
22 look at the current situation in Baker Creek. We
23 actually just finished an -- an assessment of Baker Creek
24 again and the current conditions, and out of that came
25 that there were some mitigation measures that we needed

1 to put in place.

2 As you may have seen, there was some work
3 done along the C1 Pit, and as well along B2 Pit -- did I
4 get it right? -- B2 Pit, and that's basically, because of
5 the current risks. We felt we needed to build up those
6 areas to ensure that we mitigated those risks.

7 So, yes, we are very aware of the current
8 risks. We evaluate them on a regular basis and update
9 them, and those risks become more prevalent the longer we
10 wait to implement the remediation strategy.

11 THE FACILITATOR EHRLICH: Morag, do you
12 have any further questions?

13 MS. MORAG MCPHERSON: No, that's all.
14 Thank you very much.

15 THE FACILITATOR EHRLICH: You may have
16 noticed that a -- a glass of water that was full here a
17 minute ago has become empty, and my notebook and other
18 things on this desk have become full, and that's --
19 that's actually not intended as a simulation of any kind
20 of a spill event or anything like that. But, you know,
21 the point is that, given long enough -- we've been here
22 for four (4) days -- given long enough, the unexpected
23 can happen, and maybe not on the first day, maybe not on
24 the second day, maybe not on the third day, but -- and I
25 know I'll -- anyway, it's -- if I can find out where my

1 watch went -- we've got fifteen (15) more minutes before
2 the break, so we'll take some more -- some more
3 questions. We'll take one from Lukas Novy, who is
4 consulting for the Yellowknives Dene First Nation.

5 MR. LUKAS NOVY: Hi, there. Lukas Novy.
6 So my question revolves around timeline, and it's similar
7 to Morag's, but it's in a different context, so it's in
8 the future. And I know that -- I think we can get
9 everybody here in the room to agree that forever is a
10 long time, so just for the sake of simplicity, I'll keep
11 it some -- as an engineer, I'll keep it to that hundred
12 (100) year period and discuss it in that context.

13 I just -- first off, I'd like to have
14 clarification on this steady state, because it was
15 mentioned in the beginning as the intro, and then a
16 couple of times in the presentation. Just so that I'm
17 clear on that, is -- there was ten (10) years of
18 construction and then a period of ten (10) to fifteen
19 (15) years afterwards. And then, somewhere in there, I
20 heard steady state. I just want to know -- clarification
21 on when is the expected timeframe for this steady state
22 condition?

23

24

(BRIEF PAUSE)

25

1 MR. MICHAEL NAHIR: It's Mike Nahir.
2 When we refer to steady state, we were referring to
3 conditions on the site post-remediate -- post-major
4 construction to -- and we anticipate some shifts and
5 adjustments and further construction, or possible
6 construction, whether it be to tailings covers or freeze
7 -- you know, in terms of our performance monitoring, what
8 that kind of information gives us in -- on the immediate
9 and then allows us to make adjustments. And so we've
10 provided for approximately a fifteen (15) year period to
11 account for that.

12 So water quality would be at a -- at a
13 very steady, known condition. Our -- our ground freezing
14 is at its -- at its temperatures that we've designed for,
15 et cetera. So -- does that answer your question?

16 MR. LUKAS NOVY: Lukas Novy here. It
17 does to a -- to a certain extent, and it's kind of just a
18 snowball of the past days and some of the questions that
19 have been asked, and -- and it all ties into this.

20 I just have a bit of concern with risk. I
21 understand there needs to be a starting point, and that's
22 -- that's what's been quantified, but the overall risk is
23 -- is that some of these systems -- that there's not --
24 right now, there's no clarity on -- on the real
25 objectives to them, or -- or measures that are going to

1 be taken to evaluate that they are working.

2 So I guess the overall -- I guess the
3 question I have is -- is, in -- in the future, I know
4 that this risk model is going to need to be adapted, and
5 -- and I know that there's a preliminary or an arsenic
6 load model that was utilized to provide some estimates in
7 the amount of arsenic that's gonna be coming into Back
8 Bay and Baker Creek.

9 And I'm just wondering what type of
10 technologies and methods are gonna be used to get most --
11 more certainty on that this steady state -- steady state
12 condition is actually happening, and the timeline of
13 that? Because I'm not a risk assessment guy, but I know
14 that the actual occurrence of when this steady state is
15 really gonna impact the -- the associated risks to the
16 whole system, and -- and it will -- five (5) to ten (10)
17 years in this short term period could be significant.

18 So I just want to get an understanding of
19 what are the future plans to get a more refined value for
20 this steady state condition to be actually achieved?

21 MS. LISA DYER: Lukas, are you referring
22 to tailings water? I'm -- I'm not sure I fully
23 understand your question.

24 MR. LUKAS NOVY: Lukas here. I'm
25 actually referring to all of it, because it is a system,

1 and -- and I understand that the freezing system is most
2 significant.

3 But my understanding of steady state is,
4 is that the whole system is stable, not just a component
5 of it. So that's -- I hope that -- I don't know if that
6 clears it up a bit, but I would like to know the overall
7 system, and what's being done to it.

8 THE FACILITATOR EHRLICH: I'll give the
9 Giant team a moment to consider its response.

10

11 (BRIEF PAUSE)

12

13 THE FACILITATOR EHRLICH: Okay, Giant
14 time -- team, go ahead here.

15 MR. MICHAEL NAHIR: Mike Nahir. What
16 we've recognized is, is that in -- after the major
17 construction period that we need to -- and we've provided
18 for a conservative estimate of period of time to account
19 for the changing system as a whole to try and get to a
20 point where we -- we have complete predictability and
21 understanding of the system, and it's yielding results
22 that we are expecting as a result of our performance.

23 Now, you're talking about performance.
24 I'm gonna pass that over to Lisa because she will talk a
25 bit about that.

1 MS. LISA DYER: Lisa Dyer. I just want
2 to clarify for the record that we do have clear
3 objectives for our remediation of the site, so there are
4 clear objectives. They're outlined in the developer's
5 assessment plan and the remediation plan.

6 We do have performance criteria to see
7 whether we are successful. I think the issue is, we
8 don't have those specific numbers to give you.

9 As for the -- determining when we kind of
10 reach an equilibrium in the underground water is that's
11 really important to -- as this is a site that we have
12 inherited responsibility for is we don't know everything
13 that's happened underground. So I can't say tomorrow in
14 five (5) years the concentration of arsenic in the
15 groundwater will be thirty (30) parts per million. I
16 can't say that.

17 What we do know is that we will see some
18 increases and we will need to monitor that. And once we
19 see that trend of stability happening, there will be some
20 tri -- that will trigger our management of the site.

21 So I -- I appreciate your concerns and
22 wanting some more concrete things, but part of the nature
23 is we are going to have to monitor, see the results, and
24 adapt to that. And that's why we keep on coming back to
25 the environmental management system being really key for

1 us to be able to respond to that environment that we
2 don't have all the answers for right now.

3 But we do have a good understanding of
4 what we need, and we do have a good understanding of when
5 things are successful, and we do have plans in place to
6 adapt to anything that we did not anticipate.

7 We're trying to cover all the basis. What
8 I think to be fair is, is that we need to communicate
9 more effectively that thought process with the parties,
10 because this is -- you've demonstrated to us, this is a
11 concern.

12 We hope to talk about this in the
13 environmental management plans tomorrow, but really to
14 assist us we would like to hear from you on kind of how
15 we can -- what you're looking for from us in that where
16 you need input, where you see you can work with us to
17 make sure that we have addressed your concerns.

18 MR. LUKAS NOVY: Lukas Novy here. Thanks
19 for that, Lisa.

20 And I -- and I do understand the
21 complexity of it and which -- what stage we're at and I
22 understand all that is, and how the overall operations of
23 it is -- it needs to be monitored and all of those
24 things. It's just, my understanding on risk is it's a
25 prediction of things in the future. And you guys will be

1 collecting data. You will be -- there's some research
2 data, there's numerical model data on the frozen blocks.

3 And I would just like to get some sort of
4 -- I -- I guess, alleviate my concern that you're not
5 gonna be evaluating risks on the fly as -- as you're
6 operating it. And I -- I just would like some sort
7 details on what type of predictive mechanisms are you
8 gonna use with the data that you're going to be
9 collecting to help get the risk value more stable in the
10 future. That -- that's just the basis. And I don't need
11 the numbers because I know you can't -- I -- I just want
12 to get an idea of how you guys plan on doing that.

13 Because, just collecting data and saying
14 things are working great, you can use that data to
15 predict things in the future to a certain level of
16 certainty.

17 MS. LISA DYER: Yeah. Thanks, Lukas, for
18 that clarification.

19 And I think, you know, for example we've
20 talked about right now we have a -- and I'm going to get
21 these technical terms, a thermal model for the operation
22 of the freeze; we gathering information, we compare back
23 to the -- the original, kind of, predictions in the
24 model. We may have some real-time data so that we can
25 calibrate the model better to help us in the future, so

1 we've got that model.

2 Again, we've talked about the model for
3 diffusion for the operation of the diffuser. So we've
4 got some model, we plan to get some data from the actual
5 site to help us calibrate that model. That will help us
6 determine the performance in the future.

7 We've talked about our air quality and
8 that we have a model. Again getting some real-time data
9 will help us calibrate that model and we can use these
10 tools that we have to help us in the future.

11 And -- and -- so I -- I'm just giving some
12 of those examples and I -- I'll let tech --- other tech
13 people with more technical expertise in certain areas
14 want to talk to those things. But we do have these tools
15 to help us make predictions and we want to calibrate them
16 and use them as a tool to help us see how we're doing in
17 the future.

18 THE FACILITATOR EHRLICH: We're almost at
19 the break now. And just before the break I'm going to
20 take -- allow Cesar Oboni, who's one of the experts for
21 the Board to ask a question. My understanding is that
22 it's not a simple question. There will be an opportunity
23 after the break to follow-up, but I do want to get this
24 out before the question.

25 Are you guys still in the -- are the

1 Yellowknives still in the middle of this, or is this a
2 separate question? A follow-up to specifically what you
3 were discussing a moment ago? Okay. Go ahead, please.

4 MR. LUKAS NOVY: I'll let everyone get to
5 lunch here or not lunch, break. Lukas.

6 But I just wanted to -- so you did mention
7 the models and I just wanted to ask, specifically is
8 there any sort of plans to use a water quality model for
9 expected mine water quality with time as the elevations
10 are being changed and the -- also the introduction of
11 tailings and water quality from after the cover and all
12 of that.

13 Is there any plans for that in the future?

14 MS. LISA DYER: It is currently being
15 done. It will continue to be done.

16 THE FACILITATOR EHRLICH: That was
17 succinct. And just before the break, it looks like a
18 somewhat detailed question by Dr. Frank Oboni --

19 MR. CESAR OBONI: Cesar.

20 THE FACILITATOR EHRLICH: -- oh, sorry.
21 Dr. Cesar Oboni. I've confused him with his co-author on
22 his book.

23 Please, go ahead, Cesar.

24 MR. CESAR OBONI: It's -- I'm changing
25 subjects here. And I was wondering about the rationale

1 about cutting the probability at ten (10) minus three (3)
2 or the frequency of one (1) per -- for every one thousand
3 (1,000) years. And it fails -- what's the rationale
4 behind for cutting that -- for a project that would last
5 at -- at -- at eternity. Sorry about that.

6 THE FACILITATOR EHRLICH: So as I
7 understand the question, the question is: What is your -
8 - the rationale behind -- I -- and I'm gonna say for the
9 benefit of the record that we're looking at slide 18 on
10 today's presentation dealing with the Baker Creek flood.

11 What's the rationale for cutting off your
12 investigation to only once every thousand (1,000) years
13 when the project is proposed to continue for ten thousand
14 (10,000), a hundred thousand (100,000), and forever?

15 Dr. Oboni, did I get that right?

16 MR. CESAR OBONI: Absolutely.

17 THE FACILITATOR: We're gonna let the
18 Giant Team figure that one out over the break, and we're
19 going to get back here in -- we'll go with fifteen (15)
20 minutes, so it'll be at three o'clock we're gonna start
21 up again. And at that time, we hope the Giant team is --
22 is good to respond. Thanks.

23

24 --- Upon recessing at 2:45 p.m.

25 --- Upon resuming at 3:08 p.m.

1 THE FACILITATOR EHRLICH: Okay. Before
2 we start, and while the Giant team sits down -- the --
3 while the Giant team sits down -- the Giant team. Alter
4 -- Alternatives North indicated in the break that there's
5 a short piece of followup to something that was discussed
6 immediately before that it -- it wants to ask.

7 And then I -- I've got something, just a -
8 - a slight variation on a question I asked a few minutes
9 ago, and then we're gonna get back to Cesar Oboni's
10 material.

11 So let's start with Alternatives North,
12 please.

13 MR. KEVIN O'REILLY: Thanks, Alan. I was
14 just having a -- a good conversation with Lisa and Ray,
15 and I wish I had more time. But I wanted to go back to -
16 - I heard -- I think I heard Daryl Hockley talking about
17 the timeframe that was -- that the folks that
18 participated in the risk management or -- let me -- I'd
19 better use the right terminology here, 'cause I think at
20 times we're miscommunicating because of words.

21 The folks that were involved in the
22 failure modes effects criticality analysis, I heard that
23 there was this sort of one hundred (100) year timeframe
24 that they used, and that it could have been a random
25 selection of a hundred (100) years anywhere during the

1 life of the project, which is forever.

2 But when I read the definition of "long
3 term" from -- this is the -- their report, it says:

4 "The identification assessment of these
5 risks is limited to what the assessment
6 team can envision for the next one
7 hundred (100) years, based on the
8 current remediation plan. This one
9 hundred (100) year period is the time
10 in which the remedial components are
11 expected to function within the
12 specified parameters."

13 Blah-blah-blah-blah-blah. So when I read
14 it, that's the hundred (100) years. It's a hundred (100)
15 years after the stuff gets to this steady state, but
16 we've got a project that's perpetual care.

17 Now -- and I -- I'd be interested in the
18 response from the proponent -- or sorry, the proponent --
19 the developer, but I -- I want to take just a minute to
20 read -- I don't read very much these days, but the stuff
21 that I do read is pretty heavy going, so. And I haven't
22 been able to finish this book. It's called, How Humanity
23 Communicates Across Millennia Deep Time, and the author
24 is Gregory Benford.

25 And this individual has been involved in

1 the planning of nuclear waste facilities in the United
2 States, and I think they are starting to get a pretty --
3 or a much better handle on the idea of perpetual care
4 than -- than maybe folks in Canada. But I understand
5 some of this thinking is starting to flow over into how
6 we're planning nuclear waste facilities in Canada.

7 And look, we're not talking about planning
8 a nuclear waste facility here. I understand that, but I
9 think the -- the kind of thinking around deep time and
10 perpetual care is something that's really important, and
11 that we need to talk a lot more about in the context of
12 Giant Mine.

13 So I just want to take a second to read
14 one (1) part of this book that I think starts to get at
15 what -- we need to change our way of thinking a little
16 bit. And it's found on page 38, and I just want to take
17 a minute to read this:

18 "Going back a thousand (1,000) years
19 takes us to the middle of the [sorry]
20 the middle of the middle ages in
21 Europe. Virtually no political
22 institutions from this era survive,
23 although the continuity of the Catholic
24 church suggests that religious
25 institutions may enjoy longer

1 lifetimes. Most history beyond a
2 thousand (1,000) years is hazy,
3 especially on a regional scale. Prior
4 to the Norman invasion in 1066, English
5 history is sketchy. Beyond three
6 thousand (3,000) years lie vast
7 unknowns. Nine (9,000) years exceed
8 the span of preve[n] -- present human
9 history."

10 So how do we start to think about the
11 Giant Mine forever? I just -- not sure that we're there,
12 and so I'll take it back down to earth again where the
13 definition of the long term in here seems to be a hundred
14 (100) years.

15 So I think I -- I did make a suggestion
16 about maybe the need to talk more about this, and have
17 some sort of a workshop or something at some point, and I
18 understand we're gonna talk some more about this tomorrow
19 morning at eight o'clock in the morning.

20 But -- anyways, the definition of "long
21 term" in the -- this assessment seems to be a hundred
22 (100) years, and I think we need to think a lot -- a lot
23 lot further out than that. Thanks.

24 THE FACILITATOR EHRLICH: Okay. Thanks,
25 Kevin. And Alternatives North indicated before that it

1 was considering submitting that book for the public
2 record. Let us know what you decide later on.

3 But in the meantime, the part that you've
4 read is certainly on the transcript, and I'm -- I think
5 you -- the point illustrates some of the stuff we were
6 discussing earlier, I guess.

7 The -- the question that I wanted to
8 follow up with the previous discussion that I had that
9 included Bruce Halbert. In other words, the questioning
10 beforehand. Was we were talking a bit about worst-case
11 scenarios over the kind of time span that we're thinking
12 about now, which -- which I guess Kevin's just
13 characterized as -- well, nine thousand (9,000) years is
14 equivalent to the current span of human history, but this
15 will have to keep working for much longer.

16 The worse case scenario we describe now
17 with the bank overtopping and the Baker Creek flooding,
18 that was for the very beginning before the chambers are -
19 - are frozen. And then I understand that once the
20 chambers are frozen, that same event is much less
21 alarming because there's much less arsenic that can -- is
22 a state that it's readily soluble, or ready accessible to
23 -- to water, it's just surface water that's passing
24 through.

25 But thinking about really long term spans,

1 you know, the -- the period we're talking about here, my
2 understanding is some of the discussion this morning had
3 to do with, you know, whether or not there will still be
4 the same kind of society here.

5 And, you know, if you go far enough into
6 the future -- I mean, you can think of scenarios where
7 there -- there may not be people onsite to keep doing
8 routine maintenance, and -- and the kind of things that
9 have been described as being necessary periodically.

10 I mean, we're talking, you know, very long
11 periods of time here, the kind that Kevin was talking
12 about.

13 If there's no one on site to do ongoing
14 maintenance or what have you and you get a bad flood
15 event and -- and you don't have the kind of remedial
16 measures that you can do when -- when there are people
17 there to help -- and I understand the -- the intention
18 right now is to have people there forever, but if there
19 are not, and over a long -- long enough period of time,
20 you know, that could be a credible scenario, then -- then
21 what does the worst-case scenario windup looking like
22 then?

23 I mean, if you have that kind of an event,
24 I imagine that eventually you could have thermosyphons
25 stopping to work, and eventually you could have the

1 frozen block thawing and with a bad freshet -- what you
2 call a very bad day -- now I'm going to amplify that to a
3 very, very, very bad day, right? You don't have -- you
4 don't have the government ready to step in and take the
5 kinds of responses that -- that I think Joanna has very
6 responsibly pointed out. The government is ready, you
7 know, if -- if something goes wrong in the first chunk of
8 time definitely we'll spend serious resources to work at
9 cleaning it up. But if there's, you know, no one around
10 or on site able to do this, then your response changes.

11 In that case, what are the ultimate
12 consequences in terms of the bio-physical environment?
13 I'm talking about, you know, Back Bay, Great Slave Lake.

14 I -- you know, this is -- the kind of
15 likelihood that we wouldn't really have to look at for a
16 shorter term project. But for something proposed for
17 forever I feel that if you're gonna look at a worst-case
18 scenario is it may as well be, you know, worst case --
19 like, from very bad day, to very, very bad day.

20 So are we talking about the -- the same
21 kind of results? Because I thought the results you
22 discussed before were with government intervention
23 promptly and doing everything you could to -- to manage
24 it.

25 Do you care to respond?

1 MR. MARK CRONK: Mark Cronk. Could we
2 have a few minutes?

3 THE FACILITATOR EHRLICH: Yeah, sure.
4 Thanks.

5
6 (BRIEF PAUSE)

7
8 THE FACILITATOR EHRLICH: Okay. Is -- is
9 the Giant team ready to respond?

10 MS. LISA DYER: Yes. Lisa Dyer for the
11 Giant Mine team. We have always presented this project
12 as a project that requires perpetual care, or some
13 presence onsite. We have never promoted this as a walk-
14 away solution.

15 Arsenic is an element, and there is --
16 and, chemically, there's no way just to make it
17 disappear. This will stay with us, this -- there's no
18 way to convert it into something else; that is never
19 going to break down, so there's always going to be a
20 level of care. There's always going to be a level of
21 presence needed on site and a level of responsibility
22 that we are passing down to future generations, and that
23 is the nature of where we are at.

24 Now, I would like to say that if we did
25 nothing at Giant, if we just continued to pump and treat

1 like we -- we did -- we're doing right now, and there was
2 a total breakdown of all society, we would have a far
3 worse problem than if we implement the freeze and there's
4 all of a sudden a breakdown of society. We have far more
5 protection, and the reason the frozen block was chosen
6 was because it is robust and it is able to -- it -- it is
7 stable on its own, even without -- for a fairly long
8 period of time, and we can debate what "long" is, but
9 compared to other options.

10 If we removed the arsenic from the
11 underground and it was stabilized on the surface, there
12 would be a level of care and presence needed. If we kept
13 it underground and somehow stabilized it, there would
14 still need to be a presence.

15 So I really appreciate that -- the concern
16 of future generations and the -- the nature of this being
17 here forever is of great concern, but the project we're
18 presenting is to try and provide the best solution
19 possible for a situation that does not allow us to walk
20 away.

21 THE FACILITATOR EHRLICH: Lisa, thanks.
22 I think it's -- you know, I -- I want to -- I want to be
23 careful. I don't want to raise any kind of evaluation of
24 alternatives, because that's obviously not inside this
25 scope, but I think it's also very helpful that the Giant

1 team has taken the opportunity to articulate this on the
2 record in such a way that -- because, I mean, I can see,
3 and we have heard other parties asking about this kind of
4 thing.

5 And, I mean, obviously, your response is a
6 -- you know, a carefully considered one, knowing as much
7 as you do about the project, and I think it's -- it's
8 very helpful to have it laid out that way. I mean,
9 certainly, no one can accuse you of sugar coating, right?

10 Is there anything else that -- and if you
11 want to add to that, or does that -- that capture the
12 summary?

13 And I think a very important point that --
14 a very important point that we just heard in Lisa's
15 response is a reminder that -- that, you know, the
16 arsenic is already onsite and is gonna need some kind of
17 management, and that -- that there is no magic solution
18 out there, and the Giant team is working hard to do the
19 best it can with the hand that it's been dealt on this
20 thing.

21 But I -- I just think it's helpful. I
22 think you just put in a -- a succinct manner that I think
23 may help parties understand better where the Giant team's
24 coming from. So sorry for asking the hard questions, but
25 it's part of what comes with the role.

1 MS. LISA DYER: Thanks, Alan. No, the
2 hard questions are important, because it allows us to
3 have a common understanding of really the true issues
4 we're dealing with and how we are -- the Government of
5 Canada and the Northwest Territories -- committed to
6 dealing with this issue.

7 THE FACILITATOR EHRLICH: It -- I
8 understand Amy Sparks has a short followup, and then
9 we'll get -- and Alternatives North has a comment, and
10 then I'm going to go back to Cesar Oboni, as promised
11 before the break.

12 MS. AMY SPARKS: Amy Sparks. Thanks. I
13 just have a quick comment, and I guess this comes from my
14 experience of dealing with remediation projects, but I
15 guess I'm just -- I think that the questions are
16 important, but that they need to be seen in the
17 perspective that we are dealing with a remediation, and,
18 I mean, the worst-case scenario is now. We're not
19 talking about a new development where there's going to be
20 impacts; we're talking about making it better.

21 And some of these things, like tailings
22 covers, we're talking about them living on forever.
23 Every tailings cover that's ever been designed, every
24 landfill that's ever been designed, is meant to be there
25 forever, so these aren't new things that they're trying

1 to implement; they're standard goals that are done on all
2 remediation projects, and I think that that's an
3 important point that's not coming across, so I just had
4 to make that comment. Thank you.

5 THE FACILITATOR EHRLICH: Thank you, Amy,
6 and I understand what you're saying with respect to
7 tailings covers. Some of the stuff that's proposed with
8 regard to the frozen block, and considering its location
9 and -- and contents are unique about this site and are
10 not standard to other kinds of mine reclamation, and
11 because of that, the Review Board has a responsibility to
12 consider this kind of thing carefully, as I'm -- I'm sure
13 you will agree.

14 But your point regarding at least the
15 surface tailings is certainly clear. You're -- what's
16 proposed here is not radically different for the surface
17 than what's been proposed at other mine sites, and I
18 think -- I think everyone in the room understands that,
19 you know, with -- with certain particulars having to do
20 with a few other differences on site.

21 Alternatives North...?

22 MR. KEVIN O'REILLY: Thanks, Alan. Kevin
23 O'Reilly. I'll try to be more careful with my words, but
24 I guess one (1) of the few things I've learned on --
25 being on this planet for about fifty-three (53) years

1 now, is that human systems, they change, they transition,
2 and usually they fail, no matter what we do, whether we
3 want it or not.

4 And in fact, I was at the big
5 international mine closure conference in Lake Louise a
6 few weeks ago, and I was actually kind of astounded to
7 hear an increasing number of engineers actually say that,
8 as well, about the things that we think we try to do
9 forever with mine sites. And I'm not trying to say
10 that's what you folks are doing in any way, but that's
11 the reality of it.

12 So I -- I think -- I think there's some
13 communications stuff that sometimes gets in the way.
14 When I hear -- I guess what I hear from the Giant team,
15 and have heard, I guess, over the last number of years,
16 is that the frozen block is a permanent solution.

17 And when I think about permanent
18 solutions, that means forever and when I know that -- or
19 have this understanding that human systems fail, that
20 doesn't make me feel very good.

21 So I think if there was a way to -- and I
22 think the way that the project is being designed, the --
23 the way the remediation is being designed, there is
24 levels of redundancy, and that's good from an engineering
25 perspective. Those are really good.

1 terminology before, things like the ability to do ongoing
2 research and development, to review technology,
3 independent oversight. Those are the sort of
4 redundancies and extra levels of precaution that I think
5 our organization is interested in having a discussion
6 around, as well. So that's building redundancies on the
7 human side of things.

8 So I'm not sure that's very clear or
9 helpful, but I have sensed that there's been some
10 movement on some of these things, and that's good. In
11 the IRs, you actually say you will now do a technology
12 review every ten (10) years. That's good. You didn't
13 say that at the beginning, before we got into this
14 process, so there has been some progress.

15 And I'm interested in continuing to talk
16 about the other things, and I think that's one (1) of the
17 reasons why we're here. Thanks.

18 THE FACILITATOR EHRLICH: Thanks, Kevin.
19 I think some of what you're discussing now might fit well
20 into what's going to be discussed tomorrow also. So
21 rather than continue with this particular line. I mean,
22 I think, you know, people have had a chance to say what
23 they need to say on -- on this, and I -- I'd like to pass
24 it back to Cesar Oboni, or rather to his question, which
25 the Giant team -- man, and -- and looks prepared to

1 respond to.

2

3

(BRIEF PAUSE)

4

5 MS. LISA DYER: Thank you, Alan. Lisa
6 Dyer, here. Cesar, if you wouldn't mind, we'd like to
7 first of all respond to the hundred (100) year time, our
8 kind of number given in the risk assessment. I'm going
9 to ask Daryl to speak to that. And we do then plan to
10 answer your question, and Mike Nahir here will answer
11 your question. So if you could just bear with us for a
12 moment, and -- and we do plan to answer your question.

13 So I'm going to pass the mic on to Daryl,
14 and then Daryl, once he's finished, will pass the mic on
15 to Mike.

16 MR. DARYL HOCKLEY: Daryl Hockley. I
17 think this is a -- just a minor postscript. I think
18 there's substantial discussion that's gone forward, but I
19 didn't want to leave it on the confusion over whether
20 this report looked at long term risk, or looked at only
21 the next hundred years.

22 There is about five (5) sentences in here,
23 and if you read that paragraph, they're actually
24 inconsistent. And I think the -- the -- what's hiding in
25 here is the term "steady state," and I now for the first

1 time understand why Lukas kept asking all those questions
2 about steady state, because it's only the assumption of
3 steady state that makes the hun -- the first hundred
4 years apply to all subsequent hundred years. That's the
5 presumption of steady state; that whatever is going on
6 there is going to keep going on like that forever.

7 So there was one (1) sentence in here that
8 I think is just flat out wrong, which is:

9 "The identification assessment of these
10 risks is limited to what the assessment
11 team can envision for the next hundred
12 years."

13 That's -- that I think is just --

14 THE FACILITATOR EHRLICH: Hold -- hold --
15 yeah, sorry. Daryl, not only could the transcription not
16 keep up, but the rest of us were shuffling papers along.
17 I'm not quite sure where you're at.

18 MR. DARYL HOCKLEY: Sorry.

19 THE FACILITATOR EHRLICH: Would -- would
20 you mind telling us where you're at, and then --

21 MR. DARYL HOCKLEY: It's about --

22 THE FACILITATOR EHRLICH: -- start at the
23 beginning again.

24 MR. DARYL HOCKLEY: Sorry. Yeah, okay.

25 THE FACILITATOR EHRLICH: Are you in the

1 IR or in the attachment?

2 MR. DARYL HOCKLEY: No, Kevin was looking
3 at the attachment Section 2.1.2 on the discussion of long
4 term, and he pointed out the wording in here as heavily
5 emphasizes the hundred years.

6 THE FACILITATOR EHRLICH: Okay. Please go
7 ahead and read it, just a touch slower.

8 MR. DARYL HOCKLEY: Yeah. So -- okay.
9 So it emphasizes the hundred years. It says the -- the
10 second sentence says:

11 "The assumed end point of this time
12 line is one hundred (100) years
13 beginning after steady state is
14 achieved."

15 So the -- the presumption of steady state
16 is, those are the conditions that are going to apply
17 indefinitely over the long term.

18 So the -- so I think that is consistent
19 with my earlier statement that we -- my
20 oversimplification perhaps that we had a hundred years
21 that we could move anywhere in time because under the
22 assumption of steady state that hundred years is the same
23 in terms of risks as that hundred years, that hundred
24 years, and any other hundred years.

25 So, yeah, there are other sentences in

1 here that are, first of all, inconsistent with that
2 statement, and inconsistent with my understanding of that
3 workshop, so I think there is some editorial problems in
4 here.

5 But I -- I am 100 percent sure that the
6 workshop was thinking in terms of the very long term, and
7 what could happen over the very long term, not the next
8 hundred years only.

9

10 (BRIEF PAUSE)

11

12 THE FACILITATOR EHRLICH: Is there -- is
13 there a further response from the Giant team?

14 MR. DARYL HOCKLEY: It's just a question,
15 if you need an undertaking of some sort to make a
16 correction to that, or what the pro -- procedure is from
17 here on in.

18

19 (BRIEF PAUSE)

20

21 THE FACILITATOR EHRLICH: I -- I think it
22 -- it would be helpful since you've -- you've recognized
23 that parts of that are -- are not correct in the view of
24 the Giant team, for the Giant team to give us in -- in
25 writing some kind of a replacement. I think it might

1 the Giant team to Dr. Oboni's question?

2 MR. MICHAEL NAHIR: Yeah. Yeah, it's
3 Mike Nahir. Sorry -- sorry about the never ending
4 response there, perpetual response. I -- I think,
5 although, we're still in number -- number 1 likelihood.

6 The -- I think the -- the general answer
7 to your question -- and the question was: Why does --
8 why do we not consider periods greater than a thousand
9 years? if I understand correctly, is that it's -- to
10 recognize that it's a -- it's a bit of a coarse
11 assessment of likelihood. We -- we don't feel here, in
12 discussion with the team, that there are scenarios that
13 we didn't consider as a result of the fact that there's --
14 - that it still -- any -- any exc -- anything would be --
15 over a thousand years would be captured in this due to
16 the coarseness of the assessment. We didn't -- we don't
17 feel like that we've eliminated any events as a result of
18 having it to be a thousand years, it would just show up
19 as a very low likelihood. So that's -- that's the -- the
20 general answer to your question.

21 We also tried to capture events of some
22 likelihood of probability to be signif -- that -- that
23 would have some significance. So that's -- I hope you
24 understand that.

25 MR. CESAR OBONI: My main concern about

1 that is that by limiting your probability that is
2 actually for very serious hazards, that amount of
3 arsenic. It's -- might cause the cutting off of valid
4 scenarios.

5 And this is -- do -- do you have records
6 with the scenarios that you did cut off?

7 MR. MICHAEL NAHIR: Sorry. It's Mike
8 Nahir. I -- I think I was unclear in my previous comment
9 because I was thinking as I was talking, which -- that's
10 dangerous.

11 We -- we did not eliminate any scenarios
12 as a result of likelihood or anything, so it includes
13 anything less frequent. Sorry, I was still thinking
14 there.

15 MR. CESAR OBONI: Cesar, for the records.
16 So there was no events that was judged a priority,
17 irrelevant, too crazy that you might have kept out?

18 MS. LISA DYER: Cesar, I am not -- this
19 is Lisa Dyer. I am not a risk assessment person and I
20 sat in a room for two (2) days listening to engineers and
21 biologists and others that were not in those fields throw
22 out every single conceivable idea they could come up
23 with. We didn't take things off the table or say, no,
24 we're not going there. We really took the time to make
25 sure we were considering all options.

1 MR. CESAR OBONI: Cesar, for the record.
2 So the -- those hundred and two (102), hundred and --
3 sorry. Hundred and two (102) risk failure scenario are
4 the totality of what you identified?

5 MR. MICHAEL NAHIR: Mike Nahir. That's
6 correct.

7 MR. CESAR OBONI: Thank you.

8 THE FACILITATOR: Doug Ramsey, a
9 consultant to the Review Board, has a question.

10 MR. DOUG RAMSEY: Doug Ramsey. I'd like
11 to explore a little bit more of that very bad day and
12 just look at some of the things that were considered on
13 that very bad day. Considering that the -- the flood
14 event that was considered, of course, would not have
15 happen in isolation but would most likely occur in a wet
16 period so that in addition to dealing with the event
17 itself you would already be dealing with both before and
18 after that event somewhat unusually wet conditions,
19 probably upon full or more than half full and just
20 generally wet conditions.

21 Were those kinds of shall we say rela --
22 related or cascading events considered as part of the
23 risk assessment?

24

25 (BRIEF PAUSE)

1 THE FACILITATOR EHRLICH: Can I -- Doug
2 Ramsey, can I get you to just clarify something. Are you
3 asking that question with respect to where we are now or
4 after the project reaches what's been described as a
5 steady state?

6 MR. DOUG RAMSEY: I'm asking specifically
7 with respect to where we are now, like the -- the pre-
8 steady state condition before the -- the frozen block is
9 established, which is related to the very bad day, as it
10 was referred to earlier. Doug Ramsey.

11

12 (BRIEF PAUSE)

13

14 MR. JOHN HULL: John Hull. Yes, we did
15 consider the fact that you would have during a flood a
16 very wet period. The scenario that we were considering
17 would have been that storm event on snow, which would be
18 the spring, which is, in fact, some of the worst
19 conditions that you could experience for a variety of
20 reasons.

21 There's -- well, you've got the snow pack.
22 You don't have any infiltration. And then you put the
23 rain on top of that. So it would be -- everything would
24 be wet at the same time as the flooding.

25 MR. DOUG RAMSEY: Thank you. Doug

1 Ramsey. Following on on the consideration of cascading
2 effects, I'm wondering if, in that same scenario, and it
3 was related, the difficulties that would be encountered
4 in handling the water from the underground, and also some
5 of the potential issues, anyway, associated with
6 underground stability, did that consideration go so far
7 as to consider the potential for the failure of one (1)
8 or more of the arsenic chambers?

9 MR. JOHN HULL: John Hull. The
10 expectation was that if we did get that -- that flood
11 event, that one (1) of the bigger concerns would be an
12 impact to one (1) of the chambers or stopes that are
13 storing the arsenic that would release a large volume of
14 arsenic to the un -- into the mine system and potentially
15 into the deeper mine, which would then have a higher load
16 in the long term to the water treatment plant, which
17 would then have to be reflected in the design and the
18 operation of the plant. So it was considered.

19 MR. DOUG RAMSEY: Doug Ramsey. Thank
20 you. And as part of the -- the previous -- I -- I guess
21 all parties would consider it to be a back-of-the-
22 envelope calculation of what -- what the ar -- resulting
23 arsenic concentrations would be that were discharged to
24 Yellowknife Bay.

25 In consideration of the failure of one (1)

1 of the arsenic chambers, does that modify in any way the
2 estimates of arsenic concentrations that would have to be
3 handled either with respect to the concentration or the
4 duration over which the elevated concentration would have
5 to be managed through the water treatment plant, or even
6 if the water treatment plant could handle those
7 concentrations?

8

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(BRIEF PAUSE)

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MS. LISA DYER: Lisa Dyer, for the record. Doug, that was an excellent question, and I have Bruce Halbert thinking about the response to that, and I will give him a second so that he can come up with a super-duper fantastic answer for you. See? By just saying super-duper fantastic, he is ready.

MR. BRUCE HALBERT: Talk about putting me on the spot. Bruce Halbert, for the record. The estimates -- I -- I presented a -- a scenario in a former presentation of a -- a discharge load of seven thousand (7,000) kilograms per year, and we had a range actually estimated between two (2) and twelve thousand (12,000) as a possible range. That is in part based on solubility really limits of arsenic, or trioxide, in the -- in mine water.

1 You also have to consider, though, that
2 not all the mine water's going to flow through the
3 arsenic chamber and be at that kind of limit, so the --
4 the estimates we came up with, let's say, are directly
5 linked to the solubility of arsenic trioxide, but not
6 assuming all the water flow is going through a chamber,
7 for example.

8 So we've come up with a -- what we
9 consider to be a reasonable range, taking into
10 consideration mine water quality as it exists today, what
11 it could be impacted by water flow, part of the water
12 flow, at least, going through a chamber.

13 MR. DOUG RAMSEY: Thank you. That is a -
14 - thank you for that. And just as a point of
15 clarification -- Doug Ramsey again -- now going back to
16 your estimate offered earlier this afternoon with respect
17 to what sorts of concentrations might be going out to
18 Yellowknife Bay, certainly we've seen the -- the annual
19 estimate of mass load, if -- if we're looking at the non-
20 remediation scenario and the underground workings
21 flooded. I'm look -- looking more specifically at this
22 sort of cascading failure scenario, and whether it got
23 into the few milligrams per litre, or if -- if a chamber
24 was -- did fail, that it would increase above that few
25 milligrams per litre that you were indicating earlier.

1 about recently are, with the plan, the proposed
2 remediation project, are certainly less than that, which
3 is good.

4 Now if I go and look at our water quality
5 predictions we had back in -- in -- during the op --
6 historic operating period, and -- and this, I'm going to
7 talk about Back Bay. I can talk about Yellow -- Baker
8 Creek also if you like.

9 But when we had 25,000 kilograms per year
10 coming out, we were looking at a concentration in Back
11 Bay between approximately 40 and 60 micrograms per litre.
12 We're already talking factors lower than that.

13 When we step down to that 14,000 kilograms
14 per year, we're already down into the, I'm going to say
15 25 to 35 micrograms per litre range and dropping down
16 from there.

17 So the real consequences if we -- if we
18 did lose control here on this, is not -- is not a
19 disaster as far as Back Bay and Yellowknife Bay is
20 concerned.

21 So I think that needs to be put in
22 perspective. It's not a catastrophe if something
23 happens. It's not necessarily a desirable situation, not
24 advocating that, but I'm simply saying that it's not as
25 if we're going to have, you know, everything wipe out --

1 wiped out and everything floating down the Great Slave
2 Lake upside down.

3 MR. DOUG RAMSEY: Thank you very much.
4 Doug Ramsey. That's exactly why I asked the question.
5 It -- it applies boundaries to it very well. Thanks.

6 And just one (1) question following on
7 from that one. And how long was it estimated to take to
8 remedy the consequences of that sequential failure, for
9 example, dealing with the water and work through the
10 process of getting things back to a point where you could
11 progress with the project again?

12 THE FACILITATOR MERCREDI: Yeah, we'll
13 give the Giant team a minute to caucus on that.

14

15 (BRIEF PAUSE)

16

17 MR. MARK CRONK: Mark Cronk. We've
18 looked at the scenario and run through some response
19 plans in concept, if you will. Certainly, no cer --
20 certainty to what I'm about to say, but there are
21 companies like John Moonyea (phonetic) who have large,
22 package arsenic plants. The expectation is that we would
23 drill a hole, put a turbine pump in from surface, while
24 we mobilize those package plants. Get them up and then
25 treat water as fast as we can.

1 Some of those plants are a million cubic
2 metre, I think, a day plants. No, sorry. Do not hold
3 that number.

4 In a year or two (2), if you could get
5 access to those plants, I think you could probably
6 recover the mine back to its current mine level. But
7 those are just conceptual, at this point.

8 MR. DOUG RAMSEY: Doug Ramsey. Thank
9 you. I appreciate that it is conceptual, but it -- it's
10 -- I think it's a useful, sort of realistic range of --
11 of response, if -- if you'd be able to get on it
12 immediately and certainly, it makes it more than just a
13 bad day. It's a bad couple of years. Just to -- just to
14 -- just to put that bound -- boundary on that event, as
15 well, not to mention the cost.

16 MR. MARK CRONK: Mark Cronk. To add to
17 that, it's one (1) of the reasons that the Giant team has
18 the new water treatment plant and its well pumps at the
19 very front end of the schedule. As soon as those pumps
20 go in, then we suddenly have a lot more flexibility
21 against that potential -- potential risk.

22 MR. DOUG RAMSEY: Thank you. Doug
23 Ramsey. And I think just one (1) more question in
24 relation to -- and you've probably sensed this question
25 coming since Monday. And that is: How -- did you and,

1 if so, how did you consider the effects of climate change
2 in any of your climate, weather, water-related risk
3 assessment scenarios?

4

5 (BRIEF PAUSE)

6

7 MR. JOHN HULL: John Hull. Nathan
8 Schmidt was addressing that answer yesterday, and that he
9 used the extreme events, did consider there was an
10 increase, as predicted in the -- the DAR but relied on
11 using extreme events and didn't modify the -- those
12 numbers significantly.

13 THE FACILITATOR EHRLICH: Can I just ask
14 for a clarification again? Are we talking about in the
15 initial -- during the initial freeze, or are we talking
16 about over the steady-state longer period?

17 MR. JOHN HULL: John Hull. I'm assuming
18 that the question was over the long term and that the
19 question then was the climate changes over a -- the
20 predictions are for a hundred years and, therefore,
21 that's the period that we were -- we would be -- he would
22 be considering.

23 THE FACILITATOR EHRLICH: Doug Ramsey, do
24 you have a follow-up?

25 MR. DOUG RAMSEY: Okay, Doug Ramsey.

1 That clarifies the period over which climate change may
2 have been considered, but my understanding of your
3 response was that just the extreme event, whether it's
4 the 1 in 500 or .2 percent, however you wish to refer to
5 it, flood event was used, not modified for any -- not
6 with no specific modification for climate change.

7 Is that my understanding of how it was
8 done?

9

10 (BRIEF PAUSE)

11

12 MR. MICHAEL NAHIR: Okay, it's Mike
13 Nahir. The -- with respect to the failure modes analysis
14 in your question, we -- we -- our -- my thought is is
15 that it doesn't really move it from one (1) box to the
16 other in terms of the coarseness of this assessment. So
17 I don't -- I don't know if that addresses your answers --
18 or your question exactly.

19 MR. DOUG RAMSEY: Doug Ramsey. It may.
20 I gather that's -- that's not the product of any formal
21 analysis, but just gut feel shall we say?

22 MR. MICHAEL NAHIR: Yeah, we -- we -- the
23 experts feel that that was within the range of the -- the
24 probabilities and -- that we've identified, and the
25 likelihood as well. So we're -- we're saying that that -

1 - it fits within that -- wi -- within that range,
2 according to the experts.

3 THE FACILITATOR EHRLICH: Can I just
4 interject a small question here? I mean, I thought that
5 we heard earlier in a previous day that your climate
6 predictions didn't involve any change in extreme events
7 and that it was -- that extreme events weren't predicted
8 to change over the long-term.

9 But I thought what I just heard was it was
10 only extreme events that were incorporated into this
11 particular climate change consideration. Did I get
12 something wrong there?

13 MR. MICHAEL NAHIR: Mike Nahir. Could
14 you please repeat your question?

15 THE FACILITATOR EHRLICH: I recollect
16 Daryl Hockley talking about how in the climate change
17 modelling that was done, extreme events weren't -- in the
18 discussion with the Giant team with other experts,
19 extreme climate change was not expected to produce a
20 measurable change in the range of magnitude of extreme
21 events, or maybe it was frequency, I can't remember,
22 right, but that the climate change was not expected to
23 affect the, I guess, frequency and intensity of extreme
24 weather events. But then what I thought I just heard a
25 minute ago was it was only extreme events that were

1 considered in terms of a climate change in the subject
2 you're discussing now, which makes me think I've
3 misunderstood something.

4 Is that so?

5

6 (BRIEF PAUSE)

7

8 MR. MARK CRONK: Mark Cronk here. I
9 think we're going to do this in one (1), maybe two (2)
10 parts. I'm going to go first. And I am trying to
11 recollect, no doubt with some inaccuracies, that -- what
12 Nathan Schmidt said.

13 He updated some of the storm event
14 predictions from the time of the remediation plan in the
15 DAR. And as I recall, when he did that update based on
16 new information the actual extreme event went down by, I
17 think he said, somewhere around 10 percent including, or
18 not, I'm not certain of this, the climate change aspect,
19 but he left the more conservative number as he went
20 forward. That is my recollection of what Nathan Schmidt
21 said.

22 MR. MICHAEL NAHIR: Yeah. I hope -- does
23 that clear it up a little bit in -- in terms -- in terms
24 of the -- Mike Nahir.

25 MR. DOUG RAMSEY: Doug Ramsey. Yes. And

1 Mark's recollection of what Nathan indicated is correct
2 with respect to how the -- the one (1) in five hundred
3 (500) year flood event was estimated. And that the 10
4 percent reduction in the estimate that was determined
5 from considering a slightly longer period of record was
6 ignored and the higher number was used.

7 And arguably the -- the addition of 2
8 metres of anchor ice may or may not represent some kind
9 of -- of an addition with respect to climate change since
10 it's a relatively recent occurrence. So, yes, your
11 recollection matches mine.

12 THE FACILITATOR EHRLICH: Okay. I'm
13 going to ask Morag McPherson to provide a clarification
14 she's indicated she has.

15 MS. MORAG MCPHERSON: Morag McPherson
16 with Fisheries and Oceans. It's just in terms of this
17 line of questioning around the worst-case scenario.

18 Working on Giant for the last three (3)
19 years, realizing anything is possible, so this worst day
20 that you're talking about that everyone wants a
21 clarification on, I was just wondering when you -- when
22 we're talking about this worst day, what -- what is
23 likely to be the initiating event to cause that?

24 Based on the probabilities and -- we've
25 been living with this worst-case scenario for forty (40)

1 years, so we're moving on along the timeline. Based on
2 what you've outlined here I was just wondering, you know,
3 pretending it's Giant, anything can happen. What is the
4 likelihood of -- what would be the initiating event that
5 would cause this worst-case scenario? What -- right now,
6 based on the probabilities what is most likely to happen
7 today on site to cause this worst-case scenario to
8 unfold?

9 MR. MARK CRONK: Mark Cronk. Good
10 question. It's what keeps some of us up at night. The
11 current -- and I speak for the engineering team and I
12 believe my information is current.

13 The situation that keeps this team up at
14 night is the C1 pit. The diversion channel has some
15 uncertainties in it. It is a rock cut channel. We're
16 not absolutely certain that there is a continuous rock
17 wall on the pit side of that diversion channel. It does
18 seep in high water events every spring when the water is
19 on top of the ice.

20 We are undertaking additional
21 investigations to try to understand where that dip, if
22 you will, in the rock exists, and if there is something
23 we can do about it.

24 But that, in my opinion, and John and
25 Rudy, if you care to speak otherwise, I think is the

1 single largest risk to loss of containment to Baker Creek
2 at this point in time.

3 MR. RUDY SCHMIDTKE: Rudy Schmidtke. I
4 mean, just to add to that, Mark. I mean, I think the --
5 the one (1) word is, "underground instability."

6 I think if -- if we lost -- if we lost the
7 bottom of Baker Creek, that's a really bad day. We've
8 got lots of things to do, right, so it's -- probably --
9 most of it would be the underground instability allowing
10 that hydraulic connection into the underground.

11 MR. MARK CRONK: Mark Cronk. And taking
12 off of Rudy. The B1 sinkhole was one (1) of those, We
13 weren't expecting that, and it reminds us that there may
14 be more of those particular situations along the Baker
15 Creek corridor.

16 At this time, the engineering team does
17 not believe the B1 sinkhole will become a really large
18 issue that we can't manage, but it certainly suggests
19 there are things along the creek line that we simply
20 aren't aware of right now.

21 MS. MORAG MCPHERSON: Morag McPherson.
22 Thanks, I just wanted to clarify because I -- I said we
23 had some analysis of this but didn't go into the depth on
24 all of the probabilities, so I wasn't sure at this point
25 based on where we were in time what -- what would be that

1 initiating event.

2 And so my understanding from your response
3 is that it would be some sort of collapse of stability on
4 the surface or the underground on site is what we expect
5 could happen, most likely in the current state.

6 MR. MARK CRONK: Mark Cronk. That is
7 correct. Thank you, Morag.

8 THE FACILITATOR EHRLICH: Thank -- thanks
9 for that clarification. And I mean, I -- we've heard
10 over the last relatively short time there have been some
11 stuff that no one foresaw or predicted, which is part of
12 why you're hearing I -- I think some caution on behalf of
13 the -- the, you know, the parties involved here about
14 what kind of things are hard to predict over the much,
15 much, much longer term.

16 I -- I -- Lisa, I should point out that
17 although I've -- I've heard loud and clear that, you
18 know, it isn't that the Giant team has put the arsenic
19 there or anything like that, so that -- you know, look --
20 looking at the effects of the arsenic, you know, I --
21 trying to figure out where the effects of the project
22 stop and the effects of Giant Mine start is a tricky
23 business.

24 I think that with the -- the kind of thing
25 you're proposing, it is natural during environmental

1 impact assessment, people -- people to ask what will
2 happen if it doesn't work. And I -- I can't think that
3 that is too unexpected from -- from your perspective.
4 And -- and that includes questions on what happens if it
5 doesn't work a long way down the road, or a short way
6 down the road, and so I guess that's part of why we've
7 got the risk assessment day going.

8 And I -- I just -- I kind of felt I should
9 have clarified that a little bit more before, but we --
10 we weren't trying to take cheap shots. It's -- it's a
11 question that the parties are -- are interested in.

12 And now I'm going to turn over to -- to
13 Lukas Arenson.

14 MR. LUKAS ARENSON: Lukas Arenson, for --
15 for the record. Just a very quick follow-up question.
16 You said you're -- you considered during a brainstorming
17 event lots of events, but is it correct the sinkhole
18 didn't show up during that brainstorming?

19

20 (BRIEF PAUSE)

21

22 MS. LISA DYER: Lisa Dyer. Yes, we did
23 consider subsidence during the risk assessment scenarios.

24 MR. LUKAS ARENSON: I couldn't find it in
25 the report, but maybe I just scanned it sort of the wrong

1 way. I just couldn't find it.

2

3

(BRIEF PAUSE)

4

5 MR. LUKAS ARENSEN: Yeah, and while we're
6 at it, we were also thinking, when -- when you look
7 around beaver activity is actually pretty -- pretty good
8 here. And I know for -- for the highway, for example,
9 when -- when we talk about permafrost degradation,
10 beavers have a big impact.

11 Have you thought of changes in beaver dam,
12 and causing of beaver dams, for example? So do -- what's
13 doing the environment on your project? I'm just throwing
14 around stupid questions here, or stupid ideas.

15 Sorry, just to clarify, we're also talking
16 about upstream, not -- not on site. It's -- it's what's
17 happening upstream.

18 MS. LISA DYER: Lisa Dyer. We can talk
19 about beavers. And I am going to ask Adrian Paradis to
20 talk about our Giant Mine beavers.

21 MR. ADRIAN PARADIS: Adrian Paradis for
22 Giant Mine project team. Yeah, we -- I don't -- what do
23 you want to know about them? They're -- the ones along
24 C1? The ones up -- up above?

25 MR. LUKAS ARENSEN: No, I -- I mean --

1 and -- and honestly, it's -- I just could not find it in
2 your risk assessment. And, for me, that would be a
3 failure scenario. Yes, it might come up at a very low
4 consequence and at no risk, but that's the scenario that,
5 in my view, should be in a risk assessment or in a hazard
6 assessment, sorry, to clarify that.

7 THE FACILITATOR EHRLICH: Just to -- just
8 to clarify that based on the discussion that we had
9 before about this point, this is not strictly just
10 beavers on site causing damming where it's inconvenient.
11 We understand that you're going to have monitoring on
12 site as long as you have people on site.

13 But the discussion also described how
14 beavers are often a difficult to predict influence on the
15 hydrology that affects northern projects. And over the
16 long, long, long-term there are opportunities for changes
17 from that. This could include beaver dams upstream
18 causing ponding that, in the event of, you know, some
19 larger picture or problem, could disrupt.

20 And, I mean, I know that, you know, the
21 kinds of dams you've been looking at have to do with your
22 own -- your own seepage dams around the tailings, not
23 beaver dams upstream. And I -- this struck me as kind of
24 unusual when I first heard about it, but we've got two
25 (2) people very skilled in risk assessment who point out

1 they've seen many cases where this has proven to be a
2 real challenge for the design of long-term projects.

3 So I just -- you know, I don't want this
4 to sound as goofy as it might on first blush. I think
5 it's a serious question.

6 MS. LISA DYER: Lisa Dyer. No, the
7 reason we're laughing is because we have an ongoing care
8 and maintenance issue with the beavers. So, yes, this is
9 very real. What we did when we looked at the hundred and
10 two (102), I think we got the number, is that a lot of
11 things kind of fit into similar categories.

12 So we didn't say, you know, we've seen a
13 beaver with red fur and what if a beaver with brown fur
14 kind of comes along. We kind of group things into
15 categories, you know, like a blockage or, you know,
16 subsidence where there's some failure. So we had to, for
17 brevity, kind of group things together into similar
18 categories.

19 So I'm going to actually pass it over to
20 John Hull, but we did consider a lot of these things.
21 And, yes, the reason we were laughing is because we have
22 an ongoing problem with the beavers and the beaver
23 family.

24 MR. JOHN HULL: John Hull. In response
25 to Lukas' question, one (1) of the things that was

1 considered in the loss of Baker Creek was an underground
2 failure. We specifically did not identify the slot cut
3 at B1 south, but we considered that as part of that same
4 type of failure, which, as Lisa says, we identified a
5 group of issues, put them together and, in this case, we
6 called that the collapse of the underground, which would
7 -- we would have dropped B1 sinkhole into that grouping.

8 So, yes, it was considered. Short answer.

9 MR. LUKAS ARENSON: Thank you. Maybe I -
10 - I just didn't read it out, but now that clarifies it,
11 and I guess that's why we're here.

12 Just on a slightly different topic, but
13 climate -- following the climate change and going to a
14 territory that's more comfortable to me, which is the
15 frozen block. Again, for the likelihood for a failure of
16 the frozen block you're -- you've assigned a certain
17 likelihood, or I would call it a probability because
18 these events hopefully not repeat themselves.

19 And you're assigning a value now. And
20 you're saying, from what I understood, is that this is
21 basically a hundred year period that kind of repeats
22 itself. Is that -- am I correct understanding? Yeah, I
23 see a nod.

24 So considering climate change in -- in
25 your assessment for the worst case, you're assuming from

1 today, minus four point five (4.5), to worst case, plus
2 1.3 - .5 degrees Celsius annual air temperature. From a
3 thermal perspective, I would see the probability of the
4 frozen block to thaw and fail different if it's now
5 currently a minus four (4), compared to in a hundred year
6 where's it's plus one point three (1.3), compared to in
7 five hundred (500) years where it might be plus three
8 (3), compared to in a thousand years -- I think you get
9 the point.

10 So how valid, in other words, is your
11 approach of that hundred year repetition when you never
12 ever have steady state considering environmental factors?

13 MS. LISA DYER: Thank you, Lukas. I am
14 going to just call upon my team to chat about that
15 because it's a very valid question, and we'll get back to
16 you in a sec.

17 MR. JOHN HULL: While Lisa is looking at
18 that, John Hull, if we look at bank -- Baker Creek bank
19 instability, one (1) of the items of -- causes of an
20 issue is beaver dams.

21 MR. LUKAS ARENSEN: Thank you. Lukas
22 Arenson, for the record.

23

24

(BRIEF PAUSE)

25

1 MS. LISA DYER: Lisa Dyer, for the
2 record. It shows how we're all aging on this project,
3 because we're now having problems reading the small
4 print, and we have to find the larger print to be able to
5 respond to you. Give us a second, please.

6 THE FACILITATOR EHRLICH: For the record,
7 we at the Review Board had equal problems trying to
8 decipher that small print, and -- and certainly encourage
9 the Giant team to use more normal fonts whenever
10 possible, for your own benefit and for ours.

11

12 (BRIEF PAUSE)

13

14 THE FACILITATOR EHRLICH: So there's --
15 there's a point I'd just like to -- to clarify. You
16 know, there are a couple of different stages that the
17 project can be at, and -- and one (1) of them we've heard
18 is the initial freeze until it hits a steady state, and
19 then there's another stage where it's in that steady
20 state onward to -- what do you call it, the perpetuity or
21 the extreme long term.

22 And the response about beavers that I
23 thought I heard, we were -- we were talking about the
24 initial project stage, first twenty-five (25) or so
25 years, and the question that the Giant team was thinking

1 about now, I believe, is -- relates to this steady-state
2 period beyond the first twenty-five (25) years. Do I
3 have that correct?

4 And can I also ask other speakers, if
5 you're asking about a period and it -- it's specific to
6 one or the other of those, it would be quite helpful if
7 you can make that clear in the questions, 'cause anything
8 that makes this less complicated is our -- our friend.
9 Thanks.

10 So the question is were you asking
11 regarding the -- from steady state to the extreme long
12 term, or between where we are now and -- and reaching a
13 steady state?

14 MR. LUKAS ARENSEN: Lukas Arenson, for
15 the record. It's -- it's basically the long-term
16 assumption, so it's not right now, because with the
17 freeze-block ice -- I assume the freeze block is working,
18 and that's what you basically call the steady state. And
19 it's kind of the -- the forward going. It's -- it's kind
20 of -- the question relates to the -- how should I word
21 that? How confident are you with that long-term risk
22 assessment? That -- that's basically what -- what it
23 comes down to.

24 MR. MICHAEL NAHIR: Okay. Mike Nahir.
25 So for Alan's benefit, I'm talking about the long term.

1 If you look at the -- the working sheets in -- so it's
2 page B4, so Appendix B4, yeah, from IR-12, which is the
3 failure modes assessment analysis, IDFS-10, it's very --
4 in very small print. So I didn't expect -- I didn't
5 expect you to catch it.

6 But, anyway, in this is the -- the slow
7 warming trend is contemplated as a risk. And so it's FS-
8 10. I'll read to you the risk issue:

9 "Its warming from climate change
10 exceeds cooling capacity of existing
11 passive cooling infrastructure, due to
12 the global warming vastly greater than
13 maximum predictions. Reduced
14 efficiency of passive freezing system."

15 So anyway that -- first of all, that was
16 contemplated. It doesn't directly answer in terms of
17 risk assessment, other than through this process.

18 And the pl -- the mitigation plan, so
19 just, 'A', it shows up, and 'B', the risk mitigation plan
20 is:

21 "The freeze infrastructure will be
22 upgraded as necessary to maintain
23 effective cooling and re-established
24 ground and air temperature and mine water
25 monitoring would detect early signs of

1 change to the frozen block before actual
2 melting would start to occur. Remedial
3 action could be taken of one (1) or of all
4 the blocks before any melting. Thaw would
5 be very slow, taking decades, and would
6 not impact restoration of the frozen
7 block."

8 MR. LUKAS ARENSON: Lukas Arenson. I --
9 I -- I saw that. It's really -- my question involves
10 around the confident level of that five (5). Would you
11 in a thousand years still be here and give me a five (5)?

12 THE FACILITATOR EHRLICH: We also have a
13 complementary question. We --

14 MR. MICHAEL NAHIR: Yeah, since I won't
15 be around in a thousand years, I can say yeah, that's
16 perfect. It's -- it's a wonderful assessment.

17 What you -- you yourself mentioned and you
18 recognize that we're talking about a hundred -- hundred-
19 year basis. So it -- right -- plus the monitoring
20 systems. So it's part of an adaptive approach.

21 THE FACILITATOR EHRLICH: I -- I just --
22 You know, I -- I do think it kind of behooves us to plan
23 and make decisions on this project as if we would be here
24 for the period that we're talking about because Giant
25 team has already said that they expect someone to be here

1 for it.

2 And, you know, as a tiny aside,
3 sustainability assessment, at one (1) point in -- in
4 your IR responses, you said we -- we don't how
5 environmental impact assessment gives us an opportunity
6 to incorporate the good stuff that we're passing to
7 future generations -- the benefits of this project.

8 And I would suggest that sustainability
9 assessment gives you quite an opportunity for that if you
10 choose to pursue it, but it also includes, you know,
11 looking at what kind of -- of -- of costs are being
12 passed to future generations. But, I think there are
13 ways to capture the good stuff too, anyway.

14 Let me get back to Dr. -- oh, hold on, no.
15 I think Lisa wants to respond to -- to my point.

16 MS. LISA DYER: Hi, Alan. No, I -- I
17 actually am just kind of wondering where we're at.
18 Because I know that, to be honest, some of us -- these
19 are tough technical questions and some of us are getting
20 a little tired up here.

21 So I'm just wondering about how do we see
22 the rest of the, you know, really wanting to check in
23 where are we at with the process? Where are the
24 questions at? Do we see a lot more questions? Is this
25 an appropriate time to take a break if we are going on

1 longer? And I -- I'm really just concerned about, you
2 know, keeping -- giving people proper breaks and stuff
3 like that if we are going on longer tonight.

4 So, I would really like to check in at
5 this point and see where we're at, what we anticipate
6 that the needs are, and kind of discuss how we want to
7 move forward for the rest of the -- the rest of the
8 session.

9 THE FACILITATOR EHRLICH: Okay. I can --
10 I can get into that a bit right now.

11 My plan was to stick to the agenda for the
12 first part, which is, we had a break and our next pause
13 is supposed to happen at 5:00, which is in twenty-six
14 (26) minutes.

15 And I believe that we'll have to keep
16 going as we looked at, so that we don't overlap into
17 tomorrow. We'll take a twenty (20) minute break there,
18 because we've got sandwiches and sustenance in the corner
19 so that people can, you know, survive and keep swinging
20 into the night.

21 MS. LISA DYER: Do you have anything
22 that's gluten-free?

23 THE FACILITATOR EHRLICH: No, but with a
24 twenty (20) minute break, it might be possible to find
25 something gluten-free. Well, I'm sure there's stuff up

1 there that's gluten-free, but I can't guarantee all the
2 bread is.

3 And -- and I -- I think we do have some
4 more risk assessment material. I -- I just don't want to
5 push too much of it into tomorrow, because of the concern
6 that the Yellowknives fairly identified early on. We
7 want to save tomorrow for tomorrow, because we have no
8 opportunity for catch-up after that.

9 I figured twenty (20) minutes is better
10 than the fifteen (15) we've been taking for our normal
11 breaks, just because it's -- it's been a pretty long
12 day, but I don't want to wait too long because we've got
13 to cover the ground we've got to cover before about 8:00.

14 I do not see us staying here beyond 8:00,
15 wherever we're at, but I hope to be pretty far along by
16 then. Is that clear enough?

17 MS. LISA DYER: Yeah. I just want to
18 make sure that that's okay. Five o'clock would be good
19 for us. Twenty (20) minute to half an hour break would
20 be nice, because -- and -- and I'm opening that up,
21 because the parties -- it's everyone who has to stay
22 longer, so I'm just talking about that. We just needed
23 to know where we were going so we could plan accordingly.

24 THE FACILITATOR EHRLICH: My concern at
25 making the break too long -- I figure with twenty (20)

1 minutes, you get sandwiches, and then we can keep on
2 talking while people eat, hopefully not into the
3 microphone. But I -- I don't want to take too much time
4 from the -- the rest of the opportunity we've got here.

5 Do people around the room strongly prefer
6 a half an hour at five o'clock, five o'clock till 5:30?
7 Or do people want to keep on going at 5:20? Who wants
8 5:30? Please put up your hands. Who wants to keep going
9 to 5:20? All right, 5:30 has it, but we're going to keep
10 on going until at least five o'clock before we take that
11 break, and that'll give people an opportunity to do what
12 they need to do.

13 Okay. Now I'm going back to Cesar Oboni
14 with something that's closely related to the previous
15 question.

16 MR. CESAR OBONI: Yeah. Cesar, for the
17 records. When we're looking at those figures, I had a
18 quick question concerning on how does the confident
19 estimate in the table affect the risks? Because I think
20 on the far right on those tables there are numbers that
21 is the confident estimate, and I was wondering. Thank
22 you.

23

24

(BRIEF PAUSE)

25

1 MR. MICHAEL NAHIR: Mike Nahir. We -- we
2 feel that the confidence level informs the risk
3 assessment by virtue of whether there would need to be
4 further under -- further knowledge needed under that, or
5 whether, you know, it would -- it'd be an area of
6 research or an area of inquiry that -- possibly. So we
7 thought it'd be useful to indicate not just the risk, but
8 whether we're -- how confident we were with it.

9 MR. CESAR OBONI: So if I under -- Cesar,
10 for the record. So if I understand correctly, are you
11 saying that you are investigating the risk with the index
12 number 4 or 5 or whichever is the lowest or high --
13 highest, depending on how you are looking at -- or the
14 one that is the least -- or the one that you're the least
15 confidence in it?

16

17 (BRIEF PAUSE)

18

19 MR. MICHAEL NAHIR: We have a risk
20 management process that we employ as well. And where we
21 have -- so our experience is is where we have low
22 confidence we are -- we usually indicate a conservative
23 assessment such that with further investigation or
24 further study or assessment we would then be in a
25 position to better understand that particular risk. And

1 either the risk maintains itself or -- in that current
2 category or it does get reduced as a result of further
3 study.

4 MR. CESAR OBONI: Cesar, for the records.
5 So if I understand correctly, the -- well, as risk
6 evolves with time, is that confidence level is, for a lot
7 of different risk, diminishing with time?

8 MR. MICHAEL NAHIR: It's Mike Nahir.
9 Yeah, so -- and part of our risk management system is to
10 continually work on the risk for which we need to have
11 better confidence. So if it's a high level of
12 confidence, we might be dealing with the issue. It might
13 already be done and not a concern.

14 If there is a high level of risk with some
15 low uncertainty, then we would pursue that until we were
16 in a position to manage that risk, meaning it either --
17 either the risk gets low -- presumably gets lowered over
18 -- through the -- through investigation or action.

19 MR. CESAR OBONI: Thank you. Cesar, for
20 the record. My question now is how -- could you explain
21 how the acceptability criteria for Giant Mine was
22 defined. So back to those -- to the ma -- matrix. How
23 did you define the colour -- the different colours?

24 MR. MICHAEL NAHIR: Mike Nahir. We -- we
25 didn't invent this approach. I'm sure you've seen it

1 before. And we used this schematic for identifying very
2 high to -- versus high versus moderate risk based on pre-
3 existing pa -- methodology.

4 The -- as somebody mentioned before,
5 populating that in -- in terms of interpretation of
6 what's high -- what's -- what's considered low, minor, et
7 cetera, certainly in the cost category, comes from INAC
8 directly, but the other ones, human health and
9 environment, are more based on other -- other work.

10 MR. CESAR OBONI: Cesar, for the records.
11 As Daryl rightfully said, risks are subjective and
12 everything is relative -- relative, sorry. However,
13 there are known so -- societal acceptability criteria.
14 Have you tried to plot the hazards that you identified on
15 those criteria?

16 MR. MICHAEL NAHIR: Mike Nahir. Can you
17 just be a little bit more clear? What -- what do you
18 mean by plugging? Just repeat that last part there.

19 MR. CESAR OBONI: So I believe on Tuesday
20 Daryl mentioned Canadian Dam Association, CDA, and
21 Canadian Dam Association has a -- has a graph which, on
22 one (1) axis, has consequences, both in casualties, and
23 another one with costs. And on the vertical axis there's
24 the probability, and they define different zones. And
25 have you tried to see what's your -- the Giant's Mine

1 risks are defined -- how they are defined in the
2 acceptability criteria of what would be the Canadian Dam
3 Association?

4 MR. MICHAEL NAHIR: Mike Nahir. Just --
5 just give me a few minutes with that, please.

6

7 (BRIEF PAUSE)

8

9 MR. MICHAEL NAHIR: Mike Nahir. The
10 short, succinct, beautiful answer is no. In this -- for
11 this risk assessment, the -- there's -- we -- we don't
12 identify, in particular, action levels on this. It's --
13 it's more to indicate that -- increasing levels of risk
14 as -- as you move into the deeper colours, but -- sorry,
15 but we didn't -- it -- it doesn't go into that detail.

16 MR. CESAR OBONI: Cesar, for the record.
17 So when, on the IR Attachment number 12, when you're
18 talking about acceptable, it's not in the soci --
19 societal definition of acceptable. And when you're
20 talking about criticality in -- basically, my question
21 is: How critical comes in effect regarding acceptability
22 and -- and, therefore, societal acceptability?

23 THE FACILITATOR EHRLICH: I see everyone
24 on the Giant team nodding that they understood that. I
25 understood much of it. Are you guys good to go on that

1 or do you need a rephrase?

2

3

(BRIEF PAUSE)

4

5 THE FACILITATOR EHRLICH: So just for --
6 just for clarity, a little discussion we had while you
7 guys were contemplating was -- this question sounds like
8 it applies to all stages of -- of the project from the
9 short term to the -- the perpetuity aspect. Is that --
10 is that correct, Dr. Oboni?

11 MR. CESAR OBONI: Yeah, well, as the
12 matrix are the same for the long term and the short term,
13 then yes, I -- you would agree with me. Okay, I see some
14 nodding.

15 MR. BRIAN GRIFFIN: It's Brian Griffin
16 for the record. I'm responding for the team, here.

17 Specifically you were asking the
18 acceptability of risk, how that was defined in here. The
19 colour grading system is meant -- within the system,
20 here, to differentiate the risk. And that's all it is
21 doing, is talking about where the actual results of the
22 assessment fit in that assessment.

23 And what we're looking at is no -- a low
24 risk to a high risk. It has not really defined the
25 acceptability at all. It's left that out. What it's

1 done is said, you know, the types of management actions
2 that people are looking at to reduce that risk.

3 Oh, sorry, there was a second question I
4 think, about societal risk and the Canadian Dam
5 Association? Oh that -- sorry -- that -- that got
6 answered? It was not that now.

7 THE FACILITATOR EHRLICH: Would you --
8 would you care to summarize that part of the question,
9 please, Dr. Oboni?

10

11 (BRIEF PAUSE)

12

13 MR. CESAR OBONI: Well, my question is --
14 or if I can rephrase my question, is when Daryl the other
15 day mentioned the Canadian Dam Association, I thought
16 that the risk would be put in perspective regarding to
17 the function -- the acceptability of the Canadian Dam
18 Association. And this is -- and now the colour that's
19 representing here and what you mentioned in the figure
20 FMECA, and you said, Oh, those are acceptable risks. So
21 those -- it's completely different. Am I understand
22 correctly?

23 So those are not -- they are not
24 acceptable in regards to the Canadian -- Canadian Dam
25 Association?

1 MR. BRIAN GRIFFIN: That is correct.
2 Brian Griffin.

3

4 (BRIEF PAUSE)

5

6 THE FACILITATOR EHRLICH: Sorry, I just
7 want to be sure I understand. I -- I'm trying to keep up
8 with the discussion here. So what I think I just heard
9 was that some of the stuff that appears as acceptable in
10 the failure modes effects criticality analysis would not
11 be acceptable by the standards of the Canadian Dam
12 Association.

13 Is that what you meant to say?

14 MR. BRIAN GRIFFIN: No, not at all.
15 Sorry

16

17 (BRIEF PAUSE)

18

19 MR. BRIAN GRIFFIN: Brian Griffin for the
20 record. We just had a bit of a team conference and
21 perhaps I wasn't very clear. Especially on referencing
22 to something else. When you use the word "acceptable,"
23 the colour coding here wasn't set up to be specifically
24 to acceptability.

25 MR. CESAR OBONI: Cesar. Was or wasn't?

1 I'm sorry, I couldn't hear.

2 MR. BRIAN GRIFFIN: Sorry, it was not.
3 That is just a grading system.

4 MR. CESAR OBONI: Cesar for the record.
5 So my next question is did you define an acceptability
6 criteria for Giant Mine?

7 THE FACILITATOR EHRLICH: My
8 understanding is that -- that is did you fine -- define
9 an acceptability criteria that is -- that is different
10 from the Canadian Dam Association or -- no, regardless.
11 The question is just: Did you define risk acc --
12 acceptability criteria?

13

14 (BRIEF PAUSE)

15

16 MS. LISA DYER: Lisa Dyer, for the
17 record. The purpose of this matrix and this approach is
18 to -- is to provide it in a form that people can see how
19 we've looked at the risks and -- and defined them. It's
20 not -- we were not trying to determine whether there is
21 acceptable or not, we were trying to present it in a form
22 where people can see the work that we've done. And it's
23 really up to the parties looking at this to determine
24 whether these are acceptable or not. That was not our --
25 that was not the purpose of this exercise.

1 MR. CESAR OBONI: Okay. Thank you, Lisa.
2 Cesar. So my next question -- and I'm going to read
3 these two (2) line. I'm sorry for my accent. But bear
4 with me.

5 MS. LISA DYER: I like your accent. It's
6 okay.

7 MR. CESAR OBONI: Thank you. I'm going
8 to read the paragraph 2.6.2.1. And it says:

9 "In some cases, our mitigation option
10 may prove to be uneconomic and senior
11 management may decide to accept the
12 risk but activity manage it."

13 So it's a two (2) part question. The
14 first part is: What does activity managing but not
15 mitigating exactly mean? And the second part is: So
16 senior management will decide what -- what is acceptable
17 to the public. How will -- how will the risk be
18 communicated to the public and what will the mechanism to
19 allow the public to know if their exposure level has been
20 raised and at what level. Thank you.

21 THE FACILITATOR EHRLICH: Before we get
22 an immediate answer from the Giant team because it
23 sounded like a tricky question to me, it is five o'clock,
24 and so I promised to break at five o'clock for a half an
25 hour. We're doing that.

1 When we get back at 5:30 we'll hear a
2 response. Thank you. I'll point out to everyone that
3 there is food over there at the table, and we're -- we're
4 gonna keep on going until we have to stop.

5

6 --- Upon recessing at 5:00 p.m.

7 --- Upon resuming at 5:39 p.m.

8

9 THE FACILITATOR EHRLICH: So, to the
10 Giant team, do you have a response to the question?

11 MR. BRIAN GRIFFIN: Yes. Brian Griffin,
12 for the record. We chatted over the break here to get
13 some clarification on the question, and we're talking
14 about page 11 of the -- sorry -- of the IR-12 response.

15 Under risk evaluation, the third
16 paragraph, there was some confusion in the way you can
17 read the last sentence:

18 "\"In some cases, all mitigation measures
19 may prove to be uneconomic, and senior
20 management may decide to accept the
21 risk but actively manage it.\""

22 There's some -- certainly some confusion
23 around that. Just to be clear, in the risk assessment
24 done for the project here, all risks of high priority
25 were mitigated and as shown in the results.

1 We've got an undertaking to just -- as
2 part of this edit on this is to take that sentence out.
3 It -- it doesn't add anything.

4 THE FACILITATOR EHRLICH: Sorry. I was
5 going to say, since -- it's Alan Ehrlich here. Since --
6 since you're putting forth some revisions to the document
7 anyway, if you add another one and that helps with the
8 clarity, then it's always appreciated.

9 Cesar Oboni...?

10 MR. CESAR OBONI: Thank you very much.
11 Cesar. I just have a -- a last question is: At any
12 point, will you develop acceptability criteria for the
13 mine?

14 MR. MICHAEL NAHIR: Mike -- Mike Nahir.
15 I -- I believe that touches on the environmental
16 management systems, and I think we're gonna cover that at
17 that point ultimately.

18 THE FACILITATOR EHRLICH: It's Alan
19 Ehrlich. We're happy to shelve that until tomorrow.
20 Doug Ramsey, you have a question for the Giant team?

21 MR. DOUG RAMSEY: Doug Ramsey. Just a
22 followup to my -- my worst day question again. Carrying
23 through the cascading effects, when I left the question
24 last, we were talking about the potential for failure of
25 -- of an arsenic chamber, but has the Giant team looked

1 at the level of failure in the underground structures in
2 relation to that specific scenario, and whether those
3 failures would in any way affect critical components of
4 the project on surface or elsewhere, and how long it
5 would take to rehab that damage, and whether it was
6 possible under that scenario for there to be sufficient
7 damage such that the frozen core concept could not be
8 taken forward as the project?

9 THE FACILITATOR EHRLICH: Doug, could I
10 just ask you to provide a timeframe for the question?
11 You remember I've -- I've asked everyone to specify if
12 your question applies to the -- the initial period of
13 freeze or the sort of longer term, stable site condition.

14 MR. DOUG RAMSEY: Doug Ramsey.
15 Certainly. This applies to the period prior to the
16 establishment of the frozen block.

17 THE FACILITATOR EHRLICH: Giant team...?

18 MR. JOHN HULL: One of the items that
19 Darren identified in his presentation on Monday was that
20 specific concern, that there could be a sill pillar or a
21 rib pillar that would fail. It would potentially impact
22 the lower portion of a -- an arsenic stope now and/or in
23 the frozen block scenario, in which case, if it was now,
24 the concern is you could lose a significant volume of
25 arsenic dust into the lower portion of the mine.

1 The intent with the design team is that,
2 knowing that that could happen, what measures would be
3 incorporated into the backfilling of the voids and
4 openings around and under the arsenic stope so that if
5 that were to occur deeper in the mine it wouldn't cause a
6 loss of support for the frozen blocks.

7 MR. DOUG RAMSEY: Doug Ramsey. Thank
8 you. Now you -- you've moved that into -- into the
9 somewhat future scenario where the frozen blocks are
10 being established, if not established.

11 My question was related more to the
12 current situation prior to the establishment of the
13 frozen blocks. And potentially, for example, if it
14 happened next spring before any of the planned
15 underground stabilization measures, I suppose you could
16 say, had been either initiated or completed.

17 MR. MICHAEL NAHIR: Mike Nahir. Yes, we
18 have identified that as a risk as it -- in our -- in our
19 failure modes assessment. And the -- and we will discuss
20 that in a broader sense, that -- that issue, Lisa will
21 talk to that in -- in a little while.

22 THE FACILITATOR EHRLICH: Are there any
23 other questions on risk assessment from the Review
24 Board's experts? Alternatives North, Environment Canada,
25 Yellowknives Dene First Nation, do any of you have

1 questions on the subject?

2 Kevin O'Reilly from Alternatives North.

3 MR. KEVIN O'REILLY: Thanks, Alan. Kevin
4 O'Reilly for Alternatives North.

5 So now that you've done this I have a --
6 so, what? As I under -- understand it, risk assessment
7 is really meant to be a planning tool. And I've actually
8 -- believe it or not, I actually prepared a risk
9 management plan for the folks that I worked for at one
10 (1) point that had those sort of colours in it too, so
11 it's kind of neat.

12 But -- but what do you do with this
13 information? Like, I think I heard in response to one
14 (1) of Cesar's questions that you will actually use this
15 information for those higher risk thingies that have a
16 low confidence level so that you might have to -- you
17 might want to go out and do some more research about that
18 to get a higher confidence level.

19 But -- so that's one (1) thing that I -- I
20 think I picked up on. But what else have you used this
21 for?

22 And I dare use the word "changes" because
23 everytime I use that people start to go a little bit
24 crazy about it. But how has it changed the way you --
25 you look at the project, the way you do things, your

1 design? And when I say "change," I mean change in plain
2 English language sense, not changing from frozen block to
3 ex situ treatment.

4 But what have -- what have you learned
5 from doing this? And if you can use two (2) or three (3)
6 examples I would find that really helpful. Thanks.

7 MS. LISA DYER: Lisa Dyer. Kevin, I've
8 told the crew that I'm going to answer this so that you
9 get it in -- in plain language versus the highly
10 technical probabilities and frequency language. And this
11 actually leads me into something that I asked Alan if I
12 could present later on today. So I'm going to wrap --
13 I'm going to take a couple of minutes and wrap things
14 together.

15 And what we do is, IR-12 that we presented
16 is kind of -- we package it in a form to respond to an IR
17 question, but this approach of risk -- doing a risk
18 analysis and risk matrix is part of the way we do
19 business. So every year we look at the risks at the
20 project and we go through this exercise every year, and
21 based upon that if there is an item that, say, is in the
22 red, that tells us we've got to take action on that. And
23 so it definitely has chaped -- has changed and shaped the
24 plan.

25 I can tell you from someone that has sat

1 in on these sessions -- I guess I've been with the
2 contaminate -- contaminated sites program for almost a
3 decade now. I hate to admit that, but -- so I've been
4 through these on a yearly basis, and what I -- I see is
5 this allows the engineers and scientists to modify plans,
6 look at contingencies, and all the rest.

7 And you've asked for examples, and so I'd
8 like to give you some real-life examples, as we have
9 recently redone kind of looking at the risks of Baker
10 Creek and some of the buildings on-site. And so what has
11 happened is, there are risks. Things are -- have
12 deteriorated in some instances, and those risks are no
13 longer acceptable to us.

14 And so there are some items on-site, and
15 this is -- that we need to take some action on, and some
16 examples of that is -- for example, you've seen the work.
17 You actually asked what was happening around on the
18 highway with all the trucks moving in and out around C1.

19 We looked at the risks of Baker Creek, we
20 look at it every year. We said, That area is no longer
21 acceptable. We need to build up that area to give us
22 more confidence that -- that we've taken action to ensure
23 that next spring we don't see another situation that we
24 saw this year. So that's a real-life example that you're
25 seeing now.

1 We've talked about, today, the underground
2 stability issue, and that's -- our understanding has
3 improved from having a team of experts look at that. And
4 there are some areas now that we're concerned about, and
5 we need to have more information on it. And so, as part
6 of that -- and that's the area around B1 pits
7 specifically, partly because of the subsidence, and also
8 because we know we have underground workings and chambers
9 there.

10 So we need to have a better understanding
11 of that and -- and we cannot truly implement mitigation
12 measures till we have a true understanding of what the
13 risks are, and so we have plans underway to do some
14 drilling in that area so that we have a better
15 understanding.

16 Another really good example of what we
17 have to do is there is the roaster building, and everyone
18 knows that that is the most contaminated building on-
19 site. There are flues, and we're no longer -- the flues
20 were never meant to be -- contain solids and stay there
21 forever. We're no longer comfortable with the structural
22 support of those flues.

23 There's one (1) in specific that we do no
24 longer feel is safe. It contains approximately seven (7)
25 tonnes of arsenic. We are going to go in and take that

1 down this -- before December, the reason being is that
2 risk is no longer acceptable, and we have to make sure
3 that's safe.

4 We're trying to respect the regulatory and
5 assessment process, so we have had some discussions with
6 the Land and Water Board and the Mackenzie Valley
7 Environmental Impact Review Board but, that being said,
8 this is no longer a risk that's acceptable, and so we're
9 going to take action. We're going to take that down and
10 secure it until we come up with the final plans for
11 disposal of that.

12 Another structure on-site that is no
13 longer safe, which you can all see from the high -- from
14 the highway is the conveyor. And that conveyor
15 structurally is no longer -- the structural supports are
16 no longer sound. Workers go underneath that every day,
17 and we can no longer accept that risk of that coming down
18 on a worker on-site, so we are going to take down that
19 structure for safety reasons.

20 Another example of a site -- an issue on-
21 site that's no longer acceptable to us is the doghouse on
22 C shaft. When we were doing the FOS, the freeze
23 optimization study, we actually had a piece of that sheet
24 metal fly off while people were working there. In the
25 past, a piece of sheet metal actually made it out onto

1 the highway, and right now we've been doing kind of --
2 kind of measures to protect, but we have a chain around
3 there. We know that that's no longer acceptable. It's
4 just deteriorated too far. We're not using it any more,
5 so we are going to take down that cladding that poses a
6 risk.

7 So there are real-life issues on-site that
8 we're dealing with, and we are looking at these, and
9 we've known these were a risk for a long time, but doing
10 our risk assessment and this process again this year has
11 allowed us to say, Okay, these are no longer acceptable,
12 and so we're going to take action.

13 That being said, it also allows us to look
14 at things like Baker Creek, the icing issue that happened
15 this year. And we've now incorporated that more into our
16 design and planning.

17 So from someone that's not a specialist in
18 risk assessments I've been able to see how this really is
19 a useful tool in improving our mitigation measures and
20 helping us set priorities to what needs to happen.

21 THE FACILITATOR EHRLICH: Alternatives
22 North has a follow-up...?

23 MR. KEVIN O'REILLY: Thanks, Alan.
24 Thanks for that, Lisa, that was very helpful.

25 May -- may want to take this one away.

1 But, I guess, the -- you've obviously heard a lot of
2 questions here today about how this was done. You're --
3 the failure modes analysis risk assessment. A lot of
4 questions about methodology, a lot of questions about how
5 you classify things and timeframes and so on.

6 If you had to do this again, would you do
7 it any differently? Because you're going to have to do
8 it again. So what -- what less -- sorry, what lessons
9 learned have you had from today in terms of all of the
10 questions that have been raised here?

11 And if you want to go away and think about
12 it, that's fine. I have my own ideas, but I guess I'm
13 interested in hearing what lessons learned you would take
14 away from this. Thanks.

15 MS. LISA DYER: Thank you, Kevin. I
16 actually am going to ask my team to talk a little bit
17 about the lessons learned. But now that I've talked
18 about, kind of, what the current site stability issues
19 are on-site, I just want to finish with some of the other
20 activities that need to happen while these guys think a
21 little bit.

22 Because I've started down some of the
23 actions that we need to take and I was giving you
24 examples. But I would like to give you the full picture
25 of what we're currently doing on-site and where we see,

1 kind of, the needs for the next six (6) months to a year.

2 THE FACILITATOR EHRLICH: Lisa, that
3 would be -- that would be quite helpful. We'd appreciate
4 it if you could -- if you could keep on going through
5 that --

6 MS. LISA DYER: Yeah.

7 THE FACILITATOR EHRLICH: -- material.
8 We're not --

9 MS. LISA DYER: And then I'll just --

10 THE FACILITATOR EHRLICH: -- we're not
11 going to lose site of the Alternatives North question.

12 MS. LISA DYER: No, no, no. I just
13 figure I --

14 THE FACILITATOR EHRLICH: But you're --
15 you're on a roll.

16 MS. LISA DYER: -- could fill in while
17 these guys think about that a little bit more.

18 So as people are aware there's a freeze
19 optimization study. We're going to continue that study
20 because we're gathering really valuable information on
21 how things are performing. And it's allowing us to
22 optimize those plans, so that's continuing.

23 An important other aspect that everyone is
24 aware of is that we have a crew of people on site doing
25 care and maintenance work. Normally, you know, they're

1 keeping the pumps going, they're keeping systems
2 operating on-site which is really essential, one (1) of
3 them being water treatment. Recently we have done some
4 more assessment work on-site, and being an old site there
5 are some things that are no longer acceptable and posing
6 some risks on-site.

7 And I'd just like to identify some of
8 them. One of them is is our effluent treatment plant.
9 There are six (6) tanks. There's a couple of those tanks
10 that actually are rusting through. And the only thing
11 keeping the water in is actually the scale on the inside
12 of the tank, so we did an assessment. So we're going to
13 need to put some liners or replace those tanks in the
14 next year so that we can continue maintaining the quality
15 of water that we have been discharging to Baker Creek.

16 Another thing is the electrical upgrades.
17 Other people will be able to give you more details on
18 this. But we had an electrical engineer out on-site and
19 basically our substations and some of the electrical
20 equipment is no longer -- it doesn't meet safety
21 standards, some of it isn't properly grounded.

22 These are real risks that we're going to
23 have to put some capital into upgrading these systems and
24 -- and this is to ensure that we can deliver a continued
25 operation of the site and also to maintain health and

1 safety for workers on the site.

2 As well, we're upgrading some of the
3 pumping systems because managing the water on-site is of
4 up more -- utmost importance to us, so we will continue
5 to upgrade pumps and systems as need be.

6 B2 Dam, if everyone is aware, it basically
7 separates Baker Creek from an open pit and that was done
8 under an emergency march. And the reason being because
9 there was a leak in the existing dam after some drilling
10 was done.

11 And so the original design was for -- it
12 was not -- the original di -- design called for another
13 lift, but because we were working under winter conditions
14 and our emergency situations it was no longer complete --
15 it was not competed. So the plan is to put on that lift
16 to make sure the dam meets the original design
17 specifications. So that would be a plan for this year.

18 I talked about the secure -- securing the
19 cladding on the doghouse. Jo-Jo Lake tailings -- I think
20 everyone is very much aware that we had an issue with
21 icing and erosion of tailings this year. That work is
22 currently going on, so if you drive down the Ingraham
23 Trail you will see equipment out there, and that's
24 basically mitigating that issue, putting a cap on those
25 tailings so we don't see erosion next freshet.

1 I mentioned the C shaft, I mentioned the
2 mill conveyor. The flues is a really important one to
3 us. That's actually one (1) of the ones that we've had a
4 lot of discussion on of what we need to do there, so
5 that's where we're going to stabilize that flue, take it
6 down so it -- there's not a release of arsenic trioxide.

7 And then there's been some work around --
8 I mentioned the C1, but really we did assessment again on
9 Baker Creek, and there was a couple of areas there where
10 we were not confident. Those areas were specifically
11 around the C1 and the B1, and so we -- in the last few
12 weeks, you will have seen people in -- kind of adding
13 lifts to that -- those areas to ensure that Baker Creek
14 next spring doesn't reach the underground.

15 The one (1) other thing that I was going
16 to mention was, we talked about the need to have a better
17 understanding of stability underground, and we also would
18 like to investigate the contingency of the north
19 diversion a little bit further, and so we're at the
20 initial stages of that.

21 We need to do some more assessment and
22 then, eventually, we will need to move towards a drilling
23 program to actually determine -- to -- to come up with a
24 conceptual or preliminary design that would be comparable
25 to the one we have, so that we -- we have some more

1 information. We acknowledge that there's probably some
2 additional information that -- Fisheries information that
3 we would need to gather as well, but that's going to
4 occur in the next year.

5 So all of these items are to make sure --
6 to deal with the high-risk items we currently see on-site
7 and to make sure that we can have a successful
8 environmental assessment as well as go into the
9 regulatory phase. But there is some actions that need to
10 happen right now.

11 As I mentioned, we are working with the
12 Mackenzie Valley Land and Water Board, through the
13 decision of Section 98. We -- we acknowledge the need
14 for a land-use permit, and we are seeking measures to get
15 one (1) of those.

16 THE FACILITATOR EHRLICH: Lisa, on behalf
17 of the Review Board, I'd like to thank you very much for
18 -- I -- I know what may appear to be a quick and simple
19 recap for you, but I -- I -- you know, you're covering a
20 lot of material in a -- a nice, accurate way, as well as
21 getting on the record via the transcript and directly to
22 the parties and us. This is quite helpful.

23 And, of course, although the Review Board
24 has a mandate to look at the project that's proposed,
25 obviously, anything that is an immediate hazard to people

1 in the environment, there are various reasons and
2 mechanisms for you to deal with. And -- and we see this
3 as part of the very responsible management of -- of this
4 site by the -- the Giant team. And it's -- it's
5 reassuring to know that, despite, you know, the demands
6 of an environmental assessment and everything else,
7 you're -- you're clearly right on top of what's -- what's
8 going on there now, so thank you for that.

9 Kevin, do you have a follow-up?

10 MR. KEVIN O'REILLY: Thanks, and I
11 appreciate what Lisa had to say. Sorry, Kevin O'Reilly.
12 And I don't think I -- I don't think most people would
13 have any objections to what -- the emergency measures
14 that -- that Lisa outlined, but I guess I want to hear
15 what they -- their team has to say about lessons learned
16 from what happened today and how they might do things
17 differently with a risk assessment next time. And then I
18 might have a follow-up, depending on how they answer.

19 THE FACILITATOR EHRLICH: And it does
20 appear that the Giant team's prepared to respond.

21 MR. MICHAEL NAHIR: Mike Nahir. I'm --
22 I'm going to expect the follow-up. Be prepared. Okay.
23 Well, we just -- we just rattled off some things that we
24 collectively picked up today and -- and, you know, I hope
25 I capture the team's thinking in this. Anybody can pipe

1 up if they want, if I didn't quite get it right.

2 I think one (1) of the key things that we
3 want to mention is -- is that the -- I think the document
4 -- considering that we put it together in about six (6)
5 weeks and with three (3) workshops, and et cetera, et
6 cetera. It was -- it was quite a big effort and it -- it
7 was a big...

8 Nonetheless, I think that clarifying the
9 wording I think would have resolved probably quite a few
10 of the questions and the issues. Whether it be about the
11 hundred year long term design life aspect, or the aspects
12 related to standards used in the risk assessment, et
13 cetera. So, anyway, I think that's -- that's a takeaway.
14

15 I think the other thing is -- is to think
16 about and to sort of figure a little bit better how to
17 use the risk assessment process -- or the -- use the
18 failure modes analysis in our engagement discussions that
19 -- that need to -- need to incur -- need to occur with --
20 with stakeholders. And I think that we -- we've heard
21 today that, that's an important issue. So I think we --
22 we're -- there's a -- there's a take away there.

23 I think one (1) thing we probably would --
24 would -- would be interesting, or would benefit this, is
25 relation -- in relation with Cesar mentioned, and -- and

1 try to correlate a little bit some of the risk
2 definitions with some of the existing standards that --
3 that exist -- or, sorry, existing standards that are used
4 by other jurisdictions, for example, the Canadian Dam
5 Association.

6 We -- our risk -- this process was built a
7 little bit from our risk management process, so it's a
8 process we already use that's been in existence for a
9 while --- about 2003. That document was put together
10 with experts, but nonetheless it would be interesting to
11 see how that correlates to some of the standards that --
12 that exist on that.

13 In -- interestingly, I think that -- well,
14 some of this comes from, for example, Andy Robertson's
15 (phonetic) work that -- that's been done. I think he was
16 sort of, one (1) of the -- the original writers. So it -
17 - it is generally used in the industry, but it would
18 still be, nonetheless, interesting to see how it
19 correlates to other standards.

20 I think it would -- we would have
21 benefited from -- and everybody would have benefited,
22 again -- more explicit language with respe -- and -- and
23 understanding with the respect to global warming, in
24 terms of how we -- we intend to understand that in terms
25 of long-term risks. So I think there's a -- there's a --

1 there's some -- there's some work on that that would be -
2 - probably be beneficial.

3 In -- in -- now in, sort of, in general, I
4 -- I think -- I think our team would agree that this
5 process and, you know, as I say, we do use this pro -- we
6 have a risk management process in terms of understanding
7 current risk, but we did this with respect to design both
8 short term and long term. We feel that it had a positive
9 influence on design.

10 And it would be and -- and I think it will
11 also benefit the environmental monitoring and the -- the
12 environmental management system. I think that there's a
13 feed into that in terms of needing to make sure that our
14 management systems are -- are -- are addressing the risks
15 that -- that we've identified in part, and -- and so. As
16 we -- as -- as I've said, I think, in my intro remarks,
17 this is an ongoing process and this -- you know, we're
18 going to learn as we go and, you know, want to be open
19 about that, so.

20 Anyway, that -- that was our list. Did --
21 did I -- did I miss anything? Okay. Joanna...?

22 MS. JOANNA ANKERSMIT: Thanks. Joanna
23 Ankersmit. So I think that's a -- a good list to begin
24 with for -- for what we've -- we've heard this afternoon
25 and -- and early this evening. And I think it was a very

1 valuable exchange between the technical team.

2 But more than that, I think it's just
3 reinforced what we've been saying. People's perspective
4 -- risk is a tricky subject. And -- and it -- it all
5 depends, kind of what you're going to use it for, what
6 the context is. Sometimes you have to do it quickly to
7 make -- to inform a decision. Sometimes you have longer
8 to do it to inform a more strategic perspective.

9 And so, recognizing that there's the
10 technical risk assessment that -- that you gentlemen have
11 discussed here this afternoon, and lady -- I think only
12 one (1) lady engaged in the discussion. Maybe more I --
13 I can't remember.

14 But recogni -- recognizing that, Kevin,
15 where you started was people's values, and what I
16 consider a risk is different than what you consider a
17 risk. The only way that we can integrate that into the
18 project's thinking is to be talking to people about what
19 those perceptions of risk are.

20 There's no -- I -- this -- this tool is
21 for one (1) thing. I think what you're getting at, or at
22 least how I'm hearing it, is the desire by both
23 Alternatives North, YKDFN, our colleagues in other
24 departments, other people have to contribute to this
25 thinking from time to time. And we respect that and we

1 think that it is a valuable suggestion.

2 It's not a -- it's not a new idea, but
3 it's -- it's a valuable one and it's one (1) that we're
4 going to spend some time talking about tomorrow with
5 folks to make sure that we collectively find the best use
6 of people's inputs into various parts of the processes
7 that will inform decision making going forward, not just
8 in EA, about this project now, ten (10) years from now,
9 and in the long term.

10 So I think that that's really all I have
11 to say from a non-technical risk perspective, and we
12 welcome those discussions tomorrow. I actually think
13 some of it is going to be talked about perhaps in the
14 morning by a smaller group of people.

15 MR. ADRIAN PARADIS: Yeah, I think we
16 were meeting tomorrow -- sorry. Adrian Paradis, INAC.
17 Tomorrow -- I think tomorrow morning we're going to get
18 together and have a quick discussion on some other
19 elements. And I think this is probably one (1) of the
20 quick ones that we can -- well, maybe not a quick one
21 (1), but at least an initial dialogue of how we can start
22 moving this forward.

23 I don't know if we would have anything
24 that we can come to an agreement on, but at least we can
25 discuss and report it back to the group tomorrow morning.

1 THE FACILITATOR EHRLICH: Go ahead,
2 Kevin.

3 MR. KEVIN O'REILLY: Thanks, Alan. Kevin
4 O'Reilly. Look, I'm getting really tired, but I wanted
5 to say to Michael, for a bunch of engineers, they -- they
6 did really learn -- or learn and they were listening very
7 carefully. So I -- I do sincerely want to thank them,
8 and -- and Joanna as well. I think that was very helpful
9 and that you folks really were learning -- or listening
10 and learning to what -- what you heard.

11 I just would maybe offer a couple of other
12 little thoughts here that -- and I think you have said --
13 alluded to this, but having some level of community and
14 other government department interactions would be really
15 helpful, particularly in defining acceptability. And so
16 I think that's the kind of -- and I know that Cesar was
17 getting at this maybe with some of his questioning, is
18 how do you -- how did you define acceptability or did you
19 try to do that and so on. And I think that's a real key
20 thing to look into the next time you do this, and maybe
21 it can flow over into the discussions that we have
22 tomorrow morning.

23 Lastly, in terms of what we call adaptive
24 management, this stuff is really critically important.
25 And if you can find a way to tell people what you've

1 learned by going through the process, and I -- I've heard
2 some of that today, and the sort of -- I'm sorry, I'm
3 going to use the word "changes" again, the kind of
4 changes that it's made in -- or improvements to what
5 you're going to do, that's very, very helpful to know as
6 well because I think it starts to build comfort and --
7 and confidence.

8 So thank you very much. And I do really
9 appreciate what you folks said and that you were clearly
10 listening. Thanks.

11 THE FACILITATOR EHRLICH: Although
12 Alternatives North sounds like it's making some wrap-up
13 comments, it doesn't mean we're quite ready to wrap up
14 yet. Saying it doesn't quite make it so. Look, I've
15 committed to the Yellowknives that, you know, we're going
16 to have a chance to run through everything we need to run
17 through. And if that calls for going later today, we
18 will.

19 One (1) of the points that -- you know,
20 that we've heard recently and in other parts is that the
21 project -- the understanding of the project doesn't start
22 and finish with environmental impact assessment. You
23 know, it's going to keep on going on throughout the --
24 not only throughout the regulatory process, but also as
25 the project's implemented, and then with adaptive

1 management.

2 Mike Nahir just used the phrase something
3 like, you know, we're -- we plan to be constantly
4 learning as we go as well. And I also notice that the
5 Giant team has, I would say, very openly committed to a
6 ten (10) year review of emerging technologies as they're
7 relevant to arsenic management.

8 I -- I would like the Giant team to think
9 about something overnight, maybe come back sometime
10 tomorrow with this. But, you know, a lot of the risk
11 assessment has -- has discussed the hundred year period.
12 And I -- I think it's worth thinking about what kind of
13 opportunities there are to, after the first hundred
14 years, to try to learn from what's happened with the
15 project and to consider the emerging technologies that
16 are identified.

17 I'm not looking for any kind of a response
18 now, but I'm just saying, something to sleep on, think
19 about, because it -- it fits a lot of the theme and
20 matches some of the -- the time periods that we've heard
21 about from -- from Giant and from -- from the Giant team
22 and from the -- the communities.

23 So I -- I'd appreciate it if you could,
24 kind of, sleep on it and -- and think if there's some
25 mechanisms you might be comfortable with for about a

1 century down the road that -- that would do what -- what
2 I just described. But I -- I don't require an answer now
3 at all on that. Unless you're especially keen, in which
4 case I won't stop you.

5 MS. JOANNA ANKERSMIT: I -- I will think
6 about it. I've been thinking about it. And -- and I
7 obviously recognize, like everybody else in this room,
8 that we've got a situation that lasts a very long time.

9 We also have a solution for now to
10 stabilize this site, make it safe, protect human health
11 and safety. That's what's driving us. It's why we all
12 come to work every day. We think it's really important
13 for -- that people understand that -- over the next
14 hundred years what we're planning on doing. We're
15 planning on it working.

16 And that's very important. The government
17 is going to invest an unprecedented amount of money in
18 the Giant mine site. And I understand that we have
19 trouble talking about whether something is interim or
20 long-term or short-term. Probably because, kind of like
21 risk, our interpretation of -- of what those periods of
22 time can all be slightly different when they're not
23 defined with bookends.

24 Appreciating that, I'm very confident
25 that, given the great work that we're going to do here,

1 and the systems that we're going to have in place, and
2 the engagement that we're going to have with the
3 community, the Giant mine is not just the government's
4 problem. It's also not just the government's future.
5 And so, we really are in this together. And so, very
6 confident that the government of Canada, after making
7 this kind of investment, will want to protect that
8 investment in ten (10) years, in twenty-five (25) years,
9 and in a hundred years.

10 So, if in a hundred years, there's a
11 better solution, and it's cost effective, it makes sense
12 to do it, they will be reviewing that. I'm quite
13 confident that the people that come after me will be at
14 least as smart as me and I pray they're smarter. And I -
15 - I have a lot of faith that we're not just learning
16 lessons on this project, but generations after us will
17 learn lessons from us.

18 There's some things that we have to have a
19 bit of faith in. One (1) thing I am very comfortable
20 doing is saying that the government will continue to look
21 at this project and in a hundred years, guaranteed, the
22 government will be looking at is this still doing what we
23 wanted it to do. Is it protecting human health and
24 safety? Is it protecting the environment, and is it the
25 right thing to have in place? I'm quite comfortable

1 committing to that.

2 THE FACILITATOR EHRLICH: Thank you.
3 That's -- that's very helpful. Are you also comfortable
4 committing to involving the other stakeholders who will
5 be around? I mean we, you know, expect the Yellowknives
6 Dene First Nation and others to be on the scene then as
7 well, and you know, we know that other people have the
8 kind of interest you just described.

9 MS. JOANNA ANKERSMIT: This -- like I
10 said, this is not just the government's project. This is
11 a project of the people. It is being funded by the
12 people of this country, and people will be included in
13 future reviews or -- or ways of looking at this project.
14 I'm fairly certain that folks after me will be open to
15 that.

16 I certainly will encourage a program and -
17 - and a project that sets itself up that not only the
18 government feels ownership in it but the people that live
19 here also feel ownership in it.

20 THE FACILITATOR EHRLICH: Thanks. That -
21 - I -- I think that's a comforting thing for everyone in -
22 the room to hear and -- and I -- I hope that this
23 provides some kind of reassurance that whatever decisions
24 come out of this process now, you know, are not
25 necessarily going to bind every future generation that

1 may ever exist, but could be looked at just as you've
2 openly -- you know, you expressed your openness to look
3 at technologies as they emerge.

4 And it's reassuring to hear that there
5 will be an opportunity a hundred years down the road to
6 look at how it's gone and to see what kind of emerging
7 technologies you've found and to make sure you're still
8 on track. So correct me if I'm wrong, but I -- I thank
9 you for that.

10 Now, I got a few more specific risk
11 assessment questions, but I'm looking around the room and
12 everyone's burnt out, and I think I'm the only one here
13 who's still got them. Does anyone else have other
14 questions having to do with risk assessment? Please put
15 your hands up if you do.

16 Okay, I'm going to limit mine quite a bit.
17 And -- do you have a question?

18 Oh, there's a question that was deferred
19 earlier. And, Doug Ramsey, can you give a quick recap of
20 that question?

21 MR. DOUG RAMSEY: Doug Ramsey. I hope
22 so. My question goes back to the scenario surrounding
23 that very bad day, which is prior to the establishment of
24 the frozen core related to the overflow of Baker Creek
25 during the extreme event, flooding of the underground,

1 and potential for failures of underground structures,
2 whether there's a potential for the failures to extend to
3 surface and potentially affect any critical project
4 components, and whether there's the potential as a result
5 of that event for the underground to be sufficiently
6 damaged that it's not possible to carry the project
7 forward.

8 Oh, and there was -- there was an inter --
9 intermediate question in there, which was how long it
10 would take to rehab the underground after that event in
11 order to prepare it to continue with the frozen block
12 concept.

13 THE FACILITATOR EHRLICH: Does the Giant
14 team have a response to that?

15 MR. MARK CRONK: Mark Cronk. Thank you,
16 Doug. There was two (2) or three (3) questions in there,
17 and I was trying to collect my thoughts while he asked
18 them. So the first one was if we flood to surface would
19 there be an underground stability that might poison the
20 plan, as it were. And then you had some supplemental
21 questions, please...?

22 MR. DOUG RAMSEY: Sorry. Doug Ramsey.
23 If there would be -- if there was the potential for
24 sufficient underground damage such that the frozen block
25 concept for the remediation could not be carried forward,

1 whether there was the potential for these underground
2 failures to extend to surface and potentially affect
3 critical project elements and, also, how long it would
4 take to rehab the underground after the water was pumped
5 out, as we discussed earlier this afternoon, to prepare
6 it to take the project forward.

7 All of these are basically surrounding
8 putting boundaries on the consequences associated with
9 this particular hazard.

10

11 (BRIEF PAUSE)

12

13 MR. MARK CRONK: Mark Cronk. Doug, can I
14 have your help for a minute? This is a flooding
15 scenario, loss of containment of a chamber. Would it
16 follow on to surface and produce a risk to critical
17 infrastructure and would it result in the inability to
18 execute the plan? Have I summarized your multi-part
19 question?

20 MR. DOUG RAMSEY: Doug Ramsey. Yes.

21 MR. MARK CRONK: Mark Cronk. The
22 flooding scenario that you are speaking to, we've spoken
23 about and we've considered the risk associated with it.

24 The recent efforts by the engineering team
25 have heightened a level of concern. It speaks to the

1 risk assessments that we do and our level of comfort with
2 our knowledge and the re-evaluation driving us to
3 respond. That is, in fact, occurring now.

4 The stability plan that Lisa has spoken
5 about has a significant underground stability response
6 associated with stabilizing the chambers. Not directly
7 to a flooding risk, but as a general stability question.

8 If you flooded the mine, and for the sake
9 of this discussion we assume that one (1) of the chambers
10 does fail, we have a water treatment plant problem at
11 that point in time, other -- it's just a cost operational
12 water treatment plant.

13 The other fourteen (14) chambers, it's my
14 expectation, we would continue to execute the frozen
15 block then we would move on and we would have a
16 operational cost impact from that failure with the high
17 arsenic load in the mine water.

18 We do not expect any of the underground
19 failure mechanisms to propagate to surface and pose a
20 risk to critical infrastructure. John and Rudy have -- I
21 believe that's our current engineering assessment of the
22 underground and surface interface.

23 And so I think that scenario -- lose a
24 chamber, it would produce water treatment cost issues and
25 operational issues. It would not sterilize the plan. We

1 would continue to execute the frozen block on the
2 remaining chambers and carry on. I hope that answers
3 your question.

4 MR. DOUG RAMSEY: Doug Ramsey. Almost.
5 And how long would it take to rehab the underground after
6 that event?

7

8 (BRIEF PAUSE)

9

10 MR. MARK CRONK: Mark Cronk. You're
11 painting me into a little bit of a hypothetical corner.
12 It would -- certainly appreciate on which of the chambers
13 actually let go on us. The more complex ones, the stopes
14 that have underground workings would seriously compromise
15 our ability to respond quickly. Quick chat here among
16 the table, we figure a couple of years we could probably
17 get it back online for ourselves.

18 MR. DOUG RAMSEY: Doug Ramsey. So in
19 summary, with a couple of years to pump down the
20 underground after it failed, plus a couple of years to
21 rehab, with some overlap but probably not a lot. You're
22 looking at something in the order of probably three (3)
23 to four (4) years before you'd be ready to go forward.

24 Is that correct?

25 MR. MARK CRONK: Mark Cronk. Three (3)

1 or four (4) years would be some of the activities, but
2 the rest of the chambers -- the drilling from surface can
3 continue on, all those kinds of aspects there. It
4 wouldn't stop the entire projet. There would be a series
5 of work that has to go on. But yeah, three (3) to four
6 (4) years, call it five (5), somewhere in that order of
7 magnitude is a -- just one (1) second.

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(BRIEF PAUSE)

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THE FACILITATOR EHRLICH: Does the Giant
team -- is there a response in the works here or are we -
- are -- is everyone good? Okay. There was some nodding
that the microphones didn't quite pick up. I've got what
I think is a fairly straightforward question regarding
risk assessment and Cesar Oboni's got another one. I
assure you compared to the last one it's dead simple.

Thinking about earthquakes and the
response to Review Board IR number 13, one (1) of the
points that was made here is that based on a data set
from 1985 to present, this is part of Response 1, page 2,
of Review Board IR 13, the point is made here that the
return period on a -- let's see here, for seismic hazard
for long return periods. There's some measurement on
ground acceleration for a five thousand (5,000) year

1 return period that's unlikely to cause any significant
2 damage.

3 But then it goes, just on the last page of
4 that response:

5 "Earthquakes of magnitude 8 or larger
6 are generally associated with inter-
7 plate subduction. The events are
8 likely to be generated at the plate
9 boundaries."

10 My question is just, you know, considering
11 the very, very long term that we're talking about, are
12 they possible in that plate? If so, what's the return
13 period within a plate? Again, you know, if the project
14 was five thousand (5,000) years I might -- it might be
15 covered, but it's just the way this is laid out sort of
16 makes these questions a little bit more relevant than
17 they might be otherwise.

18 MR. MARK CRONK: Mark Cronk. Just one
19 (1) moment. We'll get your answer.

20

21 (BRIEF PAUSE)

22

23 THE FACILITATOR EHRLICH: Can the Giant
24 team -- is the Giant team ready to reply?

25 MR. JOHN HULL: John Hull. Replying to

1 the question of magnitude of earthquake occurring in the
2 middle of a stable geological plate similar to the
3 Precambrian Shield area, the answer is, no.

4 THE FACILITATOR EHRLICH: Never forever,
5 right?

6 MR. JOHN HULL: John Hull. As best as
7 the geologists will predict. And I can guarantee if I
8 put two (2) in a room they would be slightly different,
9 but as best as they would identify, it's not going to
10 happen.

11 THE FACILITATOR EHRLICH: Okay. Thanks.
12 That helps clear it up. A question about the Response 1
13 to that same IR is based on information from NRCan. As I
14 said, it only goes from 1985 to present, which in
15 geological terms is not vast, it's tiny.

16 So I've got one (1) -- one (1) of my last
17 questions on this is: Do you think that it's reasonable
18 to extrapolate these kinds of periods from a data set
19 from 1985 to present for geological phenomena?

20

21 (BRIEF PAUSE)

22

23 MR. JOHN HULL: John Hull. NRCan has
24 also produced some data that identifies that in the
25 Yellowknife region from 1627 to the present there have

1 been no earthquakes of any significance other than what
2 is pro -- shown on the plot in this region. So that is a
3 reasonable period and most of the present predictions are
4 based on the same data set for projects in Canada.

5 THE FACILITATOR EHRLICH: I do have a
6 question about that data set. It pointed out that:

7 "The risk of occurrence for earthquakes
8 of magnitude 5 to 5.9, is low to
9 moderate. The risk of occurrence for
10 earthquakes 6 to 6.9, very low to low,
11 and risk of occurrence of earthquakes 7
12 to 7.9 [this is all within a 300-
13 kilometre radius from Yellowknife] very
14 low."

15 I'm wondering if -- how -- how long a
16 period this risk of occurrences were referring to.
17 There's no -- it's -- it's not particularly calibrated in
18 here. How -- over what period are they rating this risk
19 of occurrence. Is it from now until forever, or is there
20 a -- a finite period that -- that -- that risk refers to?
21 Just because risk is likelihood versus -- times -- times
22 hazard, and likelihood's related in part to period.

23 I was wondering if you could help with
24 that?

25

1 (BRIEF PAUSE)

2

3 THE FACILITATOR EHRLICH: Go ahead
4 please.

5 MR. JOHN HULL: John Hull. The
6 evaluations are based on information and guidelines from
7 NRCan and identified in the national building code for
8 Canada. The code is -- and the evaluations are updated
9 on a regular basis by NRCan based on collecting new data
10 as earthquakes and events happen.

11 My expectation is with the risk
12 assessments that would be done on a regular basis for the
13 Giant mine, this would also be updated and incorporated
14 into the thinking as the project moves forward into post-
15 closure.

16 THE FACILITATOR EHRLICH: I -- I
17 understand that for the -- the short term, the -- the
18 building code of Canada is quite appropriate to make sure
19 that the buildings stay up for the periods that buildings
20 are normally intended to stay up for.

21 But I just -- I -- I don't really know
22 what would happen if a big earthquake hit the frozen
23 blocks or anything like that. And -- and so I'm getting
24 at that more than at the buildings.

25 And -- and bearing in mind, this -- the

1 building code is -- is -- is generally not intended to
2 try and keep buildings up for perpetuity. There, you
3 know, there haven't been any buildings that have lasted
4 all that long. Thanks.

5 I guess my -- my question is not strictly
6 about the frozen blocks, it's about the blocks and the
7 system that supports them over the long term.

8

9 (BRIEF PAUSE)

10

11 MS. JOANNA ANKERSMIT: Joanna Ankersmit,
12 for the record. I believe Kevin O'Reilly and I are in
13 perfect, 100 percent, agreement right now. We both said
14 let's wrap it up, we're ready to go. Kevin, would you
15 concur with that? I'd -- I'd like you to speak into the
16 microphone.

17 MR. KEVIN O'REILLY: Kevin O'Reilly. Two
18 (2) thumbs up.

19 THE FACILITATOR EHRLICH: It -- it sounds
20 like the Giant team has an answer, and then I'll respond
21 to Joanna.

22

23 (BRIEF PAUSE)

24

25 MR. JOHN HULL: John Hull. The frozen

1 blocks and any structures on the -- the site would be
2 monitored and maintained after any earthquake. The
3 anticipation is if there was, highly unlikely, in the
4 Yellowknife area an earthquake the -- the structures
5 would be monitored, repaired.

6 There's an expectation that if there was
7 any damage to any of the thermosyphons, because we would
8 be in that -- that period, they would be replaced or
9 upgraded. The key would be the monitoring program, which
10 would be part of the ongoing maintenance -- and care and
11 maintenance.

12 THE FACILITATOR EHRLICH: Okay. And
13 although we do have another question from Cesar Oboni in
14 light of the resounding agreement between the Giant team
15 and Alternatives North, I'm going -- so obviously neither
16 of those two (2) parties have much more they want to
17 happen tonight.

18 It was in response to the Yellowknives'
19 request to avoid anything that could be subject creep to
20 make sure that we only have, on the Friday, stuff to deal
21 with that's for the Friday. I'm going to give the
22 Yellowknives an opportunity to ask any remaining
23 questions.

24 I've noticed that Todd Slack is not here
25 but Lukas Novy still is. Do you have any further

1 questions?

2 MR. LUKAS NOVY: I don't, but we'll make
3 sure to, just for the record, try to track down Todd and
4 see if he has got anything else to say.

5

6 (BRIEF PAUSE)

7

8 MR. LUKAS NOVY: In all seriousness, I
9 think he did have a couple of questions, so we'll just --
10 this is Lukas again, we'll -- we will wait on him just to
11 play it safe.

12 THE FACILITATOR EHRLICH: Okay, look, as
13 long as we're here, I don't want this to be dead airtime,
14 so I am going to ask Cesar Oboni to put out his question.
15 And if Todd -- if it's a long answer and Todd comes back
16 partway, then maybe we could deal with it in the morning.
17 But I'm just trying to avoid shifting too much forward.

18 Okay. Cesar Oboni, please take it away.

19 MR. CESAR OBONI: So, briefly. No, I'm --
20 -- just in the follow-up of Doug's questions. And my
21 question is how -- the design for Baker's Creek to resist
22 rainfall of 1 of 500, if I believe correctly, and
23 something and something, the probability to -- is still 5
24 percent for the next twenty-five (25) years, if I -- if
25 my calculation are correct, which I think they are.

1 That's still a staggering number. And how
2 comfortable -- or, yeah.

3

4 (BRIEF PAUSE)

5

6 MS. LISA DYER: Lisa Dyer, for the
7 record. Cesar, we -- we acknowledge there is a risk, and
8 we're not comfortable with that risk. And that's why we
9 have started looking at the north diversion as a
10 contingency because we are not comfortable.

11 MR. CESAR OBONI: Thank you, Lisa.
12 Cesar, for the record.

13 THE FACILITATOR EHRLICH: And again, now,
14 as throughout the previous four (4) days, we really
15 appreciate the -- you know, the openness and candour with
16 which the Giant team is tackling these things. I don't
17 think anyone's got a sense that there's a whole lot of
18 sugar coating going on. It's been quite a productive
19 session.

20 But before we wrap up for the night, Todd,
21 while you were gone I was saying here, We've gone extra
22 to make sure that tomorrow we just focus on what we're
23 supposed to focus on tomorrow and not a lot of baggage
24 from previous days. And I thought it would be remiss to
25 wrap it up without asking if the Yellowknives have any

1 other questions with regard to risk assessment that they
2 want to put out before the end of the day.

3 MR. TODD SLACK: Todd Slack, YKDFN. No,
4 I don't have any extra questions. And I appreciate
5 everyone staying tonight so that we can get our gear --
6 or our questions in tomorrow.

7 THE FACILITATOR EHRLICH: All right. In
8 that case, I'm going to start my concluding remarks. I'm
9 not going through the undertakings. If you look at
10 tscript.com you'll be able to see that stuff for
11 yourselves, and I don't think anyone wants to do that
12 right now, I mean try and rehash all the undertakings of
13 the day.

14 There haven't been a huge number. What
15 number are we on? There have only been three (3) that
16 came up today, which is -- is pretty impressive and
17 speaks to the preparedness of -- of the team. I -- I
18 know that because the parties have been plenty
19 inquisitive.

20 Sorry. Do you have a question, Mark
21 Cronk...?

22 MR. MARK CRONK: Mark Cronk. Alan, if I
23 may, can I conclude a small piece of work between Kevin
24 O'Reilly and myself? Kevin, we never did get back to
25 that report. Do you want to conclude that today?

1 MR. KEVIN O'REILLY: Thanks. Kevin
2 O'Reilly, Alternatives North. I might even be able to do
3 it with my eyes closed.

4 There was an undertaking given by the
5 Giant remediation team to provide a copy of this roaster
6 complex assessment -- preliminary assessment. And Mark
7 was good enough to -- well he is good enough to give it -
8 - he showed me the -- the report, and I understand that
9 there's some confidential information in the report that
10 -- it's not in the public interest to release it. But --
11 but from a financial perspective, in terms of contracting
12 and so on. So I understand that they do not wish to file
13 it and I support that.

14 There is, however, two (2) tables in there
15 with quantities of contaminated material that I think
16 would be helpful to get on to the public registry. Mark
17 has undertaken to see if the same tables are in a
18 previously-filed document. If they are, I'm fine with
19 that. If they're not, he can extract those and -- and
20 file them with the Review Board as a response. So I'm
21 happy to have them go away and take a closer look at that
22 and maybe respond with -- to -- in the next -- he says
23 tomorrow. That's great. Thank you.

24 THE FACILITATOR EHRLICH: In that case,
25 because it's something that you can respond on tomorrow,

1 we'll have to call it a task, not an undertaking. Thank
2 you for that brief recap.

3 Joanna Ankersmit has a point.

4 MS. JOANNA ANKERSMIT: Just to be clear
5 then, the previous undertaking needs to be adjusted in
6 the record. It's no longer there and it will be taken
7 care of so we need to make sure we go back and remove
8 that undertaking as it was described earlier.

9 THE FACILITATOR EHRLICH: And I -- I
10 don't think we have any way to show an undertaking
11 removed in our undertaking list, but I think that the
12 discussion that we've got here and the transcript of it,
13 sh -- should make it clear enough.

14 It looks like Adrian Paradis has another
15 point. You guys have a lot of energy for a group that
16 has been going since -- I know you guys have been going
17 since about 8:00, so.

18 MR. ADRIAN PARADIS: Adrian Paradis, for
19 the record. What I propose to do is on Monday we as a
20 team will get together. We will go through the list of
21 undertakings. We will write them out.

22 We will then circulate them to the
23 parties, asking for clarifications, feedback, to make
24 sure we have them correct and then have them finalized
25 and put back -- give them back to the Review Board by

1 Friday of next week. If that is okay with the parties?

2 THE FACILITATOR EHRLICH: Kevin O'Reilly
3 says yep. The Review -- the -- the Yellowknives Dene, I
4 don't see any opposition. I just see a tired, tired
5 look.

6 And if everyone's agreeable with it then,
7 yes, that would be -- that would be just fine, with the
8 caveat that I said before, which is, where the
9 undertaking in itself is not entirely clear, I would like
10 people to go back to the transcript, get the context of
11 the conversation, so that what we get is a meaningful use
12 of effort, instead of, you know, misdirected stuff.
13 Okay.

14 MR. ADRIAN PARADIS: That is the exact
15 point of doing that exercise on Monday through next week.

16 THE FACILITATOR EHRLICH: Okay. With
17 that, I'm going to shut it down. We're going to start
18 again at nine o'clock in the morning. Please take your
19 books off your table, put them on your chairs.

20 Thank you very much for -- for sticking
21 with the -- the endurance session of the week. We'll see
22 you tomorrow.

23

24 --- Upon adjourning at 6:48 p.m.

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1 Certified Correct,

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6 Wendy Warnock, Ms.

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