



“When You Talk - We Listen!”



WEK'EEZHII LAND AND WATER BOARD

DIAVIK DIAMOND MINE PKMW WATER LICENCE AMENDMENT

W2015L2-0001

PUBLIC HEARING

Board Members:

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Board Member	Mason Mantla
Board Member	Mike Nitsiza
Board Member	Rachel Crapeau
Board Member	Alex Nitsiza

HELD AT:

Yellowknife, NT

December 17, 2020

Day 2 of 3

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1		LIST OF UNDERTAKINGS	
2		(Proposed in December 16, 2020 Transcript)	
3	NO.	DESCRIPTION	PAGE NO.
4	1	DDMI will respond to the questions sent	
5		by the Board via email to Sean Sinclair	
6		on December the 16th, 2020. DDMI is	
7		asked to identify and explain any	
8		challenges and/or advantages to	
9		including the standard conditions	
10		identified in the email in licence	
11		W2015L2-0001.	202
12	2	DDMI will propose new language for the	
13		scope of licence W2015L2-0001. This	
14		language will align with the Board's	
15		standard conditions	203
16	3	DDMI will list any concerns that it	
17		would have if the Board were to remove	
18		section E from water licence 2015L2-	
19		0001, and provide a rationale for those	
20		concerns.	203
21			
22			
23			
24			
25			

1		LIST OF UNDERTAKINGS (cont'd)	
2		(Proposed in December 16, 2020 Transcript)	
3	NO.	DESCRIPTION	PAGE NO.
4	4	DDMI will clarify whether chloride and sulphate measurements should be retained when sampling seepage from the drainage control and collection system as currently written in licence W2015L2-0001, under part H, condition 22(e)(ii).	
5			
6			
7			
8			
9			
10			
11		If not, please provide the rationale for why DDMI believes that chloride and sulphate are not required to be sampled in this seepage	205
12			
13			
14			
15	5	DDMI will indicate whether its responses to Board staff questions 24, 27, 28, 32, 34, 37, 39, 40, 41, and 45, raised during the August 2018 public review, in relation to proposed changes to the draft water licence for W2015L2-0001 still reflect the DDMI position on appropriate licence contents.	206
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1 --- Upon commencing at 9:04 a.m.

2

3 THE CHAIRPERSON: Good morning,
4 everyone. (INDISCERNIBLE) yesterday. Ryan will be
5 chairing the meeting. Go ahead.

6 MR. RYAN FEQUET: Morning, Joe, and
7 thank you. Thank you, everybody. So just a couple of
8 quick items before we get started. And like Joe said,
9 we're continuing off from yesterday with the agenda
10 where we left off, which is we go into questions for
11 the Independent Review Panel.

12 Just before that, I just wanted to
13 remind everyone that the -- the Facebook live feed
14 that is happening through Cabin Radio and being also
15 live streamed on the Wek'eezhii Land and Water Board's
16 website does not form part of the record for this
17 proceeding, i.e., it will not form a part of the
18 record or be presented to the Board for consideration.

19 Just the questions that come through
20 the various filters we have in place that are being
21 read into the record are part of the proceeding. So I
22 just wanted to reassure people that, whatever happens
23 in internet land stays in internet land, and no one in
24 this room is responsible for that, and we understand
25 that. So it's just those questions that are being

1 read into the record that are forming part of this
2 proceeding.

3 We also just wanted to let everyone
4 know that Dr. Scott Wells does have to leave at ten
5 o'clock. He has a prior professional commitment that
6 we were aware of, so we will try to make the most of
7 our morning and get right into it.

8 Again, the -- the Panel's presentation
9 that everyone saw yesterday which is up on the screen
10 was focussed on the report that came in on October
11 15th. And we understand and wanted to reiterate that
12 this came in before everything else that came in,
13 before everyone else's submissions.

14 So the Panel is absolutely ready and
15 eager to -- to take any questions about their
16 recommendations and how they feel those have been
17 addressed or -- or not, and -- and how they think
18 about those.

19 So we'll start with the -- the line of
20 questioning, and DDMI is up first.

21

22 QUESTION PERIOD:

23 MR. GORD MACDONALD (by phone):

24 Thanks, Ryan, and good morning. First, I'd like to
25 thank and reiterate our -- our appreciation for the

1 Panel's review. We share the view that was
2 articulated by Dr. Wells yesterday about the value of
3 peer review, and we also wanted to pass on
4 appreciation from the Golder modellers. They found
5 the -- the webinars and the process quite helpful in -
6 - in finalizing the models.

7 I appreciate your participation in
8 these hearings may be confusing, and my questions are
9 intended to -- to clarify information for the record.
10 So I apologize in advance if I'm repeating things that
11 were previously discussed and resolved during the
12 webinar.

13 In the preamble to your presentations
14 yes -- presentation yesterday, you described the
15 presentation as a summary of the -- of the final
16 report. But we found it kind of unusual that the
17 presentation didn't include the conclusions from
18 Section 6 of your report.

19 I'm not sure if there was a reason for
20 that, but can you -- could you summarize the
21 conclusions of the report for us? It was kind of left
22 -- kind of left hanging at the end there.

23 DR. SCOTT TINIS (by phone): Yes.
24 Scott Tinis, IRP. I suppose -- do you want us to go
25 line by line through the recommendations?

1 MR. GORD MACDONALD (by phone): Gord
2 MacDonald, with Diavik.

3 So it was more the -- the four (4)
4 points of the summary. I -- I didn't -- it wasn't the
5 detail of the recommendations, it was the -- the
6 opinion, the final opinion, in Section 6.

7 DR. SCOTT TINIS (by phone): Scott
8 Tinis, IRP. Just a moment while I pull that up.

9 MR. RYAN FEQUET: And to the members
10 of the Independent Review Panel, we do have the
11 presentation up, as -- as you guys can see. So please
12 just let us know if you'd like us to navigate to a
13 particular slide.

14

15 (BRIEF PAUSE)

16

17 DR. SCOTT TINIS (by phone): Scott
18 Tinis, IRP. Yeah, I'm not sure that we have that on
19 any particular slide. I believe what Gord is
20 referring to is the summary section of our report.
21 Sorry, I'm just scanning through the report as I go.

22

23 (BRIEF PAUSE)

24

25 DR. SCOTT TINIS (by phone): Oh, there

1 we go. Okay. Pardon me. It's Section 6. I don't
2 know if that has been submitted as an item for people
3 to access, but it's Section 6 in the -- in the final
4 report. And the easiest thing for me to do I think is
5 just to go through them one at a time and -- and read
6 them aloud.

7 So this was the Panel's opinion, and
8 there are four (4) -- four (4) points. The first:

9 "The modelling effort put forward to
10 examine the long-term water quality
11 in pits A418 under the processed
12 kimberlite to mine working scenario
13 is appropriate, and that the
14 modelling software are of sufficient
15 quality."

16 I believe that was a point in Diavik's
17 presentation yesterday. Number 2:

18 "The base case results of the
19 updated model, which includes
20 previously expressed recommendations
21 from the Panel, may be interpreted
22 to show that the water quality in
23 the upper 40 metres of pit 4 -- A418
24 are not expected to exceed the A --
25 AEMP Water Quality Guidelines."

1 Point number 3:

2 "Sufficient sensitivity runs have
3 been completed to support the
4 conclusion that water quality in the
5 upper 40 metres of A418 is unlikely
6 to be exceeded under anticipated
7 variability enforcing possible
8 outside conditions."

9 And finally, number 4:

10 "Certain model parameters require
11 ongoing testing and monitoring to
12 sufficiently understand their
13 uncertainty which may not be
14 currently taken into account in
15 either the base case model or its
16 sensitivities. And these will be
17 the..."

18

19 (TECHNICAL DIFFICULTIES)

20

21 MR. RYAN FEQUET: Gord, can you hear
22 Scott? Scott, I think we just lost you there about
23 thirty (30) seconds ago. We can see you but we can't
24 hear you.

25

1 (BRIEF PAUSE)

2

3 DR. SCOTT TINIS (by phone):

4 "... effort put forward to examine
5 the long-term water quality in pits
6 A418 under the processed kimberlite
7 to mine working scenario is
8 appropriate and that the modelling
9 software are of sufficient quality."

10 I believe that was a point in Diavik's
11 presentation yesterday. Number 2:

12 "The base case (AUDIO CUTS OUT)
13 which includes previously expressed
14 (AUDIO CUTS OUT) to show that the
15 water quality in the (AUDIO CUTS
16 OUT) are not expected to exceed
17 (AUDIO CUTS OUT)."

18 Point number (AUDIO CUTS OUT):

19 "(AUDIO CUTS OUT) to support the
20 conclusion (AUDIO CUTS OUT) 418 is
21 unlikely to be (AUDIO CUTS OUT)
22 possible outside conditions."

23 And finally, number 4:

24 " (AUDIO CUTS OUT) case model or its
25 sensitivities."

1

2

(TECHNICAL DIFFICULTIES)

3

4

MR. RYAN FEQUET: Scott, maybe we'll
5 ask you to turn your video off. We're just losing you
6 on the audio here.

7

DR. SCOTT TINIS (by phone): Okay.

8

MR. RYAN FEQUET: Gord, you can still
9 hear us okay?

10

MR. GORD MACDONALD (by phone): Yeah.
11 Gord MacDonald, with Diavik. I think while Scott
12 sorts out his -- what may be going on, I think we can
13 -- I can proceed with that, Ryan, if that's all right.

14

MR. RYAN FEQUET: Sure. Thanks, Gord.
15 Keep going.

16

MR. GORD MACDONALD (by phone): Yeah.
17 I think there may have been a bit of confusion
18 yesterday, and it relates to a sentence in the middle
19 of Recommendation 2 which is where you -- where the
20 Panel says that:

21

"which includes previously expressed
22 recommendations from the Panel."

23

And that's in -- in bullet number 2 of
24 the Summary that Dr. Tinis just -- just read in. What
25 we wanted to -- what we -- maybe if whoever's got the

1 presentation, if they could go back to the slides,
2 Diavik slides, we summarize some of these what were
3 recommendations that came through during the -- during
4 the webinars.

5 MR. RYAN FEQUET: Which slide would
6 that be, Gord?

7 MR. GORD MACDONALD (by phone): Up a
8 bit more, more. It's the tables. More. Next two
9 (2). Go back a little. Yes, that -- that's -- right
10 there would be perfect. Thank you.

11 Panel, what -- what we -- what we
12 wanted to clarify, and it became a bit confusing from
13 your presentation, and I think it was mostly from Dr.
14 Wells' presentation, you repeated some of the -- some
15 of the items that we discussed during the webinar
16 which is -- which is obviously appropriate.

17 But what I -- what we didn't understand
18 or was -- wanted to make sure was clear was that those
19 items -- and they're not the first three (3) on this
20 table, but the remainder of this table and the
21 following table are the -- are some of the items that
22 the Panel and particularly I think Dr. Wells brought
23 up during the review that we did address or that we,
24 as in including Golder, did address.

25 And we just wanted to be clear that

1 this -- this phrase that you've got in Section 2 of --
2 which includes previously express -- expressed
3 recommendations from the Panel, means that these were
4 all addressed.

5 You know, you raised yesterday the
6 issue of the -- the concern you had about the portal -
7 - getting through the portal. I think all of these
8 were addressed during the -- during the webinar and
9 included in our final report.

10 If there was any comment, maybe Dr.
11 Wells?

12

13 (BRIEF PAUSE)

14

15 DR. SCOTT WELLS (by phone): Yeah,
16 this is Scott Wells. Just your question was did --
17 your response to our comments, was that did that
18 satisfy us completely. Is that your question, Gord?

19 MR. GORD MACDONALD (by phone): That -
20 - that all of our responses to those ongoing
21 recommendations that were during the webinar were
22 included -- were considered when you -- in your
23 preparation of your final report?

24 DR. SCOTT WELLS (by phone): Not all
25 the information. I had not received all the

1 information from Golder before we finished our final
2 report, so there was still some information that I had
3 not received.

4 In fact, you know, in the end, I didn't
5 have time to actually receive their updated model
6 files and view those, things like that.

7 So, basically, it was based on our
8 discussion in the webinars. And there was some
9 preliminary information, I think, provided. But I
10 think some final tests were done just within the last
11 few weeks.

12 MR. GORD MACDONALD (by phone): Okay.
13 That's --

14 DR. SCOTT WELLS (by phone):
15 (INDISCERNIBLE).

16 MR. GORD MACDONALD (by phone): Gord
17 MacDonald, with Diavik. Thanks, Dr. Wells. That's --
18 that's unfortunate. We did get the report to the
19 Panel prior to their final report, so it's a bit
20 disappointing that they didn't address that.

21 But the conclusions are what the
22 conclusions are. We did -- we think we did address
23 all of these items before the Board. Thanks.

24 I'd like to go to -- I realize that
25 we're -- the Panel's scope is not to respond to the

1 rec -- our -- is not to consider our responses to the
2 recommendations and now I'm referring to the twelve
3 (12) bulleted recommendations that are in the Panel
4 report.

5 But I'd like to just say that many of
6 the recommendations from the Panel report relate to
7 the consolidation modelling.

8 And, Dr. Azam, during the webinar, we
9 discussed that, in our view, if anything, the
10 modelling might be over predicting the consolidation
11 rate, meaning that we might over estimate the volume
12 of porewater that will be released and under estimate
13 the volume of consolidated solids.

14 Is that a reasonable summary of your
15 view of -- of the centrality, if you will, of the
16 modelling?

17 DR. SHAHID AZAM (by phone): Thank you
18 very much. Shahid Azam, from IRP.

19 In general, the long-term assessment of
20 the consolidation is okay. My primary focus, and I --
21 as I explained in my presentation, also, is the -- the
22 ability within the initial phase of deposition. And -
23 - and, therefore, that was probably the most important
24 for me.

25 So, long-term, the water quality may be

1 okay provided the decant water is the same as the
2 porewater.

3 So -- and we can go back to that
4 discussion which depends on a number of factors,
5 actually, of the geology of the ore body, the mineral
6 composition of the ore, the confidence in the
7 degrading process, and the process water that is used.

8 So, all of those combined will result
9 in the released porewater quality, basically. The
10 rate and amount may be okay in the long run.

11 MR. GORD MACDONALD (by phone): Gord
12 MacDonald, with Diavik. Thank you for clarifying
13 that, Dr. Azam. It's -- it's that initial decant
14 water and, therefore, the fill modelling that would be
15 sensitive to those results.

16 And maybe just a final question for --
17 I think it's Dr. Tinis who looked at the -- the fill
18 modelling.

19 While we -- we agree that the -- we
20 agree that there's two (2) factors in the fill
21 modelling that are sensitive, it's the chemistry and
22 the volume.

23 So, if -- to address Dr. Azam's
24 concerns, that controlling the volume -- controlling
25 the volume of that -- of that decant water can be an

1 effective mitigation. I guess that's a question to
2 the -- or I'm looking for the clarification from Dr.
3 Tinis that that's -- that it -- that it could -- it's
4 a combination of the volume and the chemistry that
5 influences those -- those results, the fill results.

6 DR. SCOTT TINIS (by phone): Yes,
7 Scott -- Scott Tinis, IRP. Just to -- first, a sound
8 check. Can you hear me okay?

9 MR. GORD MACDONALD (by phone): I can,
10 yeah.

11 DR. SCOTT TINIS (by phone): Okay,
12 great. I'll -- I'll go without video for now just in
13 case that was the issue.

14 Yes, absolutely. And I just need to
15 clarify, too, that the reason that volume was not
16 considered as part of the recommendation was simply
17 because that had never been raised as a -- as a
18 possibility of even removing and treating some of that
19 water.

20 So, to be clear, yes, the -- the
21 influence on the final water quality would be the
22 initial condition to the long-term model. It depends
23 on both the water quality, or the concentration, and
24 the volume of water, which multiplied together, it
25 forms the total loading.

1 MR. GORD MACDONALD (by phone): Thanks
2 very much, Dr. Tinis. Again, thanks for -- thanks to
3 the whole Panel for your time here and in the past.
4 And no further questions, Mr. Chairman.

5 MR. RYAN FEQUET: Thank you, Gord.
6 We'll move on to Environment and Climate Change
7 Canada. If you have any questions for the Independent
8 Review Panel at this time, please proceed.

9 MS. ANNA GRAHAM (by ZOOM): Anna
10 Graham.

11 MR. RYAN FEQUET: And, again, just let
12 us know if you need us to navigate to any particular
13 slide in -- in DDMI's or the Panel's presentation.

14 MS. ANNA GRAHAM (by ZOOM): This is
15 Anna Graham, Environment and Climate Change Canada.
16 Thank you, Mr. Chair. Meagan Tobin would like to pose
17 a question.

18 MS. MEAGAN TOBIN (by ZOOM): Hi. 19
Meagan Tobin, Environment and Climate Change Canada. 20
So, thank you, Panel, for being open to taking our 21
questions.

22 My question was in relation to the
23 response to IRP Recommendation 9. So, in your
24 recommendation, you had recommended that the anaerobic
25 porewater sampling program be completed prior to PK

1 deposition into A418.

2 And the response from Diavik is that
3 they will be completing this after deposition has
4 began and will be only updating the model during stage
5 2.

6 So, my question is: Based on your
7 review of the data associated with the fill model, do
8 you feel that this information, so the anaerobic
9 testing, is necessary prior to deposition to address
10 the uncertainty or is the proposal proposed by Diavik
11 to delay this appropriate? Thank you.

12 DR. SCOTT TINIS (by ZOOM): Yeah,
13 Scott Tinis, IRP. I guess there are a lot of moving
14 parts to that recommendation. And I would like to say
15 that the idea of sampling in situ after deposition is
16 -- is obviously a good one.

17 There are physical processes during
18 deposition which could affect the water quality of the
19 decant water, things that might not be anticipated by
20 simply doing a laboratory test on the -- on the ore
21 beforehand.

22 The -- what I envisioned with the
23 original recommendation was that there is an obvious
24 data gap in that there's a limited number of samples
25 upon which the water quality is based presently.

1 And I'm always of the opinion that --
2 that collecting data before you do something material
3 with -- with that data, in other words, you're going
4 to, you know, based on the water quality being good,
5 for example, you know, there's no problem going ahead
6 and -- and doing the deposition.

7 Generally, any monitoring program that
8 you do has got to be tied to an Adaptive Management
9 Plan. In other words, if you see something that's
10 trending the wrong way, what are you going to do?

11 And so, if you are measuring
12 beforehand, as was envisioned in the recommendation,
13 would that lead to different consequences down the
14 road? In other words, would you -- would you not
15 backfill?

16 So, it -- it's -- it's hard to separate
17 the two (2). I would -- I think -- I think both have
18 merit. Even if you are going to deposit no matter
19 what, knowing what you're dealing with ahead of time
20 will help with other mitigation procedures, such as,
21 how are we going -- what are we going to need to
22 treat, what is that water quality going to look like.

23 If we have to remove all of the water,
24 then what do you do with -- do you re-engineer the way
25 you form the freshwater cap? Do you bring the water

1 in differently.

2 Those are all questions that are sort
3 of hypothetical questions that if I were doing this
4 that I would be asking myself.

5 So, the short answer is I think there's
6 a lot of merit in what they're proposing, but it does
7 -- it's not what was originally envisioned in the
8 recommendation.

9 MR. MEAGAN TOBIN (by ZOOM): Thank
10 you. Meagan Tobin, Environment and Climate Change
11 Canada.

12 I do have one (1) follow-up then. So
13 without this information in advance of deposition, is
14 it still appropriate for the next model iteration to
15 be completed after all the PK has been deposited in
16 the pit, or is another check-in required?

17 MR. SCOTT TINIS (by ZOOM): Scott
18 Tinis, IRP. It's -- it's a -- a difficult question
19 again.

20 I would say that it would certainly be
21 beneficial to acquire more data, run the models and I
22 don't know -- and -- and I would leave it between
23 Diavik and the Board to decide whether this is a
24 licence condition or not.

25 But certainly you would want to run

1 some checks with the filling model to make sure that
2 the water quality that you are measuring prior to
3 deposition is going to not lead to unexpected water
4 quality in A418.

5 Again it's an internal check that were
6 I doing the -- the pit filling, I would want to do
7 that. But again, as being a necessary condition to
8 run the model with the new inputs prior to PK, really
9 I have to leave that as a question to be answered
10 between the Board and -- and Diavik.

11 MR. MEAGAN TOBIN (by ZOOM): Thank
12 you. Meagan Tobin, Environment and Climate Change
13 Canada. I have no further questions.

14 MR. RYAN FEQUET: Thank you, Meagan.
15 We'll look to the GNWT now. At this time if the GNWT
16 has any questions for the Independent Review Panel,
17 please proceed.

18 MR. RICK WALBOURNE (by ZOOM): Thanks 19
19 Ryan. Rick Walbourne, ENR. First of all, we would 20 like
20 to thank the Panel for all the work they've done.

21 ENR and our consultant, Dr. Barry
22 Zajdlik, had provided some questions to the Panel
23 previously, which some responses had been provided to
24 us.

25 The timing didn't allow for us to

1 include that in our intervention, but we do thank him
2 for the information. But I think Dr. Zajdlik has some
3 clarification questions and follow-up questions he'd
4 like to ask the Panel.

5 So I'll pass it over now to Dr.
6 Zajdlik.

7 DR. BARRY ZAJDLIK (by ZOOM): Thank 8
you. Can everybody hear me?

9 MR. RYAN FEQUET: Yes, we can, Barry.
10 Thanks.

11 DR. BARRY ZAJDLIK (by ZOOM): Thank 12
you, my first question is -- it's Barry Zajdlik 13
speaking on behalf of GNWT.

14 My first question is a bit of a
15 reaction to the dialogue that we had this morning and
16 it's -- it is: What can we know about decant water
17 composition at this time?

18 And maybe I'll flesh that out a bit,
19 because it's -- it's a tough question to answer. I'll
20 say that the modelling that's been conducted today was
21 using best guesses as the porewater composition.

22 You know, I have a lot of reservations
23 about the -- the input values that were used based on
24 the PK samples that were available at the time.

25 But we seem to be stepping past that

1 now, because we're looking at decant water.

2 There will be a correlation between the
3 porewater and the decant water, obviously because the
4 decant water is expressed. But the decant water also
5 contains site run-off and pit wall run-off, so it's
6 not exactly porewater either. And there would also be
7 some physical processes occurring as the water is
8 expressed.

9 So you know, if we're relying on
10 modelling that was based on what we believed about PK
11 porewater, how much reliance should we be placing on
12 it -- or around the modelling conclusions now that
13 we're really facing a decant water situation?

14 MR. SCOTT TINIS (by ZOOM): Yes,
15 Scott Tinis, IRP.

16 It was one (1) of the questions that
17 was posed to Diavik because, as you note, most of that
18 water in the initial fill is -- is decant water.

19 So the -- the question was posed: Does
20 the composition of that decant water or is it expected
21 to be the same as porewater or is assuming the
22 porewater water quality to be applied to all of it, is
23 that a conservative assumption?

24 And the response from Diavik was, yes,
25 that -- that is the case, that is it's a conservative

1 assumption.

2 As to the specifics of how that
3 conclusion is made and the data that it's based upon,
4 I can't speak directly. So that may be a question to
5 be posed to Diavik.

6 DR. BARRY ZAJDLIK (by ZOOM): All
7 right, we may follow up on that then with Diavik, I'm
8 not sure how we'll do that, in light of the
9 proceedings.

10 Jumping ahead to a different sort of
11 question. The word "conservatism" is bandied about a
12 lot and the way it's used by Diavik is that everything
13 -- the worst-case scenarios are used to model the
14 potential effects of filling the pit with PK.

15 But it's possible that the more
16 realistic scenario would lead to a weekly stable
17 chemocline that would weep through materials to the
18 surface.

19 How does the Panel feel about the use
20 of a 200 year accumulation of PK porewater to form the
21 initial conditions for the model?

22 MR. SCOTT TINIS (by ZOOM): Scott
23 Tinis, IRP. I think I'll refer to Dr. Wells to answer
24 that question.

25 MR. SCOTT WELLS (by ZOOM): Scott

1 Wells, IRP. The question was how do the initial
2 conditions effect the model results. Is that correct,
3 Barry?

4 Or are the initial conditions subject
5 to interpretation? Could you clarify that question?

6 DR. BARRY ZAJDLIK (by ZOOM): Yes.

7 Barry Zajdlik here, on behalf of GNWT.

8 The initial conditions do obviously
9 effect the modelling results. What I'm concerned
10 about is the accumulation of 200 years of porewater as
11 used in the modelling.

12 To my mind, that would buy us the
13 outcome towards a stable chemocline when in reality
14 there won't be 200 years of porewater in the initial
15 condition.

16 So I'm concerned that we're overstating
17 the efficacy of meromixis as a strategy for depositing
18 PK.

19 DR. SCOTT WELLS (by ZOOM): Yes, the 20
-- this is Scott Wells, IRP.

21 What those initial conditions are, and
22 what the initial density regime is in the pit, A418
23 pit, is not part of my expertise in terms of taking
24 the PK and understanding how that's going to produce
25 porewater with a certain chemistry.

1 But the existing modelling results are
2 very stable. As we've mentioned before it's a -- the
3 chemocline and everything is -- is not -- there's not
4 much motion down there to move things upwards.

5 So I think that's your question or...

6 DR. BARRY ZAJDLIK: Yes, that stable
7 chemocline is -- is the result of the initial inputs
8 to the model being a 200 year accumulation of
9 porewater.

10 But in 2030, we won't have two hundred
11 (200) years of porewater. So how stable will the
12 initial conditions actually be?

13 DR. SCOTT WELLS (by ZOOM): Scott
14 Wells, IRP. I think that's a question for the
15 sampling and monitoring. So I think that's where
16 adaptive management is a key here.

17 You really don't know until you start
18 depositing the material in the A418 pit. So that's
19 where you have to sample and see how things go as you
20 move through the project. I don't think modelling can
21 answer that question right now.

22 DR. BARRY ZAJDLIK (by ZOOM): Thank
23 you for that response. I have a slightly different
24 line of questioning now. It has to do with best
25 practices when depositing slurries.

1 Is it typically the case when
2 depositing mine waste slurries that water content is
3 controlled to ensure consolidation behaviour that
4 would lead to a desirable outcome?

5 DR. SCOTT TINIS (by ZOOM): Scott
6 Tinis, IRP. I'd refer to Shahid Azam for that
7 response.

8 DR. SHAHID AZAM (by ZOOM): Thank you
9 very much. Shahid Azam, with IRP.

10 Generally, the answer is yes. The way
11 we control that is the control of the solids content
12 which can be converted to other content. And most --
13 more and more mining operations are actually going in
14 that direction.

15 A normative value is usually known at
16 deposition and then there is slight variation,
17 depending on which ore body is processed on that day.

18 Also, mining operations use new
19 technologies, such as thickening and paste technology
20 and even filtration to actually remove part or most of
21 the water at the onset of deposition.

22 So the -- to answer your question, the
23 normative value is usually known. And I believe that
24 should also be the case over the last so many years --
25 I think two (2) or three (3) years or something like

1 that -- at the PK deposition onsite.

2 DR. BARRY ZAJDLIK (by ZOOM): Follow-
3 up question. Barry Zajdlik, on behalf of GNWT.

4 Should DDMI be considering dewatering
5 the PK slurry before depositing it to the mine
6 workings?

7 DR. SHAHID AZAM (by ZOOM): They -- 8
they can do that. The question is how much? Is it 9
partial or is it complete dewatering, and which new
10 equipment will be needed, or which -- for example, add
11 mixtures such as polymers or -- or flocculates will be
12 needed. And all of that is a different field.

13 I think the practice onsite is what
14 should be followed. With the caveat that the
15 information on the grit-rich material has to be kind
16 of known at some level. If the processing is the same
17 and the process water that is used is about similar,
18 and the confidence level in the variation in geology
19 of the ore body is there, then they can proceed with
20 regular -- as -- as their process is -- without
21 dewatering the slurries at the outset.

22 DR. BARRY ZAJDLIK (by ZOOM): Barry
23 Zajdlik, on behalf of GNWT.

24 Do you think that we know enough about
25 the grit-rich PK based on the samples that are

1 available?

2 DR. SHAHID AZAM (by ZOOM): I think 3
only the -- so there are two (2) things. The sample - 4 -
the original sample that was available was only one. 5
And, obviously, they had difficulty in getting that 6
sample.

7 But what they did is, in 2019, there
8 was a site investigation where they looked into so
9 many different materials which have segregated, and
10 some of them were -- well, different ranges of grain-
11 size distribution within the PKC facility, so --
12 within the containment facility.

13 So that is my question also, at some
14 level, do we know enough and how much confidence there
15 is in the grit-rich processing, as well as in the
16 material type and -- and all of that is based on
17 empirical understanding and experience at this site.

18 So again, the confidence will come from
19 where Diavik feels that they are confident about.
20 From an outsider, the different experience --
21 experience with different types of -- of materials, I
22 think mine sites and experience there is quite
23 important and significant because it is capturing
24 intricacies of the local material and process and all
25 of the above.

1 DR. BARRY ZAJDLIK (by ZOOM): Thank
2 you for that response. Barry Zajdlik, on behalf of
3 GNWT.

4 Another question. Yesterday, Bill
5 Slater expressed some concerns regarding DDMI's
6 decision not to conduct immediate laboratory testing
7 of PK samples.

8 The response from Gord MacDonald was
9 that mine -- the mine operates on different ore blends
10 over time and that currently the mine is producing an
11 ore blend that is not representative of what will be
12 deposited in the mine workings.

13 That statement corroborates my concerns
14 regarding lack of concern -- or lack of understanding
15 in the variability of PK, both within and among pits
16 which leads to the question for the IRP.

17 Does the IRP have concerns about the
18 suitability of the PK data that went into the model?

19 DR. SHAHID AZAM (by ZOOM): So,
20 again, only one (1) sample was available, right?
21 Based on which the entire modelling was conducted, the
22 consolidation modelling, that is.

23 There were other materials that were
24 also subject to lab testing. As I'd shown yesterday,
25 there were the fines which would not release water.

1 And then, there were the coarse materials, which will
2 release water.

3 How will they release it, primarily,
4 depends on the initial conditions of -- at deposition.
5 And therefore, I was of the opinion that I do not know
6 enough about the initial conditions. And therefore,
7 in our original recommendations, we mentioned that
8 some sort of baseline, based on whatever is available,
9 can be developed, so as to get an understanding of
10 where is the grit-rich with respect to releasing the
11 water and how quickly it does release it. So that was
12 our original thing.

13 With respect to variability, I don't
14 know how big the variability would be with respect to
15 different ore bodies. I think that overall the -- the
16 process water would be very singular -- this is my
17 assumption -- and the grit-rich in -- that -- that
18 removal of that component from the ore processing to
19 make it grit -- grit-rich, is probably okay.

20 But the material is -- what -- what it
21 is is this. You can grind it as coarse or as fine as
22 you can, but you can grind any material to that kind
23 of grain-size distribution. It's the interaction of
24 the process water with the mineral component and the
25 metals that will result in the -- in the porewater.

1 And that part is unknown geologically, as mentioned
2 also by Diavik.

3 DR. BARRY ZAJDLIK (by ZOOM): Thank 4
you for that response.

5 I've got a slightly different line of
6 questioning. The necessity with something that I was
7 thinking about last night, in terms of the runoff from
8 the site that I think is going to be uncontrolled.
9 And we know that cryoconcentration can lead to local
10 density gradients and that's been shown to induce
11 currents in lakes.

12 Is it possible that cryoconcentration-
13 induced currents could lead to instability of the
14 chemocline?

15 DR. SCOTT TINIS (by ZOOM): Scott 16
Tinis, IRP. I think that would be a good question for 17
Dr. Wells.

18 DR. SCOTT WELLS (by ZOOM): Yeah, 19
Scott Wells, from the IRP.

20 We did not look at that as a
21 possibility in the modelling. It's not clear to me
22 how much material and how big a density issue that
23 would be in the A418 ponds that you describe.

24 So I think the most important thing is
25 what are the details of that because one can't really

1 hypothesize about it being a possibility unless one
2 had much more concrete information about the nature of
3 what you were talking about.

4 DR. BARRY ZAJDLIK (by ZOOM): Barry
5 Zajdlik, on behalf of GNWT.

6 Unfortunately at this point we have no
7 information on that. There are model predictions I
8 think that will tell us what the surface water
9 concentrations would be from runoff, and at that point
10 we'd be reduced to rely on models to understand the --
11 the volumes and the concentrations and then the
12 subsequent effects of cryoconcentration.

13 So I'm just -- I'm throwing it out
14 there. Is this -- is this a totally crazy idea or is
15 there a distinct possibility that there could be some
16 destabilization?

17 DR. SCOTT WELLS (by ZOOM): And you
18 raise an interesting point about there being a density
19 current driven by differential density of an inflow,
20 that is always a possibility, but it seems to me much
21 smaller -- it seems just on the surface, I don't
22 really know the quantities we're talking about, but
23 perhaps it ought to be explored. But I think that
24 doesn't -- that may or may not affect any of the PK
25 stability down below.

1 DR. BARRY ZAJDLIK (by ZOOM): Thank 2
you for that answer.

3 Going back to the decant water and
4 variability, what -- obviously we don't know what the
5 decant water composition will be, we can infer it, but
6 I'm more interested in what the variability in the
7 decant water will be and how that affects modelling
8 conclusions.

9 Does -- does the IRP have any
10 reasonable suggestions as to how Diavik could assess
11 the variability in the decant water at this point in
12 time?

13 DR. SCOTT TINIS (by ZOOM): Scott 14
Tinis, IRP. The variability would simply come out of 15
the sampling program, and as -- as Diavik mentioned, 16
the -- the ore content or the ore structure may
17 change, and so doing multiple samples closer to the
18 time when you're actually going to deposit would
19 probably give you the best estimate of what your
20 initial water quality will look like in the decant
21 water.

22 And if you're -- if you do several
23 months or -- or several different samples, I mean that
24 gives you automatically an idea of your variability,
25 and from that you can draw, you know, both a base case

1 water quality and an upper case.

2 And going back to the sensitivities
3 that were requested, that's exactly what -- what I was
4 asking for specifically as input. So it just becomes
5 a simple number's game. The more samples you have the
6 better an idea you have of the variability and the
7 better you can convert that into an upper case source
8 term for your modelling.

9 DR. BARRY ZAJDLIK (by ZOOM): Thank
10 you for that answer. Barry Zajdlik, on behalf of
11 GNWT.

12 So I hear -- I hear what you're saying
13 with respect to sampling PK closer to the time of
14 deposition. But when you think about what is being
15 sampled, it's a population of PK that varies within a
16 pit and among pits, so in order to fully capture that
17 variability my recommendation would be to start
18 collecting samples now because all the PK is -- is
19 part and parcel of those pipes and will contribute to
20 variability that we expect to see. That wasn't really
21 a question, though.

22 My question has to do with what Dr.
23 Tinis just said. Should that sampling, that's the
24 sampling of PK and its associated properties, be
25 conducted prior to deposition and should the modelling

1 be updated prior to making a decision to deposit PK?

2 DR. SCOTT TINIS (by ZOOM): Scott
3 Tinis, IRP. So just for clarification, that was the
4 original intent of the recommendation that was made,
5 however, there are many ways that you can approach the
6 issue, and I think those are all very good points that
7 you've raised and should probably form the basis of
8 the discussion between the Board and Diavik.

9 DR. BARRY ZAJDLIK (by ZOOM): One (1)
10 last question I think. The CE-QUAL-W2 model
11 emphasizes the importance of calibration in using
12 modelling results.

13 Does the IRP believe that the modelling
14 results from an uncalibrated model should be relied on
15 to inform irrevocable decisions?

16 MR. RYAN FEQUET: Barry --

17 DR. SCOTT TINIS (by ZOOM): This is
18 Scott...

19 MR. RYAN FEQUET: -- sign language.

20 DR. BARRY ZAJDLIK (by ZOOM): Sorry,
21 could you repeat that? I didn't quite hear that.

22 MR. RYAN FEQUET: Sorry, I was just
23 trying to slow you down there so the translators could
24 keep up. Just a reminder, I know this is a very
25 technical topic for everyone, but wherever you can use

1 plain language please -- please do so.

2 DR. BARRY ZAJDLIK (by ZOOM): Barry
3 Zajdlik, on behalf of the GNWT. Then let me rephrase
4 that question a bit more slowly.

5 A model was used to predict the results
6 of depositing PK into the bottom of the pit. The
7 model is an elegant structure built on -- on a series
8 of mathematical relationships. That structure has to
9 be fitted to the specific application, and that
10 fitting is called calibration.

11 So it adjusts the model to the site's
12 peculiarities, however, that can't be done in advance
13 because we don't have that information.

14 So my question to the panel is: How
15 should we rely on a model that hasn't been calibrated
16 yet?

17 DR. SCOTT WELLS (by ZOOM): Scott
18 Wells, from the IRP. Barry, thank you for your
19 question.

20 In many cases where we have not built
21 something, let's say a new reservoir, a new dam, and
22 we do environmental impact assessment, we often use
23 uncalibrated models because that's our best guess at
24 the time.

25 So there's no way you can use a

1 calibrated model for a reservoir that's going to be
2 built in the Amazon or in some other part of the
3 world.

4 You use it, though, to assess the
5 environmental impact, and that's the same thing that
6 Diavik did here with the CE-QUAL-W2 model for the A418
7 pit. And in many cases when we do modelling if we get
8 our boundary conditions correct, we do very little
9 calibration in the end.

10 So it's all about understanding what's
11 causing the water body to respond. Is it
12 meteorological conditions, is it initial conditions?
13 Things like that are probably more important than what
14 I call calibration. In fact, most of the calibration
15 that we do is not tweaking model coefficients, but
16 it's getting the correct boundary conditions.

17 So I'm fairly confident that it's our
18 best guess, and obviously if there's sampling done
19 down the road, then that's there to help understand
20 whether the -- the assumptions were correct, but we --
21 we do this routinely.

22 DR. BARRY ZAJDLIK (by ZOOM): Thank
23 you for that answer. Barry Zajdlik, on behalf of the
24 GNWT. It's -- it provides some comfort in moving
25 ahead with this decision.

1 Thank you for your attention. I have
2 no further questions.

3 MR. RYAN FEQUET: Ryan Fequet here.
4 Barry, I just wanted to confirm.

5 You had made a comment kind of at the
6 beginning of your questioning. Were you asking Diavik
7 for an undertaking related to the decant water?

8 I don't remember the exact specifics,
9 but if -- if you did want to ask, now -- now would be
10 the time if there was some information you were
11 requesting from Diavik or a different party. I just
12 wanted to follow up.

13 DR. BARRY ZAJDLIK (by ZOOM): Barry
14 Zajdlik, on behalf of GNWT. Is there time to ponder
15 that question?

16 MR. RYAN FEQUET: We're here until
17 3:00 on Friday, so you can ponder until then.

18 DR. BARRY ZAJDLIK (by ZOOM): All
19 right. Thank you very much for that time. I have no
20 further questions.

21 MR. RYAN FEQUET: GNWT, ENR, do you
22 have any further questions at this time?

23 MR. RICK WALBOURNE (by ZOOM):
24 Thanks, Ryan. Rick Walbourne, GNWT. We have no
25 further questions at this time.

1 And, again, we'd like to thank the --
2 thank the Panel for their time and review and all
3 their responses. Thank you.

4 MR. RYAN FEQUET: Thank you, everyone.
5 The Environmental Monitoring Advisory Board is up
6 next, so please proceed with your questions. And just
7 noting that Dr. Scott Wells will have to sign off here
8 in a couple minutes.

9 So, Dr. Tinis and Dr. Azam, if -- if a
10 question you would like to defer to when Dr. Wells is
11 back, please just note that and we'll -- we'll keep it
12 in the queue here we can make sure we loop back to it
13 either this morning, if we have a chance, if we're
14 still going, or the next opportunity during the
15 Hearing.

16

17 (BRIEF PAUSE)

18

19 MR. JOHN MCCULLUM (by ZOOM): Hello. 20
Can you -- can you hear me?

21 MR. RYAN FEQUET: We can, John. Thank
22 you.

23 MR. JOHN MCCULLUM (by ZOOM): Okay. 24
Thank you. Thank you for your presentation, Panel 25
members. That was helpful and -- and interesting and

1 it's amazing the work you do, and I wish I could grasp
2 it better than I do.

3 Just a couple of simple questions.

4 Were you given a chance -- and this is a question
5 overall to the Panel -- to review Diavik's responses
6 to your recommendations?

7 And, if you did, I know you were -- you
8 were questioned about Recommendation 9 earlier, were
9 there any other -- were you satisfied with all of the
10 rest of the responses or is there anything you'd like
11 to add in terms of how they could be addressed -- how
12 they should be addressed differently?

13 DR. SCOTT TINIS (by ZOOM): Sure.
14 Scott Tinis, IRP. I would just ask if -- if -- Scott
15 Wells, if you have a moment, I don't know, you're
16 probably running a bit late, if you could address
17 those responses that you might have had some concerns
18 with.

19 DR. SCOTT WELLS (by ZOOM): This is 20
20 Scott Wells, from the IRP. I do know that we got some 21
21 responses before we finished our final report, but 22 some
22 of them were still in the process of being run.

23 There are some -- I really,
24 unfortunately, don't have time to get into it in
25 detail because I got to run to another really

1 important call in two minutes, but maybe I could catch
2 that question when I come back. I'll be back in an
3 hour, or I'll be available Friday to answer it.

4 So, I'm going to pass on that for right
5 now because I don't think I have sufficient time to
6 answer that.

7 MR. RYAN FEQUET: Thank you, Dr.
8 Wells. So, John, if you could just hold that one.
9 We'll make sure that you get a chance to come back to
10 it.

11 DR. SCOTT TINIS (by ZOOM): Scott 12
Tinis, IRP. I think I'll ask Shahid as well if he has 13
any concerns with the responses to recommendations.

14 DR. SHAHID AZAM (by ZOOM): No, I do
15 not have any concerns.

16 DR. SCOTT TINIS (by ZOOM): Okay.
17 And Scott Tinis, IRP.

18 Yeah, I guess I've discussed the
19 response to -- to Recommendation 9 in some detail. It
20 -- it does stand that I personally would recommend
21 that sampling be done before the porewater -- or
22 before the PK is deposited.

23 However, there is a lot of merit in the
24 sampling program that is -- or has been recommended or
25 suggested by -- by Diavik looking at the porewater and

1 decant water in situ prior to re-running the models.

2 MR. JOHN MCCULLUM (by ZOOM): Okay.

3 Thank you very much for those responses. John

4 McCullum, EMAB. One (1) -- a couple of other

5 questions.

6 EMAB had raised the -- the question of
7 whether or not Diavik -- well, actually, EMAB had said
8 Diavik -- we do not feel Diavik ran a reasonable -- or
9 modelled a reasonable worst-case scenario.

10 We had discussions with Diavik. And --
11 and they asked us to describe what a reasonable -- you
12 know, how -- how we should set up modelling a
13 reasonable worst-case scenario.

14 And we were -- we felt that that was
15 something the -- the modellers would -- would know
16 best. And we sort of gave some general parameters for
17 how that could be set up.

18 But while we have you experts here, I'm
19 wondering if you could describe how you would set up a
20 reasonable -- or set up a model of a reasonable worst-
21 case scenario for this project. Thank you.

22 DR. SCOTT TINIS (by ZOOM): Scott

23 Tinis, IRP. That's a very interesting question.

24 There is a series of sensitivities that
25 were run. And I don't believe that people have access

1 to the list. I have them in front of me.

2 And I have a list of, I think, of
3 twenty-five (25) sensitivities that were run, and many
4 of them were run with either boundary conditions or
5 initial conditions that were very extreme compared to
6 what's expected to be seen, for example, winds that
7 were run for several days at the maximum wind speed
8 that has been recorded in the area over, you know,
9 either a period of record or -- or several decades.

10 And so, typically, when you run
11 sensitivities, you want to examine what the effect of
12 changing one (1) parameter and running that at an
13 extreme is.

14 You run an ensemble of these. And then
15 you essentially plot the results. And where it
16 becomes tricky is -- is exactly what you are saying,
17 are there interactions that you're not foreseeing when
18 you're running these sensitivities.

19 So, there's -- there's multiple ways of
20 -- of approaching that. For one, you could pick two
21 (2) or three (3) parameters to vary at the same time.
22 You could run a stochastic analysis; in other words,
23 allow all of the parameters to vary stochastically and
24 run multiple simulations, and perhaps the -- the
25 worst-case will become evident.

1 And then you can look back and say,
2 well, what are the inputs or what are the boundary
3 condition levels that have to be met before we
4 actually see this worst-case.

5 And so, most of the time, it's -- it's
6 a question of what -- what is the confidence that you
7 have that the -- the sensitivities -- or the adverse
8 effects you see within these sensitivities add in a
9 linear fashion.

10 In other words, if you had two (2) of
11 these things go wrong at the same time, is the worst-
12 case from both of them going to the extreme? Is that
13 the sum of -- of what you see in the results?

14 If these -- the two hundred (200) year
15 simulations are expensive in terms of time and
16 computing, so it takes a long time to run these. And
17 in many cases, it's not necessarily feasible to be
18 able to run a stochastic -- a fully stochastic run
19 which could involve several thousand iterations.

20 And so, what you tend to do then is,
21 for your sensitivities, you do take your parameters
22 and you put them to -- to extreme values.

23 And I think, looking through the list,
24 there -- the parameters that were -- were varied and
25 examined within these sensitivities are -- are the

1 appropriate ones.

2 They address density, mechanical
3 mixing, and boundary conditions, including initial
4 conditions.

5 And so, barring doing a complete
6 stochastic analysis, I think that the list of
7 sensitivities that were run are appropriate for this
8 situation.

9

10 (BRIEF PAUSE)

11

12 MR. JOHN MCCULLUM (by ZOOM): Thank 13
13 you very much for that answer, Dr. Tinis. I'm not 14 sure
14 you answered my question though. I was asking 15 about
15 how you would set up a reasonable -- to model a 16
16 reasonable worst-case scenario.

17 So, I think what you're talking about
18 is -- from what I understood, what you're saying is,
19 when the sensitivity model is run, one (1) parameter
20 is varied. And what we're looking for would be I
21 guess a -- a range of those parameters all at -- at
22 fairly extreme levels.

23 And -- and, again, this is something I
24 don't -- I'm not really very familiar with, and -- and
25 I -- so I'm looking for you guys to say what -- how

1 would you set up a reasonable worst-case scenario run?

2 DR. SCOTT TINIS (by ZOOM): Yeah.

3 Scott Tinis, IRP.

4 I -- I think I would just simply take
5 the sensitivities that were run, find which of the
6 parameters when they were varied that the results are
7 most sensitive to, and then run perhaps a limited
8 stochastic run with varying a few parameters that are
9 the most critical. I think that's probably the most
10 sensible way to do a -- a reasonable worst case.

11

12 (BRIEF PAUSE)

13

14 MR. JOHN MCCULLUM (by ZOOM): Thank 15
you, Dr. Tinis. So -- so I guess what I think I'm 16
hearing is reason -- really the -- the best thing to 17 do
is -- is do some kind of a stochastic run rather 18 than
try to set up a -- a run for a reasonable worst- 19 case
scenario as a single run of the model.

20 DR. SCOTT TINIS (by ZOOM): Yeah.

21 Scott Tinis, IRP. Yes, given -- given resources and
22 time, that's generally a best-practices approach to
23 it.

24

25 (BRIEF PAUSE)

1 MR. JOHN MCCULLUM (by ZOOM): Okay. 2
Thank you. And one (1) final question.

3 I don't know if it's really a question
4 or not, but one (1) of the things that -- that EMAB
5 has advocated for is -- is some -- some fairly intense
6 monitoring once the -- once the PK is deposited, and
7 particularly once the -- the freshwater cap has been
8 placed on top of the PK.

9 I -- I guess I -- I think I heard from
10 -- from you and your colleagues this morning that
11 really, I mean, you know, modelling is all very nice,
12 but we're not really going to know what's -- what's
13 happening in that lake until -- until we see what is
14 happening in that lake by monitoring it.

15 So monitoring, I think you would agree,
16 is very important. And the more detailed the
17 monitoring, the better an idea of -- we'll have of how
18 the lake is behaving once things get going. So I
19 guess that's a would-you-agree-with-that question.

20 DR. SCOTT TINIS (by ZOOM): Scott
21 Tinis, IRP. Yes. Yes, I would agree completely.

22 MR. JOHN MCCULLUM (by ZOOM): Thank
23 you very much. No further questions from EMAB.

24 MR. RYAN FEQUET: Thank you, John.

25 MR. JOHN MCCULLUM (by ZOOM): Yeah,

1 and that was John McCullum, from EMAB talking.

2 MR. RYAN FEQUET: Thanks, John.

3 Next up on our agenda is questions from
4 the Tlicho Government to the Panel. And I -- I just
5 wanted to check in with you guys across the room
6 there. Knowing how many questions you have, would you
7 suggest that we take a quick break, or would you like
8 to start with your questioning right away?

9 MR. BRETT WHEELER: Masi. It's Brett
10 Wheler, Tlicho Government. We would be fine with a
11 break. We have four (4) or five (5) questions. The -
12 - the one (1) thing I'm wondering about is -- is we
13 did have a -- a couple of similar questions to what
14 EMAB asked, especially the one (1) that was deferred
15 to a bit later.

16 So we -- we'd be comfortable with --
17 with whatever approach the Board wants to take with
18 that, if it's moving -- delaying all the questions for
19 -- for the Panel to the time when Dr. Wells is back or
20 -- or proceeding after a break with keeping track of
21 different ones like -- like we have started. Masi.

22 MR. RYAN FEQUET: Mr. Mackenzie has
23 signalled that we'll take a quick break. So it's
24 10:11 Mountain Time, so maybe we'll come back at
25 10:20, 10:20, nine (9) minutes. We'll aim for that.

1 Come back at 10:20 and we'll -- we'll advise all
2 parties how we'll proceed.

3

4 --- Upon recessing at 10:10 a.m.

5 --- Upon resuming at 10:25 a.m.

6

7 MR. RYAN FEQUET: Okay, good morning.
8 Just going to get started up, everybody please take
9 your seats, grab your coffee.

10 Okay guys, I just wanted to clarify
11 something. So we're going to proceed with the
12 questioning of the Independent Review Panel.

13 If any parties do have a question that
14 Dr. Tinis and Dr. Azam would like to defer to Dr.
15 Wells' return, we just ask the Panel to make a note of
16 the question and we'll do -- on our side here we'll
17 track who is asking that question.

18 And once we've gone through questioning
19 from all of the individuals and the parties, we'll
20 loop back around to those -- to those questions that
21 are set aside for Dr. Wells. So that way we can make
22 good use of our time and keep rolling and get through
23 as much as possible.

24 So I'll turn it over to the Tlicho
25 Government for their questions to the Independent

1 Review Panel.

2 MR. BRETT WHEELER: Masi. It's Brett
3 Wheler, for the Tlicho Government.

4 We first just wanted to say a big masi
5 to the Panel for all your work on this project and for
6 sharing your technical knowledge with us. We really
7 value your independent expert peer review. We only
8 provided our questions to you on Tuesday, so we
9 understand if you cannot answer some of them.

10 The first question is: What are your
11 thoughts about the approach to monitoring that the
12 Tlicho Government proposed in our intervention and
13 would you suggest any revisions to the timing or the
14 approach? Masi.

15 DR. SCOTT TINIS (by ZOOM): Scott
16 Tinis, IRP. Thank you for the question.

17 As you mentioned, I haven't had a
18 chance to look detailed through the monitoring
19 approach. I did look through it and found there were
20 a lot of synergies I think with what Diavik has
21 proposed.

22 And one (1) thing that I recall that
23 sticks out for me is a -- an emphasis on adaptive
24 monitoring, which would mean that should something
25 arise from the initial monitoring plan, that changes

1 would be made to the monitoring to -- to adapt to
2 that.

3 And I believe that Diavik has intimated
4 that that would certainly be part of their monitoring
5 plan going forward.

6 If possible I would like time to go
7 through in detail and can I give you a -- a written
8 response?

9 MR. RYAN FEQUET: Dr. Tinis, when
10 would you be able to provide that written response?

11 DR. SCOTT TINIS (by ZOOM): I can
12 provide it before tomorrow morning's session.

13 MR. RYAN FEQUET: Is that okay to the
14 Tlicho Government?

15 MR. BRETT WHELER: Yes, Brett Wheler,
16 Tlicho Government, we would really appreciate that at
17 that time or even at a later time if it took more
18 time. Masi.

19 Okay, Brett Wheler, Tlicho Government.
20 Yesterday Diavik suggested that after comprehensive
21 monitoring when the pit is full if the water is good
22 it may be better to reconnect to Lac de Gras sooner
23 rather than later.

24 Does the modelling tell us anything
25 about how water quality in the pit lake could be

1 affected by reconnecting sooner rather than later?

2 Masi.

3 DR. SCOTT TINIS (by ZOOM): Scott

4 Tinis, IRP.

5 Generally I would say that the water
6 quality will be affected by the incoming water through
7 the breach from Lac de Gras. Obviously it's a
8 combination of the two (2).

9 So as to the question earlier than
10 later, I don't -- I can't foresee if it's the space of
11 a few months or a few years that it would make a large
12 difference.

13 I would like to table this question for
14 Dr. Wells as well, if that's okay with the Tlicho
15 Government.

16 MR. BRETT WHEELER: Masi, yes. That's
17 certainly fine with us.

18 Next question. Does the panel have any
19 suggestions for the Board on how to structure the
20 Panel review process and participation going forward
21 so that it is most effective and so that your
22 recommendations result in a more robust model and a
23 better understanding of predictive water quality
24 through the model stages? Masi.

25 DR. SCOTT TINIS (by ZOOM): Scott

1 Tinis, IRP.

2 Forgive me if I take a bit of time on
3 this. The majority of the recommendations from the
4 Panel were accepted without condition, I believe, by
5 Diavik. And some that were not accepted are okay from
6 -- from the Panel's point of view.

7 So for the -- to be honest, I'm not
8 quite sure what the interaction between the Board and
9 the -- and Diavik will be going forward. And I don't
10 know if it's appropriate for me to recommend or for
11 the Panel to recommend that any of our recommendations
12 be written into the licensing.

13 I think the best thing that the -- the
14 best use of the Panel recommendations is to simply
15 guide the Board and Diavik to come to a reasonable set
16 of licence conditions that would allow for the safe
17 deposit of -- of PK to A418.

18 And I think the dialogue that's going
19 forward here and I think that the questions from all
20 Interveners have been extremely useful and I've been
21 highlighting really those areas that we need to focus
22 on to give everyone confidence in the process going
23 forward.

24 So I'm afraid that's not a definitive
25 answer to your question, but I -- I believe that's the

1 best that the Panel can recommend at the moment.

2 MR. BRETT WHEELER: Masi. Brett
3 Wheler, Tlicho Government.

4 Just to confirm, you've -- that it
5 sounds like you've found the process this fall that --
6 that you went through with Diavik to be -- I think you
7 said good dialogue. That you found that to -- to be
8 effective.

9 And the reason we are asking about this
10 is we are thinking ahead to the Panel's involvement in
11 the next stages of -- of model development. Masi.

12 DR. SCOTT TINIS (by ZOOM): Scott
13 Tinis, IRP. Yes, the -- we found generally that this
14 has been a -- a very large effort on the part of
15 Diavik and the modelling team. I believe they have
16 done an extremely professional job and they've looked
17 at the problem many ways.

18 And I know that a lot of sweat equity
19 has gone into refining these models so that they are -
20 - are giving the best reasonable results that they
21 can. In other words, the -- the model inputs, the way
22 they're run, the interpretation of the
23 parameterizations within the model -- or models,
24 excuse me -- a lot of thought has gone into it and a
25 lot of thought went into the sensitivities.

1 And the -- the interaction with the
2 Panel during our review was -- was excellent.
3 Anything we asked for was -- was done or considered
4 promptly and -- and very well done.

5 And so, I would expect that would carry
6 forward to the stage 2 modelling and whether it is the
7 present Panel that will be doing the review on that or
8 a new panel, I think they'll find the same
9 professional interaction.

10 MR. BRETT WHEELER: Brett Wheler,
11 Tlicho Government. Masi for that answer.

12 We -- we know that there's uncertainty
13 in the quality of the porewater and the water that
14 will come out of the processed kimberlite.

15 We are wondering how much that matters
16 and how much can that be -- how much can that be
17 mitigated by Diavik removing and treating the
18 porewater and the PK water before filling the pit?
19 Masi.

20 DR. SCOTT TINIS (by ZOOM): Scott 21
21 Tinis, IRP. The question of the -- the decant water 22
22 from the PK, I believe could be addressed through the 23
23 response to Recommendation 9, which was they could not 24
24 only consider the water quality, but also the volume.

25 And if need be, Diavik has suggested --

1 at least in the response to that recommendation --
2 that the water could be pumped and treated or treated
3 in situ, depending on what's appropriate for the --
4 the parameter they're trying to treat.

5 As to the porewater, only a small
6 amount of porewater is expected to be present before
7 the pit is filled. And the remainder -- the remaining
8 porewater, depending on how much is released, will
9 remain within the pit after the pore -- after the
10 freshwater cap has been put on.

11 And so, the water chemistry of that
12 porewater, where that becomes important, is on what
13 the actual mixing and diffusive processes are in A418
14 over the long term.

15 And so, as per the Recommendation 9, it
16 was envisioned that a good knowledge of what this
17 porewater chemistry may look like would go a long way
18 in assessing the results of the stage 2 modelling.

19 And that knowing ahead of time what
20 mitigations might be required once -- once the PK was
21 in place, would be -- would be extremely beneficial.
22 And that's why the original program, as envisioned,
23 began before PK was -- was placed in the pit.

24 MR. BRETT WHEELER: Brett Wheeler,
25 Tlicho Government. Masi for that answer.

1 Short follow-up. How much -- how much
2 of a benefit could be achieved by -- by waiting longer
3 before filling the pit to -- to be able to, for
4 example, treat as much of the porewater -- to treat a
5 little bit more of the porewater before filling the
6 pit? Masi.

7 DR. SCOTT TINIS (by ZOOM): Scott
8 Tinis, IRP. So I think there's possibly two (2) parts
9 to this answer. I would like to address the first
10 part, and then, maybe ask Dr. Azam if he would weigh
11 in on the second.

12 The first would be the net groundwater
13 flux out of pit A418 and into pit 154. So during the
14 -- the pit -- or when examining the pit filling model,
15 this was a loss of an initial decant and porewater
16 through the groundwater system to the adjacent pit.

17 So, in my mind, it becomes a bit of a
18 trade-off. The longer you wait, theoretically, the
19 more porewater you have available. And if you need to
20 mitigate, you could pump or treat in situ, the water
21 that's available.

22 However, at the same time, you may be
23 losing some of that to the groundwater system. And
24 that might render it less treatable and -- and that's
25 Just a hypothetical idea on my part.

1 The second part of the question is: How
2 much of the porewater will we see in the first, say,
3 year or two? That's the time frame that -- that your
4 question envisions. And for that, I would like to ask
5 Dr. Azam to maybe weigh in on -- on how much porewater
6 he would expect to come out of the PK in the first
7 couple of years.

8 DR. SHAHID AZAM (by ZOOM): Thank you
9 very much. Shahid Azam, IRP.

10 So that will depend on the initial
11 conditions of the -- of the tailings of the PK,
12 basically.

13 If it is a dilute slurry, it's going to
14 release more water. If it is a concentrated slurry,
15 with a higher solids content, it will release the
16 water slowly. So the rate depends on the initial
17 solids content of the slurry.

18

19 (BRIEF PAUSE)

20

21 MR. BRETT WHEELER: Masi. Brett
22 Wheeler, Tlicho Government.

23 I believe Diavik referred, yesterday,
24 to a number around 80 percent water in the -- in the
25 slurry -- in the tailings slurry.

1 Does that -- does that affect your
2 response to -- to that question? Masi.

3 DR. SHAHID AZAM (by ZOOM): Shahid
4 Azam, again, from the IRP. So 80 percent water
5 released or 80 percent water to start with?

6 MR. BRETT WHEELER: Brett Wheeler,
7 Tlicho Government. To start with.

8 I -- I understood to be in the pipe
9 coming in to the pit to have about 80 percent water
10 and -- and 20 percent solids. Masi.

11 DR. SHAHID AZAM (by ZOOM): That is
12 the -- I think this was asked earlier, so that I think
13 still remains to be the question. What is -- what are
14 the initial conditions of this material?

15 If we have confidence in those initial
16 conditions, well, then these are kind of known. But I
17 -- again as I mentioned earlier, based on geology and
18 processing, and -- and what then, there may be
19 variation in that initial conditions because of which
20 the rate of release of porewater and the overall
21 amount of porewater in the first two (2) years will be
22 dependent on those initial conditions.

23 MR. BRETT WHEELER: Brett Wheeler,
24 Tlicho Government. Okay. Masi.

25 I have one (1) question about

1 monitoring. We see that a lot rests on the monitoring
2 done at SNP 1645-88 in the pit. There's three (3)
3 parts to this one.

4 First, do you have a su -- do you have
5 suggestions for fine-tuning that sampling?

6 Second, is there any particular
7 monitoring that would help calibrate the -- the final
8 model, the long-term model or -- or set the right
9 boundary conditions, as was described earlier?

10 And third, do you have observations
11 about the most important time for data collection
12 during PK deposition or -- or at any time before
13 flooding the pit? Masi.

14 DR. SCOTT TINIS (by ZOOM): Scott
15 Tinis, IRP. My understanding of the monitoring
16 program is that you're possibly describing two (2)
17 different phases.

18 The first phase is the monitoring of
19 the PK porewater and decant water prior to filling,
20 and as I understand it, that would simply be a water
21 sampling program that I assume would go on for some
22 period of time at -- at regular frequency simply to --
23 to examine what the -- what that water is going to
24 look like prior to filling.

25 And the -- the second, the longer term

1 monitoring at the -- the station, the SNP station that
2 you mentioned, was the -- the multi-phase monitoring
3 where there was continuous conductivity sampling in
4 the center of the pit supplemented by occasional water
5 sampling for chemistry.

6 And so I'd like -- like to address the
7 -- the second one which is the -- the longer term
8 monitoring.

9 So this -- the station location in the
10 center of the pit, a single station in the center of
11 the pit should be sufficient. There can be some wave
12 action, internal wave action, that is between the
13 interface along the chemocline which would be a -- a
14 density interface as well, and a round pit could have
15 some very complex motion around there.

16 But in general, if you're not -- I
17 think if you were to design a sampling program from
18 scratch you might take one (1) or two (2) initial
19 sampling programs which would -- which would have
20 multiple stations, and you -- you want to do those as
21 close together as possible to try and get a single
22 snapshot in time to look to see if there's any spatial
23 variability.

24 And when you're confident that there's
25 not a lot of spatial variability and there's not a lot

1 of activity going down along that density interface,
2 then setting up a single station is appropriate, and I
3 believe the continuous sampling was to be done every
4 month or so when possible, and then that's
5 supplemented by water sampling quarterly or -- or four
6 (4) times a year; whether it's equally spaced or not,
7 I'm not sure.

8 So you asked about fine-tuning that
9 sampling for modelling purposes. So it might be good
10 to consider a more spatially dense set of -- of
11 conductivity casts either once at the beginning of the
12 program or every once in a while to simply assure
13 yourself that you're not missing some spatial
14 variation within the pit.

15 As far as -- as temporal sampling, it's
16 always good to understand the physical processes
17 within the pit, and -- and we've heard many
18 suggestions about where possible sources of vertical
19 density currents might come from, and those would be
20 important to understand if they do exist.

21 And so, for example, spread overturning
22 is -- is an important point, and whether -- I'm not
23 sure at this site if there's a fall overturning event
24 or not, so those are definitely times that you want to
25 be -- be sampling either more frequently or simply

1 understand when they occur and -- and sample before
2 and after.

3 As far as calibrating the model's
4 concerned, I think that being very strategic in your
5 sampling and understanding the processes goes a long
6 way and -- into calibrating the model.

7 So, when modellers look at events
8 within their -- their model they sometimes say did we
9 see that in the data, and I know I do that all the
10 time, and so it's good to have a comprehensive data
11 set to go back to and say no, we're not really seeing
12 that, so maybe we need to change our parameterization
13 or understand where the -- the boundary condition is -
14 - is getting away on us here or -- or something to
15 that effect.

16 And you asked -- I'm sorry, my -- my
17 notes are -- are fairly bad. Could I ask you to
18 repeat the third part of your question?

19 MR. BRETT WHEELER: Brett Wheeler,
20 Tlicho Government. Masi.

21 I -- I think you -- you covered most of
22 it. It was about the -- if there's any critical
23 timing windows for the monitoring, and -- and I think
24 you addressed that by -- by talking about the two (2)
25 different times to monitor prior to filling and then -

1 - and then longer term. So masi for that.

2 I -- we did have a question earlier
3 that -- that I think was deferred. I'm getting the
4 thumbs up that I could ask that again. And -- and I
5 think the -- yeah, I think -- I think the -- the main
6 one that -- that was deferred was our question about
7 Diavik's suggestion that it may be better to reconnect
8 to Lac de Gras sooner rather than later, of course,
9 after doing comprehensive testing of the water.

10 So, does the modelling tell us anything
11 about how water quality in the pit lake could be
12 affected by reconnecting sooner rather than later?

13 Masi.

14

15 (BRIEF PAUSE)

16

17 DR. SCOTT TINIS (by ZOOM): It's 18
18 Scott Tinis, IRP. So, for Dr. Wells' information, 19
19 this was a question that was tabled in his absence.

20 And it was hoped that he could expand
21 on the idea that there may be some advantage or
22 possible disadvantage to opening the breach sooner
23 than later.

24 DR. SCOTT WELLS (by ZOOM): Thank 25
25 you. This is Scott Wells, I'm back, from the IRP.

1 The advantage of opening the breach is
2 that you're going to bring in high-quality water to
3 basically dilute any of the surface runoff in the A418
4 pond.

5 And so, that would be one (1) of the
6 advantages is to make the water quality in the pit
7 itself, the surface concentrations, perhaps better.
8 So, that's the -- the only impact of opening it up
9 earlier that I can think of. Thank you.

10

11 (BRIEF PAUSE)

12

13 MR. BRETT WHEELER: Masi. Any impact
14 on Lac de Gras water quality related to that timing?
15 Masi.

16 DR. SCOTT WELLS (by ZOOM): This is 17
Scott Wells, from the IRP. It really depends on what 18
the concentrations and chemistry are in the pit lake 19
itself. And I think that's the advantage.

20 I think Diavik has stated that they
21 would be doing sampling work before they open a
22 breach. And so, that's -- that's the proof right
23 there, is what is the water quality in the A418 pit.
24 And that is going to be determined primarily from
25 sampling.

1 MR. BRETT WHEELER: Brett Wheler,
2 Tlicho Government. Masi for that.

3 Mr. Chair, would it be appropriate to
4 re-ask the question that EMAB asked which Tlicho
5 Government also had at this time?

6 MR. RYAN FEQUET: You read my mind,
7 Brett. This -- kill two (2) birds with one (1) stone,
8 if you don't mind, since you guys still have the
9 floor.

10 MR. BRETT WHEELER: Okay. Masi.
11 Something happened here to my note.

12 But -- but anyway, the question was --
13 was: Does the Panel have any outstanding concerns
14 based on Diavik's responses to all the Panel's
15 recommendations, in particular, beyond the -- the one
16 about anaerobic testing that -- that was already
17 talked through this morning, but any outstanding
18 concerns with Diavik's responses to the Panel's
19 recommendations? Masi.

20 DR. SCOTT WELLS (by ZOOM): So, this
21 is Scott Wells, from the IRP.

22 For the long-term modelling of the CE-
23 QUAL-W2 and the breach modelling that was done that I
24 reviewed, Diavik and the Golder team responded to
25 every point that I brought out. So, I appreciated the

1 fact that they were responsive and they responded to
2 all those points.

3 As I mentioned earlier, I don't think
4 it was our charge to dig in after their response, to
5 re-review their responses in detail. Were some of
6 their responses exactly what I would have done;
7 maybe, maybe, maybe not?

8 But I think, in the end, they made a
9 good-faith effort to do their best on the modelling.
10 And I think the modelling does tell us that the PK in
11 the A418 pit, if the initial condition is correct,
12 will likely stay down there.

13 And so, I think that's the -- that's
14 the issue that we were primarily looking at.

15 Now, whether there's lots of little,
16 fine things that could be corrected, maybe there are
17 still some fine things. But will they change the
18 result from white to black? I don't -- my gut feeling
19 is they would not.

20

21 (BRIEF PAUSE)

22

23 MR. BRETT WHEELER: Masi for that.

24 Brett Wheeler, Tlicho Government. We have no further
25 questions.

1 MR. RYAN FEQUET: Masi to the Tlicho
2 Government. Next up is the Deninu Kue First Nation,
3 DKFN. If you have any questions for the Independent
4 Review Panel, please proceed.

5 DR. MARC D'ENTREMONT (by ZOOM): Yes.
6 Good morning. It's Dr. Marc D'Entremont, here for the
7 Deninu Kue First Nation.

8 I guess one (1) of the advantages or
9 disadvantages of being at this point in the
10 questioning is, again, most of the questions we had
11 have already been asked and -- and answered. However,
12 I do have one (1) question which I'll just say for the
13 record with a bit of a preamble.

14 So, the DKFN, in its closing arguments
15 to the environmental assessments, recommended to the
16 Review Board that the project not be approved
17 primarily because of the level of uncertainty in some
18 of the effects, again, associated with the modelling
19 at the time and the prediction on the effects to water
20 quality.

21 However, here we are in the water
22 licence amendment stage. And then, as we've heard
23 from the Panel and with some of the previous
24 questions, there still remains a certain level of
25 uncertainty in the predictions which is inherent in

1 any model, and -- and output, as well.

2 So, I'd like to thank the IRP for their
3 work. It was very important. And -- and I think
4 their involvement in the process was critical in terms
5 of addressing some of these uncertainties.

6 However, I would ask the question for
7 the record. And I understand if the Panel wants to
8 defer to their previous responses, but, again, just
9 for the record, I'd like to ask:

10 What should the Wek'eezhii Land and
11 Water Board consider to ensure uncertainties regarding
12 water quality are addressed within the permitting
13 process? Thank you.

14

15 (BRIEF PAUSE)

16

17 DR. SCOTT TINIS (by ZOOM): Yeah, 18
Scott Tinis, IRP. Yeah, thank you for the question.

19 And I -- I will refer to our -- our
20 previous responses to that and that I think that the
21 Water Board engagement going forward with respect to
22 how the uncertainties can be addressed in the
23 licencing is a very important question.

24 DR. MARC D'ENTREMONT (by ZOOM): Marc
25 d'Entremont, for DKFN. Thank you for that response.

1 We have no further questions.

2 MR. RYAN FEQUET: Thank you, Marc.
3 North Slave Metis Alliance, do you have any questions
4 for the Independent Review Panel at this time?

5 MS. ADELAIDE MUFANDAEDZA (by phone):
6 Hello. Good morning. It's Adelaide, from the North
7 Slave Metis Alliance. I would just like to thank the
8 Independent Review Panel for their great work that
9 they've done in reconciling and explaining this to us
10 in a very clear manner.

11 I would just also want to reiterate.
12 As we noticed that a detailed adaptive monitoring
13 approach should be done. And I will stand firm on
14 that word. Thank you. But I have no further
15 questions.

16 MR. RYAN FEQUET: Masi, Adelaide. The
17 Yellowknives Dene First Nation, Sarah and/or Ryan?

18 MS. SARAH GILLIS (by ZOOM): Thank
19 you, Ryan. Sarah Gillis, for YKDFN. As Mark said,
20 one (1) of the benefits of coming up here
21 (INDISCERNIBLE). No further questions, and thank you.

22 MR. RYAN FEQUET: Thank you, Sarah.
23 We did receive confirmation from the
24 Fort Res -- Resolution Metis Government that they
25 don't have any questions for the Independent Review

1 Panel, but I'll just ask if there's any other members
2 of the public at this time in the room or online that
3 have any questions.

4

5 (BRIEF PAUSE)

6

7 MR. RYAN FEQUET: Nothing from Kevin.
8 Okay. We'll move -- move to the next. So Board
9 staff, if you have any questions for the Independent
10 Review Panel, please proceed.

11

12 (BRIEF PAUSE)

13

14 DR. KATHY RACHER: Hi there. It's
15 Kathy Racher, on behalf of the Board, and, yes, as
16 everyone else has said, thank you very much to the
17 Panel for your patience and hanging out with us
18 remotely and answering all our tough but very
19 important questions.

20 I think some other people have asked
21 questions generally about whether you are okay with
22 Diavik's responses to some of your recommendations.
23 As the -- as the Board, though, we -- we need specific
24 evidence on -- on these things to help write our
25 reasons for decision.

1 So I -- I apologize if this seems
2 repetitive, but I -- I just want to clarify a few more
3 things. And in particular, I'm going to go through a
4 couple of different recommendations.

5 So let's start with the Recommendations
6 Number 2, 3, 4, and 5 which I believe mostly came from
7 Dr. Azam. You recommended that Diavik do additional
8 assessments of how the processed kimberlite will
9 consolidate during and after deposition.

10 And Diavik accepted these
11 recommendations, but proposed only to implement them
12 during the deposition of the PK, not prior to.

13 And I just want to check that this
14 proposal of theirs is acceptable in your opinion, and
15 if not, what are the potential consequences to the
16 model results?

17 DR. SHAHID AZAM (by ZOOM): Shahid 18
Azam, with the IRP. Thank you very much.

19 I think I kind of alluded to this
20 earlier, but what I will mention is, in the mine waste
21 management, there is what we call the observation
22 method, which is very similar to adaptive management
23 in that there -- if you allow me a few components of
24 that which is: Identify the baseline, assess
25 unfavourable conditions, observe field behaviour, and

1 identify a course of action for correcting those.

2 So within that regime or -- or within
3 that framework, if you will, I mentioned that there
4 should be a baseline. However, with -- if we have
5 confidence in the variability of the ore body, there
6 is the geological variability which then relates to
7 the mineral composition, as well as the processing of
8 the ore body in terms of the degritting process and
9 the type of water that is added, I think we will be in
10 decent shape with respect to the timing of the -- of
11 the data that is proposed to be collected.

12 DR. KATHY RACHER: Okay. Thank you
13 very much, Dr. Azam. That's helpful. The next one,
14 the Panel Recommendation Number 7, was a
15 recommendation to monitor temperature at depth during
16 deposition.

17 Diavik has not accepted this
18 recommendation since they have -- they say they've
19 confirmed thawed conditions during operation of the
20 underground mines.

21 So my question for you is: Do you
22 accept their reasoning for not accepting this
23 recommendation?

24 DR. SHAHID AZAM (by ZOOM): Shahid
25 Azam, with the IRP. I think this is based on

1 empirical understanding and experience at the site. I
2 also checked internally with my colleagues, and I
3 think they're also okay in terms of the phthalic
4 conditions or underwater at least.

5 My experience is primarily based on
6 uranium mining in Saskatchewan where there is frozen
7 lenses within the containment facility, although that
8 is not as deep as what is being proposed here, which
9 is the A418.

10 So I think I'm okay. I think they
11 confirmed, and if they have confidence, then it should
12 be okay.

13 DR. KATHY RACHER: Kathy Racher, for
14 the Board. Thank you. Okay. So let's move on to --
15 we've -- we've talked about Recommendation Number 9.
16 I'm good there. So let's move on to Recommendation
17 number 10.

18 And as part of your response to
19 Recommendation 10, which was about assessing or doing
20 additional analysis on the breach model, Diavik says
21 they -- they have performed some additional analysis,
22 including sensiti -- sensitivity runs on the breach
23 model.

24 And, in your opinion, has this
25 additional work satisfied your concerns?

1 And I believe this is for Dr. Wells.
2 And based on your previous responses, it's possible
3 that you have not had an opportunity to look at the
4 additional runs and additional work that Diavik did in
5 their October 16 submissions. So you can just let me
6 know where you stand with this one.

7 DR. SCOTT WELLS (by ZOOM): This is
8 Scott Wells, from the IRP.

9 I did review the October submission,
10 and some of the work was still being worked on. I
11 noticed that the current submission in December had
12 some additional information in it that was not
13 included in the October material because in the
14 October material they were saying they still would do
15 this or that.

16 So one (1) of the things that they did
17 with the breach model was, besides cleaning up the
18 temperatures, they also did an analysis of the flows
19 in and out of the breach. And they tried to do a
20 sensitivity run where they made the wind go to zero.

21 And I did notice that they had a -- a
22 result in their latest document which was submitted
23 just I guess a week or so ago, and it had the flows
24 being basically close to zero with no wind. So that -
25 - that was helpful to see that.

1 I did notice there was some tiny
2 oscillations in there which still would be of concern.
3 And I think it's at the point where, you know, they
4 made a good-faith effort to look at it, and the issue
5 about the breach flow really has to -- it's probably
6 more important to deal with the sampling and opening
7 of the breaches than at this point looking at the
8 modelling.

9 So I don't think the breach flow itself
10 is going to be impact the stability of the PK in the
11 pit; that would be a different issue. It has to do
12 with the surface concentrations and surface runoff
13 which may be better served by doing adaptive
14 management by looking at actual field data before the
15 breaches are opened.

16 DR. KATHY RACHER: Okay. Kathy
17 Racher, for the Board. Thank you. Thank you very
18 much. Okay.

19 IRP Recommendation Number 11 was to
20 correct minor errors and follow suggestions for
21 turbulence, closure and wind speed in the long-term
22 model.

23 And again, I will ask Dr. Wells if he
24 had a chance to review that update and did they -- did
25 they -- had they corrected all of those errors to your

1 satisfaction?

2 DR. SCOTT WELLS (by ZOOM): Scott 3
Wells, from the IRP.

4 Again, the documents that we received
5 said that they would do those, it wasn't part of our
6 purview, I think, to re-review their final work on
7 this or modelling. But basically their responses
8 were, as I would expect them, and I was happy with
9 them.

10 DR. KATHY RACHER: Okay, Kathy Racher
11 for the Board. Thank you.

12 And so lastly Recommendation Number 12
13 asked Diavik to consider running climate change
14 scenarios for the model and they've noted that they
15 have done some already and concluded they've done
16 enough to inform stage 1, but they will consider it
17 for stage 2, and I just want to check that that
18 response is acceptable.

19 DR. SCOTT WELLS (by ZOOM): Yes,
20 that's reasonable. It's such an uncertain -- this is
21 Scott Wells, from the IRP.

22 It's a very uncertain simulation to do,
23 the climate change scenarios and the more information
24 one has and, obviously, if you do it in stage 2 it
25 will probably be a better estimate than in stage 1.

1 DR. KATHY RACHER: Okay. Kathy
2 Racher, for the Board.

3 So one (1) thing I just wanted to
4 clarify in -- it was a response to a question that
5 EMAB asked the Environmental Monitoring Advisory Board
6 asked earlier today.

7 It was a question on a reasonable
8 worst-case scenario. I believe Dr. Tinis answered
9 this question and I got a bit confused. It felt a
10 little bit like you were making a new recommendation
11 that may have been just a bit different than the
12 conclusion that you reached in your report, which is
13 that sufficient sensitivity analysis had been done and
14 to -- to confirm the results of the model.

15 So I just wondered if you could clarify
16 that for me.

17 DR. SCOTT TINIS (by ZOOM): Yes.
18 Scott Tinis, IRP.

19 I apologize for the opacity of my
20 response earlier. I was struggling in my mind with
21 the idea of a worst worst case versus a reasonable
22 worst case.

23 And my suggestion about looking
24 stochastically at variations of input variables and
25 parameters was mainly around assessing what the worst-

1 worst case, the unforeseen worst case within the
2 boundaries of your model. You know, within the
3 boundaries of those parameters that you're actually
4 modelling.

5 The concept of a reasonable worst-case
6 I think goes back to where I believe my discussion
7 ended, which is looking at a few of those parameters
8 which have the largest effect on the outcome and which
9 were identified in previous sensitivity tests.

10 And I -- I think what I came to was
11 answering the question what would I do if it were me,
12 and I kind of couched it in -- I have unlimited time
13 and resources to do this, I might look at running a
14 stochastic analysis by varying those few important
15 parameters.

16 It was not a suggestion for either an
17 undertaking or even a -- a future approach that Diavik
18 might take.

19 The Panel's conclusion was that
20 sufficient sensitivities were performed to identify
21 what, essentially, amounts to a reasonable worst case.
22 And I think that the Panel's statement on that should
23 stand and that no further action be taken.

24 DR. KATHY RACHER: Okay, that's very,
25 very helpful. Thank you very much for that

1 clarification. I have no further questions for the
2 Panel.

3 MR. RYAN FEQUET: Masi, Dr. Racher.
4 Any other Board staff have questions at this time?

5 Okay, the Board's legal counsel has no
6 questions at this time as well.

7 Joe, to the Board, if there is any
8 questions for the Panel?

9 THE CHAIRPERSON: Mason Mantla...?

10 BOARD MEMBER MASON MANTLA: Mason
11 Mantla, Board member, I have no questions at this
12 time.

13 THE CHAIRPERSON: Rachel...?

14 BOARD MEMBER RACHEL CRAPEAU: No
15 question at this time, thank you.

16 THE CHAIRPERSON: Mike Nitsiza...?

17 BOARD MEMBER MIKE NITSIZA: Mike
18 Nitsiza, Board member. No further questions, thank
19 you.

20 THE CHAIRPERSON: Alex Nitsiza...?

21 BOARD MEMBER ALEX NITSIZA: Board
22 member, no questions at this time. Masi.

23 THE CHAIRPERSON: Okay, thank you.

24 Joe Mackenzie, no questions.

25 MR. RYAN FEQUET: Thank you, Members

1 of the Board.

2 So next on our agenda is the
3 presentation from Environment and Climate Change
4 Canada. So we'll just cue up that presentation.

5 And thank you very much to the Panel
6 members for responding to those questions. We'll talk
7 to you again tomorrow morning. And I believe there
8 was one (1) written commitment for the Tlicho
9 Government, just a reminder.

10 And we'll let you communicate through
11 Board staff to Tlicho Government if there's any
12 clarification that's required on making sure that's
13 received before tomorrow morning.

14 So Anna, take it away.

15

16 PRESENTATION BY ECCC:

17 MS. ANNA GRAHAM (by ZOOM): Thank
18 you. And thank you to the Board for this opportunity
19 to make this presentation.

20 My name is Anna Graham and I am an
21 environmental assessment coordinator with Environment
22 and Climate Change Canada. With me on Zoom here is
23 Meagan Tobin, our water quality analyst.

24 Before we get to our review of the
25 Application, I'd like to note Environment and Climate

1 Change Canada's mandate, and the acts and regulations
2 that govern that mandate.

3 Next slide, please. And next one as
4 well. Thank you.

5 In brief, Environment and Climate
6 Change Canada's mandate covers the preservation and
7 enhancement of the quality of the natural environment,
8 including water, air, soil, flora, and fauna, as well
9 as species at risk and migratory birds.

10 We are also responsible for enforcement
11 of rules and regulations and we participate in
12 environmental project reviews such as environmental
13 assessments and water licences. Next slide, please.

14 We fulfill our mandate through several
15 acts and regulations, including the Department of the
16 Environment Act, the Environmental Protection Act, the
17 provisions of the Fisheries Act that relate to
18 pollution prevention, the Migratory Birds Convention
19 Act, and the Species at Risk Act.

20 The recommendations that we make
21 regarding environmental assessments and water licence
22 applications such as this are provided in accordance
23 with program-related responsibilities and the
24 guidelines and policies of environment and climate
25 change.

1 I will pass this on to Meagan Tobin now
2 to go over our specific recommendations. Thank you.

3 MS. MEAGAN TOBIN (by ZOOM): Hi.
4 Meagan Tobin, with Environment and Climate Change
5 Canada. If we can go to the next slide, please.

6 So Environment and Climate Change
7 Canada comment 1, related to the recommendations from
8 the Panel. And specifically, Environment and Climate
9 Change Canada agreed with and reiterated the
10 Independent Review Panel's recommendation relating to
11 uncertainty of porewater characteristics.

12 As noted by the Panel, the limited data
13 set for porewater used in the fill model may
14 underestimate the actual variability.

15 And this has implications for water
16 quality in pit A418 as porewater concentration was
17 identified to be a key driver of water quality upon
18 filling. Next slide, please.

19

20 (BRIEF PAUSE)

21

22 MS. MEAGAN TOBIN (by ZOOM): Oh, back
23 one (1). Thank you. So, Environment and Climate
24 Change Canada recommended that Diavik first provide a
25 response to the Panel's recommendations, including

1 identification of which recommendations they intended
2 to adopt.

3 Environment and Climate Change Canada
4 also recommended that Diavik provide a time line for
5 implementing the porewater sampling recommended to
6 improve geochemical characterization and that this
7 characterization be completed prior to deposition of
8 PK in A418.

9 So, Diavik has not fully accepted this
10 recommendation. And while they do intend to update
11 modelling for porewater characterization, they depose
12 to defer this until stage 2 of modelling, which will
13 be completed after the pit is filled with processed
14 kimberlite rather than prior to deposition. Next
15 slide, please.

16 Environment and Climate Change Canada
17 comment 2 related to the model update approach,
18 specifically that the proposed approach does not
19 explicitly outline or provide a mechanism for
20 verification of decant water quality during deposition
21 of processed kimberlite prior to filling with
22 freshwater. Next slide, please.

23 Environment and Climate Change Canada
24 recommended that monitoring data collected at SNP
25 164588 should be compared to the predicted porewater

1 quality used in the fill model.

2 Clearly defined action levels should be
3 established for porewater and decant water such that
4 if water quality is trending outside of predictions or
5 the relevant sensitivity scenarios, that analysis of
6 implications to pit filling and mine closure be
7 analyzed.

8 If quality is sufficiently outside of
9 the previous model inputs, additional model iterations
10 may be required. In their response to interventions,
11 Diavik does acknowledge that they will have internal
12 action levels and will analyze this data -- sorry,
13 this data accordingly.

14 However, ECCC does recommend that
15 information on these internal action levels be
16 disclosed and that reviewers be provided with
17 comparisons of observed decant water to the
18 concentrations used in the fill model.

19 This will be used in order to identify
20 implications to water quality if observed decant water
21 quality is different from the model inputs. Next
22 slide, please.

23 Environment and Climate Change Canada
24 Comment 3 related to the closure criteria for re-
25 connection of put A418 to Lac de Gras. Diavik has

1 proposed monitoring leading up to dike breach and in
2 response to intervention has also elaborated on their
3 proposed approach. Next slide, please.

4 Environment and Climate Change Canada
5 recommended that Diavik develop clear criteria for
6 assessments of stability of water quality,
7 establishment of the chemocline in A418, and duration
8 of sampling such that required conditions for a dike
9 breach are well defined.

10 Specifically related to duration of
11 sampling, Diavik has proposed the duration of sampling
12 not be specified. However, Environment and Climate
13 Change Canada would reiterate that stability over time
14 will need to be demonstrated, including over seasonal
15 changes. Next slide, please.

16 Thank you for your time and for
17 allowing us to present our recommendations. And, at
18 this time, Anna and I are available to take questions.

19

20 QUESTION PERIOD:

21 MR. RYAN FEQUET: Masi, Meagan and
22 Anna. So, DDMI, you're up first. If you have any
23 questions for ECCC, please proceed.

24 MR. SEAN SINCLAIR: Sean Sinclair,
25 Diavik. Thank you, Meagan and Anna. And we have no

1 questions.

2 MR. RYAN FEQUET: Thank you, Sean.
3 GNWT, Rick and Bill and Barry, if you have any
4 questions for ECCC, please proceed.

5 MR. RICK WALBOURNE (by ZOOM):
6 Thanks, Ryan. Rick Walbourne, GNWT. I'm going to
7 pass this over to Bill Pain, who has a question for
8 Environment Canada.

9 MR. BILL PAIN (by ZOOM): Yes.
10 Thanks. Bill Pain. And I'll you know, Barry Zajdlik
11 will have a question following my question. Mine's
12 just a quick one.

13 Based on your Recommendation 2 on -- I
14 don't know what slide it was, but Recommendation
15 Number 2, it's pretty simple, but do you feel that the
16 IRP review is necessary for additional model
17 iterations if you feel water quality is outside
18 previous model inputs or scenarios?

19 MS. MEAGAN TOBIN (by ZOOM): Meagan
20 Tobin, with Environment and Climate Change Canada.

21 So, I'm not a modeller, so I don't know
22 the implications of updating the values to the fill
23 model in terms of how much work that entails and how
24 much -- if that would warrant a full review by the
25 IRP.

1 But I do think that, I guess, any
2 future model updates should be presented in general to
3 reviewers to provide more certainty that the
4 conclusions of the model, that the top 40 metres
5 remains under benchmarks are maintained.

6 MR. BILL PAIN (by phone): Excellent.
7 Sorry. Thank you. I'll pass it over to Barry Zajdlik
8 to ask a question.

9 DR. BARRY ZAJDLIK (by ZOOM): Barry
10 Zajdlik, on behalf of GNWT.

11 Meagan, does Environment Canada think
12 that porewater action levels that trigger additional
13 analyses should be part of a water licence condition?

14 MS. MEAGAN TOBIN (by ZOOM): Meagan
15 Tobin, with Environment and Climate Change Canada.

16 So, I would leave that up to the Board
17 as to whether it should be a condition. However, we
18 would like to see transparency in action levels and
19 how that monitoring data feeds into action levels.

20 As discussed by the Panel earlier
21 today, that adaptive management and how the monitoring
22 data will inform future mitigations is an important
23 aspect.

24

25

(BRIEF PAUSE)

1 MR. RYAN FEQUET: GNWT, any further
2 questions?

3 MR. BILL PAIN (by ZOOM): I don't see
4 any from Barry, so, no, that's it. Thank you very
5 much.

6 MR. RYAN FEQUET: Thank you.
7 Environmental Monitoring Advisory Board, John, Do you
8 have any questions for ECCC at this time?

9 MR. JOHN MCCULLUM (by ZOOM): Thanks,
10 Ryan. No questions on the Environment Canada
11 presentation.

12 MR. RYAN FEQUET: Thank you, John.
13 Next is the Tlicho Government. If you have any
14 questions for Environment and Climate Change Canada,
15 please proceed.

16 MR. BRETT WHEELER: Masi. Brett
17 Wheeler, Tlicho Government. I have a question about
18 the -- your recommendation for action levels.

19

20 (BRIEF PAUSE)

21

22 MR. BRETT WHEELER: Do you have any
23 suggestions on how action levels could be implemented
24 during deposition? And do you have any comments on
25 what Diavik said earlier during this Hearing, that the

1 main controls in terms of adaptive management are on
2 the volume of PK water that would be left at the time
3 of filling? Masi.

4 MS. MEAGAN TOBIN (by ZOOM): Thank
5 you. Meagan Tobin, with Environment and Climate
6 Change Canada. So for your first part in relation to
7 action levels, I think that how we would foresee it is
8 Diavik has information on what was input to the
9 current model.

10 And those -- that boundary of values
11 could be used in the form of an action level such
12 that, if observed decant water quality is trending
13 outside of what was input into the model, that that
14 would warrant taking a closer look at whether the
15 assumptions in the model and the -- the outcomes would
16 still be valid.

17 In terms of the comment on volume,
18 based on the discussions that have occurred over the
19 past two (2) days, it seems like quantifying the
20 volume during deposition may be difficult. And in
21 that case, the component of the load that we can
22 monitor easily would be the concentration and the
23 chemistry of that decant water.

24 So although we may not be able to well
25 monitor both aspects, the volume and the

1 concentration, Environment and Climate Change Canada
2 would believe that the concentration still does
3 provide valuable information.

4 MR. BRETT WHEELER: Masi. Brett
5 Wheler, Tlicho Government. No further questions.

6 MR. RYAN FEQUET: Masi, Tlicho
7 Government. Deninu Kue First Nation, DKFN, any
8 questions for Environment and Climate Change Canada at
9 this time?

10 MR. MARC D'ENTREMONT (by ZOOM):
11 Thank you. It's Marc D'Entremont, for DKFN. Thanks
12 to ECCC for its presentation, and we have no
13 questions.

14 MR. RYAN FEQUET: Thanks, Marc.
15 North Slave Metis Alliance, Adelaide,
16 do you have any questions at this time for Environment
17 and Climate Change Canada?

18 MS. ADELAIDE MUFANDAEDZA (by phone):
19 Adelaide Mufandaedza, for the North Slave Metis
20 Alliance. Thank you. We have no questions for ECCC.

21 MR. RYAN FEQUET: Thanks, Adelaide.
22 Yellowknife Dene First Nation, Sarah
23 and Ryan, any questions for ECCC -- CCC -- CCC?

24 MS. SARAH GILLIS (by ZOOM): Thank
25 you, Ryan. Sarah Gillis, YKDFN. Thank you to

1 Environment and Climate Change Canada for your
2 presentation. We have no questions at this time.

3 MR. RYAN FEQUET: Thank you, Sarah.
4 From any -- this is the opportunity for any members of
5 the public to ask any questions of Environment and
6 Climate Change Canada. We haven't received any
7 through the live Facebook feed, and I don't see anyone
8 waiting in the room, so I'm just going to check on the
9 phone if there's any questions for Environment and
10 Climate Change Canada.

11 I know Shawn Mckay from the Fort
12 Resolution Metis Government is in transit at the
13 moment, and I believe Katy was online. Just checking
14 if you guys had questions at this time.

15

16 (BRIEF PAUSE)

17

18 MR. RYAN FEQUET: Okay. We'll come
19 back if someone jumps in, but we'll move -- we'll keep
20 moving.

21 Board staff, if you have any questions
22 for ECCC, please proceed.

23 DR. KATHY RACHER: Kathy Racher, for
24 the Board. Thanks for your presentation.

25 So in Recommendation Number 1 in

1 section 3.1 of your intervention, you recommend that:

2 "Initial improvements in geochemical
3 porewater characterization be
4 completed prior to deposition of
5 PK."

6 And in Diavik's responses to those
7 recommendations, they've said they don't believe the
8 information is needed prior to deposition, but will
9 collect information during deposition. And I just --
10 and -- and then they will update the model prior to
11 filling the pit with water.

12 And I just wanted to know if that
13 proposal was accept -- acceptable in your opinion,
14 given your recommendation.

15 MS. MEAGAN TOBIN (by ZOOM): Meagan
16 Tobin, Environment and Climate Change Canada.

17 So we do accept that the proposal to
18 use observed data is -- rather than the lab scale test
19 is a reasonable approach provided that contingency
20 plans for treatment and disposable -- disposal are
21 also feasible.

22 I think, ideally, it would be
23 beneficial to have this information in advance of
24 disposal, but, yeah, I guess we would also defer to
25 the response from the IRP and how they responded to

1 IRP-9 and support that response as well.

2 DR. KATHY RACHER: Okay. Thanks very
3 much, Meagan. And just one (1) last question because
4 everybody wants to question you about your action
5 levels recommendation.

6 It just -- it wasn't clear to me in
7 your intervention -- or actually in your responses,
8 it's not crystal clear that you are talking about
9 reporting against action levels during deposition as
10 opposed to when deposition is finished, which is I
11 believe what Diavik is thinking.

12 Can you comment on that, please?

13 MS. MEAGAN TOBIN (by ZOOM): Thanks,
14 Kathy. Meagan Tobin, with Environment and Climate
15 Change Canada.

16 Yes, I can definitely clarify that we
17 were intending that, during deposition of processed
18 kimberlite, the data collected at SNP 164588 be
19 continually fed into an action level and adaptive
20 management-type system.

21 DR. KATHY RACHER: Okay. Thanks,
22 Meagan. I have no further questions.

23 MR. RYAN FEQUET: Thank you. There
24 are no questions from the Board's legal counsel at
25 this time, so I'll just look to the Board. So, Joe,

1 if you have any questions for Environment and Climate
2 Change Canada at this time for Meagan or Anna.

3 THE CHAIRPERSON: Any questions from
4 the Board? Mason...?

5 BOARD MEMBER MASON MANTLA: Mason
6 Mantla, Board member. No questions.

7 THE CHAIRPERSON: Okay.

8 BOARD MEMBER RACHEL CRAPEAU: Rachel
9 Crapeau, from the Board. No questions. Thank you.

10

11 (BRIEF PAUSE)

12

13 BOARD MEMBER MIKE NITSIZA: Mike
14 Nitsiza, Wek'eezhii Land and Water Board. (INDIGENOUS
15 LANGUAGE SPOKEN). Masi.

16 BOARD MEMBER ALEX NITSIZA: Board
17 member Alex Nitsiza. No question at this time. Masi.

18 THE CHAIRPERSON: Joe Mackenzie, Board
19 chair. No question.

20 MR. RYAN FEQUET: Thank you to the
21 members of the Board. Obviously I've been watching
22 too much "Frozen". Sorry, Anna. I said Anna. Gees.
23 Too much "Frozen".

24 So it's 11:45. We're at a predicament.
25 The GNWT is up next to present. They believe it will

1 be between twenty (20) and thirty (30) minutes for
2 their presentation.

3 I'm going to suggest we hear their
4 presentation before lunch -- I'm just looking around
5 the room -- so that people can absorb that. And we
6 can come back and we can always add an extra ten (10)
7 or fifteen (15) minutes on at the end of lunch if we
8 need to, just so we can make the best use of our time.

9 I know people's food isn't quite ready
10 yet also, so with everyone's indulgence, I would like
11 to ask the GNWT to proceed with their presentation.
12 I'm just looking around the room again and looking at
13 the chat in case there's any objections, but I think
14 that would be a great use of our time.

15 Okay. GNWT, it's all yours.

16

17 PRESENTATION BY GNWT:

18 MR. RICK WALBOURNE (by ZOOM):

19 Thanks, Ryan. Yeah, I'm thinking it'll be about
20 twenty (20) minutes, so we'll see how it goes.

21 Good morning, Mr. Chair. My name is
22 Rick Walbourne. I'm the manager of the Water
23 Regulatory Section in the Water Management and
24 Monitoring Division with the Department of ENR with
25 the Government of the Northwest Territories.

1 I'd like to thank you for the
2 opportunity to present ENR's recommendations related
3 to Diavik's Type A water licence application to allow
4 for a deposition of processed kimberlite, or PK, into
5 mine workings.

6 I'm joined here in the ENR boardroom by
7 Mr. Nathan Richea, who is the Director of the Water
8 Management Monitoring Division, and Mr. Bill Pain,
9 also from the Waters Division.

10 Joining us on the phone, we also have
11 Dr. Barry Zajdlik of Zajdlik & Associates. Also on
12 the phone we have, from GNWT Department of Justice, we
13 have our legal counsel, Mr. Rohan Brown. As well as a
14 couple of representatives from the Department of
15 Industry Tourism and Investment, Dianna Beck, Senior
16 Socioeconomic Specialist, and Dinah Elliott, Senior
17 Policy Analyst.

18 I'd also like to note, we have Mr. Tom
19 Bradbury on the line, who is the inspector for the
20 Diavik mine site.

21 Next slide, please. In our
22 presentation today, we will briefly outline ENR's
23 concerns and recommendations to the Board. As
24 identified on this slide, the topics we will be
25 covering include: consolidation model inputs, review

1 of the IRP final report, time lines and contingency
2 planning, and, finally, administrative water licence
3 condition changes. Next slide, please.

4 Mr. Chair, as part of this amendment
5 process, a Board-appointed Independent Review Panel,
6 or IRP, was required to review the updated water
7 quality monitoring performed by Diavik.

8 A key area of concern by ENR on the
9 IRP's final report are found in their recommendations
10 regarding the consolidation model. ENR and its
11 retained consultant assessed the consolidation model
12 inputs as part of the submission, as they are
13 important to correctly establish this model and
14 appropriately link other subsequent models to predict
15 conditions over time.

16 As detailed in our intervention, ENR is
17 uncertain if the samples of PK collected by Diavik to
18 support the modelling work were truly representative
19 or appropriate. This is related to the
20 characteristics of the samples collected. Next slide,
21 please.

22 Mr. Chair, this review of the model
23 inputs led to a series of questions posed to the IRP,
24 through Board staff, by ENR via email on November 9th,
25 2020. Responses were received by ENR on November

1 23rd. However, there was insufficient time to include
2 the responses or update our recommendations within the
3 intervention at that time.

4 As you are aware, ENR has received
5 further clarification of these responses from the --
6 from the IRP this morning in follow-up to their
7 presentation yesterday. We greatly appreciate the
8 effort and response from the Panel. Next slide,
9 please.

10 Mr. Chair, ENR's first recommendation
11 was a request that Wek'eezhii Land and Water Board
12 provide clarity on how the current process will allow
13 the IRP responses to be incorporated into the
14 recommendations of parties following the Hearing.

15 As noted by Board staff during the
16 opening comments yesterday, opportunities were
17 provided to allow Interveners to ask additional
18 questions of the IRP this morning.

19 ENR will consider the responses
20 provided by the Panel and will provide any updates to
21 our recommendations during the closing argument, as
22 required. Next slide, please.

23 We will now move on to -- to a
24 discussion of our assessment of the pit filling model
25 reviewed by the IRP.

1 In the Panel's final report, it is
2 noted that the geochemical testing that generated the
3 porewater source terms for the fill model is based on
4 a single sample that was measured several different
5 times in 2019.

6 This reliance on a single sample led to
7 the Panel's recommendation that there be subsequent
8 anaerobic test monitoring of randomly selected
9 porewater samples between now and PK deposition to
10 ensure that the model inputs have not varied
11 substantially prior to pit filling.

12 This recommendation is strongly
13 endorsed by ENR as outlined in the following
14 recommendation. Next slide, please.

15 Mr. Chair, ENR's second recommendation
16 is as follows. ENR recommends that DDMI accept the
17 IRP's recommendation that there be subsequent
18 anaerobic test monitoring of randomly selected
19 porewater samples between now and PK deposition to
20 ensure that the model inputs have not varied
21 substantially prior to pit filling. Next slide,
22 please.

23 The next series of recommendations by
24 ENR are related to the IRP's review of the long-term
25 A418 pit hydrodynamic and water quality model. Key

1 findings by Dr. Scott Wells of the Panel pertained to
2 uncertainty in modelling results, specifically the
3 assumptions made in the breach model.

4 This led the Panel to recommend that
5 Diavik re-assess the compatibility to the breach model
6 due to the impacts to the surface runoff dilution.

7 As noted in our intervention, this
8 recommendation by the Panel may, in retrospect, be --
9 be more important than previously thought due to the
10 possible proximity of aluminum, cadmium, manganese,
11 and copper concentrations to AEMP benchmarks and the
12 unknown degree of precision in model predictions.

13 Another analog of potential interest in
14 the pit lake is mercury, due to its potential for
15 biomagnification. Mercury in the A418 pit lakes has
16 not been modelled and was not measured in PK porewater
17 from the samples submitted to the University of
18 Alberta by Diavik.

19 Diavik has noted that they believe that
20 the mine is not a source of mercury input to Lac de
21 Gras, as mercury is not a constituent in mine affluent
22 discharged to the lake.

23 However, ENR notes that, in 2019,
24 mercury was detected in snow, the PKC pond, non-
25 discharged SNP locations including collection ponds,

1 and in affluent discharge to Lac de Gras.

2 Also, mercury was still detectable in
3 dilute affluent at the edge of the mixing zone in Lac
4 de Gras, but not at any more distant AEMP sampling
5 stations.

6 Given that mercury biomagnifies and
7 that biomagnification can be exacerbated by
8 eutrophication, which is occurring at least in the
9 Diavik -- Diavik near filled area, ENR has included
10 recommendations on this topic. Next slide, please.

11 Mr. Chair, ENR makes the following set
12 of recommendations on this topic.

13 ENR recommends that DDMI closely
14 monitor and report on copper, manganese, cadmium, and
15 aluminum concentrations during filling of the pit --
16 of the pits to better inform future modelling updates
17 and to better assess impacts to Lac de Gras from the
18 pit lakes.

19 Mr. Chair, ENR understands that DDMI
20 has agreed to this recommendation in their responses
21 to interventions.

22 Continuing with ENR's recommendations,
23 ENR recommends that DDMI estimate the total mercury
24 loads to Lac de Gras from the pit lakes.

25 And ENR recommends that DDMI estimate

1 the total mercury loads to Lac de Gras by SNP sample
2 and provide a timed series of loads for the past ten
3 (10) years of operation. This could be compared to
4 estimates of mercury loads to Lac de Gras from
5 receiving watersheds to assess the relative
6 contribution of DDMI's operations mercury loads to Lac
7 de Gras and estimates of mercury loads to Lac de Gras
8 from the pit lakes to assess the contribution relative
9 to historical loadings from operations. Next slide,
10 please.

11 Mr. Chair, ENR will now discuss our
12 recommendations regarding the time lines and
13 contingency planning of the project.

14 The IRP has made various
15 recommendations regarding items that should be
16 completed prior to deposition of PK to the mine
17 workings that will lead to updated model input
18 parameters and updated model productions. It is
19 unclear to ENR whether there is adequate time to
20 complete the recommendations of the Panel before
21 Diavik plans to deposit PK to the mine workings.

22 Based on Diavik's response to
23 interventions, ENR now better understands the time
24 line for the project, including the clarification that
25 a dam raise decision must be finalized by Diavik by

1 late 2020, rather than late '21 -- 2021.

2 ENR also understands that Diavik has
3 made the commitment last month for the procurement of
4 pipeline material. Next slide, please.

5 However, Mr. Chair, ENR is still of the
6 opinion that the completion date for the collection of
7 sufficient and relevant model input data to achieve
8 statistical design criteria should be such that
9 sufficient time is available for public review of
10 collected data, updated modelling, review of updated
11 modelling by the Panel, review of Panel conclusions
12 and recommendations by interested parties, as well as
13 time for the Panel to respond to comments and
14 questions from interested parties.

15 This review of information should occur
16 prior to the deposition of PK and any mine workings
17 consistent with the Review Board's measure 3A. Next
18 slide, please.

19 As such, ENR has the following two (2)
20 recommendations on this topic.

21 Within their response to interventions
22 ENR recommended that DDMI provide timelines related to
23 responses to the IRP recommendations. Specifically,
24 timelines should include when the compressibility
25 testing and assessment of consistency limits, liquid

1 limit and plastic limit, will be completed and when
2 porewater characterization will be completed.

3 As well, ENR recommends that DDMI and
4 the Board commit to a completion date for the
5 collection of sufficient and relevant model input data
6 to achieve statistical design criteria. This date
7 should allow sufficient time for public review of
8 collected data, updated modelling, review of updated
9 modelling by the Panel, review of Panel conclusions
10 and recommendations by interested parties, and time
11 for the Panel to respond to comments and questions
12 from interested parties.

13 This date should be no later than the
14 latter part of 2021. Next slide, please.

15 Mr. Chair, ENR will now discuss our
16 recommendations regarding administrative water licence
17 conditions changes, the first one being related to a
18 Surveillance Network Program or SNP.

19 Diavik is proposing one (1) season of
20 two (2) monthly bio profiles and quarterly sampling of
21 several analytes of the pit lakes to demonstrate a
22 stable chemocline prior to dike breaching.

23 The proposed sampling plan by DDMI
24 should be modified to collect three (3) instead of two
25 (2) samples within the top 40 metres as -- as that is

1 the depth for which current A&P benchmarks must be
2 met.

3 Two (2) samples over a depth of 40
4 metres may not capture concentration effects
5 associated with the thermocline in the pit lake.
6 Next slide, please.

7 As such our recommendation is as
8 follows. ENR recommends that DDMI amend the monthly
9 bio profiles pit lake sampling program so that three
10 (3) samples are collected instead of two (2).

11 It is recommended that one (1) sampling
12 event occur immediately after the spring freshet, and
13 the second occur immediately after spring turnover.
14 Next slide, please.

15 Mr. Chair, we would now like to move on
16 to our next topic regarding changes to water licence
17 conditions.

18 ENR notes that the current conditions
19 for assessing and approving when the dikes may be
20 breached after PK has been deposited to the pits and
21 back flooded are insufficient. Clear criteria are
22 required so that the Board and inspector can make an
23 informed decision on when to breach the dike after the
24 required monitoring period has elapsed.

25 These criteria would be used to design

1 a pit lake sampling program that would be captured in
2 appropriate water licence conditions.

3 ENR notes that DDMI has provided some
4 of this information in their response to
5 interventions, however, ENR needs to consider these
6 responses in further detail, and we will provide
7 clarification on our position in our closing
8 arguments. Next slide, please.

9 Mr. Chair, our recommendation is as
10 follows: In their response to interventions ENR
11 recommended that DDMI provide clear criteria for
12 assessing and approving when the dikes may be breached
13 after PK has been deposited to the pits and back
14 flooded. Next slide, please.

15 Mr. Chair, ENR noted that some of the
16 information requests, attachments by DDMI were marked
17 as draft.

18 ENR has reviewed Diavik's response and
19 understands that while some were marked as draft,
20 these are to be considered final by the Board. If
21 this is correct, ENR respectfully removes its
22 Recommendation Number 10 on this topic as it can be
23 considered resolved. We can confirm this in our
24 closing arguments as well. Next slide, please.

25 Mr. Chair, our final topic is about

1 cultural water quality criteria. ENR noted that
2 updated water quality modelling must demonstrate that
3 both ecological, that is AEMP benchmarks, and cultural
4 water quality criteria are met prior to the deposition
5 of PK in mine workings.

6 The requirement to demonstrate that
7 both ecological and cultural water quality criteria
8 will be met before depositing PK into mine workings as
9 required by measure 3A has the same line -- has the
10 same timeline as measure 2 which states that cultural
11 use criteria will be approved before Diavik puts
12 processed kimberlite into the pits and underground.
13 Next slide, please.

14 Mr. Chair, our final recommendation is
15 the following: In their response to interventions ENR
16 had recommended that DDMI provide an update on the
17 progress of the development of the cultural water
18 quality objectives and how these water quality
19 objectives will be incorporated into water licence
20 plans and submissions.

21 ENR does note that DDMI has addressed
22 the recommendation partly in their responses to
23 interventions on the progress of the objectives,
24 however, ENR is still uncertain how these water
25 quality objectives will be incorporated into water

1 licence plans and submissions. Next slide, please.

2 That concludes our presentation, and
3 ENR will be happy to take questions I assume after
4 lunch. Thank you.

5 MR. RYAN FEQUET: Well, you guys are
6 welcome to hang out in your boardroom, but we're going
7 to take lunch. Thank you very much, ENR.

8 As we agreed let's -- let's recess and
9 everyone will reconvene, try to start right up at
10 1:15. So if everyone could try to be back a couple
11 minutes before that, that would be great, and it'll be
12 the opportunity in the agenda to ask questions of the
13 GNWT. Thank you, everyone. Masi.

14

15 --- Upon recessing at 12:03 p.m.

16 --- Upon resuming at 1:20 p.m.

17

18 THE CHAIRPERSON: Okay, we'll start --
19 resume.

20 MR. RYAN FEQUET: Thanks, Joe. Okay,
21 guys, we're just coming back. I'm just making sure
22 the -- the GNWT, Rick and Bill and Nathen, you guys
23 are back with us?

24 MR. RICK WALBOURNE (by ZOOM): Yeah.
25 Hi. It's Rick here. We're here. I'm just trying go

1 get us up. We should be on there, Ryan. Yeah.

2

3 QUESTION PERIOD:

4 MR. RYAN FEQUET: Thanks, guys. Okay.

5 I hope everybody had a good lunch. So, this is the
6 opportunity on the agenda for parties to ask questions
7 of the GNWT.

8 First off, we have DDMI. So, Sean and
9 Gord, please take it away. And, again, if you -- if
10 anybody needs to reference a certain slide, just let
11 us know, and we'll -- we'll adjust it accordingly.

12 MR. SEAN SINCLAIR: Sean Sinclair,
13 Diavik. Thank you, GNWT. We have no questions at
14 this time.

15 MR. RYAN FEQUET: Thank you, Sean.
16 Environment and Climate Change Canada, do you have any
17 questions for GNWT at this time?

18 MS. ANNA GRAHAM (by ZOOM): Anna
19 Graham, Environment and Climate Change. We have no
20 questions. Thank you.

21 MR. RYAN FEQUET: Thank you.
22 Environmental Monitoring Advisory Board. Mr.
23 McCullum, do you have any questions for the GNWT at
24 this time?

25 MR. JOHN MCCULLUM (by ZOOM):

1 Charlie...?

2 MR. CHARLIE CATHOLIQUE (by ZOOM): Hi. 3
Good afternoon. It's Charlie Catholique here in 4
Yellowknife here, EMAB boardroom. Thank you, Mr. 5 Chair.
I'd like to ask a question to ENR.

6 MR. RYAN FEQUET: Yes. Go ahead.

7 MR. CHARLIE CATHOLIQUE (by ZOOM):
8 Okay. It's about that mercury in the fish. I wonder
9 if that's going to be a continuation on that mercury
10 at the mine site.

11 And, also, when's the last time they
12 did that -- that fish tasting? We usually have
13 yearly, but I think there's a big gap in-between now,
14 hey. Like, I don't know how often they do that now.

15 MR. RYAN FEQUET: Thanks, Charlie.
16 We'll give Diavik an opportunity to respond to that --
17 or GNWT, sorry.

18 MR. RICK WALBOURNE (by ZOOM): Rick 19
Walbourne, GNWT. Yeah, I was hoping you were going to 20
give that to Diavik, Ryan.

21 So, I guess just to take a step back a
22 little. Rick Walbourne, ENR. So, the comments that
23 were made in our presentation were I think more of a
24 water quality in that mercury has been detected in --
25 in different water monitoring, so we weren't specific

1 to speaking to fish tissue.

2 Regarding mercury and fish tissue, so
3 that would be -- fish tissue would be a component of
4 the Aquatic Effects Monitoring Program through
5 reaction levels within the AMP if certain levels of
6 mercury were observed in the fish tissue that would
7 trigger different adaptive management.

8 I don't know offhand of -- I don't have
9 the mercury and tissue results in front of me. Diavik
10 may have more information on the specific monitoring
11 results of their AEMP.

12 And, similarly, regarding the fish
13 tasting at Diavik, GNWT wouldn't be directly involved
14 with that, so I'm not sure if the Land and Water Board
15 or Diavik can provide any information on the -- the
16 past fish tasting or when the next one might be
17 scheduled, but ENR aren't directly involved with fish
18 monitoring -- or fish tasting programs at the mine
19 site. Thanks.

20 MR. CHARLIE CATHOLIQUE (by ZOOM):
21 Okay.

22

23 (BRIEF PAUSE)

24

25 MR. RYAN FEQUET: Gord or Sean, did

1 you want to take a first crack at that, about the fish
2 tasting?

3

4 (BRIEF PAUSE)

5

6 MR. GORD MACDONALD (by phone): Gord
7 MacDonald, with Diavik. Sorry, Ryan, I wasn't aware
8 that questions were coming to us at this point. And
9 we're -- we're happy to engage with EMAB. We meet
10 with them regularly. We can provide that information
11 to them. I don't have it at hand.

12 MR. RYAN FEQUET: Yeah, no worries.
13 Charlie just asked the question. And we don't have it
14 off the top of our cuff, so I just thought you might.
15 We're happy to get back to you on that, about the fish
16 tasting, Charlie.

17 MR. GORD MACDONALD (by ZOOM): Sean -
18 - Sean might know though when the next -- when the
19 next AEMP camp is. Do you know, Sean?

20 MR. SEAN SINCLAIR: Yeah. Sean
21 Sinclair, Diavik. So -- so, the last AEMP camp where
22 they did the fish tasting was 2018, and it's planned
23 again this coming summer, 2021.

24 MR. GORD MACDONALD (by ZOOM):
25 Thanks.

1 MR. CHARLIE CATHOLIQUE (by ZOOM): 2
Mr. Chair, thank you very much. And thanks, Gord.

3 MR. JOHN MCCULLUM (by ZOOM): No
4 further questions from EMAB. John McCullum.

5 MR. RYAN FEQUET: Thanks, John.
6 Thanks, Charlie. Next up is the Tlicho Government.
7 If you have any questions for GNWT, please proceed.

8 MR. BRETT WHEELER: Masi. Brett
9 Wheler, for the Tlicho Government.

10 The first question is about ENR's
11 Recommendation Number 1. What are the forthcoming IRP
12 responses about? Can you give us a sense of the
13 implications of these questions and responses and are
14 the questions on the public record? Masi.

15

16 (BRIEF PAUSE)

17

18 MR. RICK WALBOURNE (by ZOOM): Rick 19
Walbourne, ENR. Thanks, Brett. So, as we -- as I 20
mentioned this morning, so we had -- we had put some 21
questions to the IRP a while back, and some responses 22
were provided.

23 So, most of what we were speaking to in
24 the recommendation were the -- were the topics that we
25 discussed and -- and cross-examined the Independent

1 Review Panel on this morning, so those were the
2 topics.

3 But I'll -- I'll pass it over to Barry
4 if -- if he has anything more to add on any
5 information he was expecting from the IRP.

6 Barry, do you have anything to add to
7 that or in response to Brett?

8 DR. BARRY ZAJDLIK (by ZOOM): I'm not
9 sure whether the response that the IRP presented to
10 GNWT was made public. Do -- do you know the answer to
11 that?

12

13 (BRIEF PAUSE)

14

15 MR. RICK WALBOURNE (by ZOOM):
16 Thanks, Barry. No, we -- we're not sure on -- we're
17 not sure on that, so -- and to Brett's answer, we're
18 not sure if the information has -- has been made
19 public.

20 DR. BARRY ZAJDLIK (by ZOOM): So, if 21
-- if it's appropriate, I could go through the
22 questions and the responses very briefly or, in the --
23 in the interest of time, we could perhaps send that
24 along. I'm not sure. I'm looking to the Board for
25 direction on that.

1 MR. RYAN FEQUET: Sure. Ryan -- Ryan
2 here. Any written questions and the responses from
3 the Panel that were received in advance are or will be
4 very shortly placed on the public registry, so they
5 will be part of the record for this proceeding.

6 That whole process, again, just to
7 reiterate, was to help give the Panel a heads up on
8 what kind of questions they might be receiving and
9 help them prepare and, also, in case it informed
10 interventions or any lines of questioning that might
11 have happened during the Hearing.

12 So, to your answer from the Tlicho
13 Government question, they -- they will be -- all of
14 that will be on the record.

15 MR. BRETT WHEELER: Okay. Masi for
16 that. Brett Wheeler, Tlicho Government.

17 During your presentation you mentioned
18 the status of a few of your recommendations that
19 Diavik had accepted. Masi for those updates.

20 Now that Diavik has responded to your
21 recommendations and the Independent Review Panel
22 recommendations, do you have any major outstanding
23 concerns with Diavik's responses? Masi.

24 MR. RICK WALBOURNE (by ZOOM):
25 Thanks, Brett. Rick Walbourne, GNWT. I'll provide a

1 first response. And then I'll see if Barry has
2 anything specifically on -- on technical -- on the
3 technical side.

4 So, we do appreciate the responses that
5 were received from Diavik as well as the Independent
6 Review Panel; that did provide us some additional
7 information to help us make an assessment.

8 I guess, overall, one (1) of the, if
9 any, major concerns we still have are I think a
10 perceived lack of contingency. So, a question that we
11 put to Diavik yesterday was contingency planning
12 around PK deposition in and of itself if it couldn't
13 go into the pit.

14 It sounded from their responses
15 yesterday that there wasn't really any contingency
16 right now on managing that PK if this Application was
17 not approved.

18 So what we're looking at next then is
19 potentially depositing PK into the pit without the
20 certainty we would probably like to see with the
21 modelling results which were -- as you could see from
22 our intervention and from some of the questions from -
23 - from Barry where we were going with that to try to
24 get some additional certainty.

25 So I think our major concern at this

1 point is it's not clear to us -- should the PK be
2 deposited into the mine workings and future modelling,
3 Stage 2 modelling, illustrate that the water quality
4 is not going to reach the benchmarks that we'd like to
5 see, the AEMP benchmarks or potentially the cultural
6 criteria which are yet to be developed.

7 It's not clear to us what options exist
8 for managing that PK in the pit should that future
9 modelling show us that the results are not favourable.

10 Barry, did you have anything to add to
11 that from a technical standpoint or from the
12 modelling?

13 DR. BARRY ZAJDLIK (by ZOOM): Yeah. 14
14 Well, there's one (1) recommendation that Diavik did 15 not
15 adopt, and that's the recommendation to put out -- 16 put
16 out a break -- breakdown of mercury contributions 17 to Lac
17 de Gras from the pit lake versus from
18 operations and contextualize all that in terms of what
19 is actually loaded to Lac de Gras through the
20 different watersheds.

21 The hope is that we can lay this to
22 rest very easily and say that mercury is not an issue,
23 and all that would require is measurement of mercury
24 in porewater and then doing those calculations.

25 It's a fairly straightforward exercise

1 at least to estimate the loads 'cause that comes right
2 out of the SNP data, so -- and we know the volume, so
3 it's straightforward and -- and easy to dismiss. And
4 hopefully it can be dismissed very easily.

5 Another question or outstanding issue
6 is -- is disagreement on what comprises an adequate or
7 satisfactory Phase 1 model. Obviously, Diavik is --
8 is asserting that the model is sufficient to provide
9 evidence that deposition of PK should be allowed.

10 We still have concerns, and the
11 concerns are those that were in part of my line of
12 questioning with the IRP. And in fact the IRP
13 themselves recommended that additional monitoring
14 occur prior to deposition.

15 We agree with that. We still agree
16 with that. I can go through some technical reasons
17 for that or I can just let it rest for now.

18 MR. BRETT WHEELER: Masi for that.
19 It's Brett Wheler, Tlicho Government. That's --
20 that's good for our purposes for now. Thank you,
21 Barry. And thank you. You also answered my question
22 about mercury.

23

24

(BRIEF PAUSE)

25

1 MR. BRETT WHEELER: Next question is:
2 How much of an issue do you think the uncertainty in
3 porewater quality is? And in particular, how much do
4 you think that uncertainty can be mitigated by Diavik?

5 MR. RICK WALBOURNE (by ZOOM): Rick
6 Walbourne, GNWT. Thanks for that, Brett. Yeah, I
7 think -- first of all, we think that it's something
8 that, you know, could have been or should have been a
9 future considered by the Panel, but we'll -- we'll
10 take a stab at it.

11 That's one (1) of the reasons I think
12 we're looking for additional modelling and additional
13 certainty in the modelling. Right now, the degree of
14 certainty is unknown, so it's difficult to quantify
15 what the uncertainty is or how much that would be
16 impacted by the removal of water.

17 One (1) thing we would add is to my
18 earlier comment regarding outstanding concerns, and
19 one (1) of those were obviously lack of contingency or
20 options that could be used should the modelling appear
21 unfavourable.

22 So, in our opinion, the -- the process
23 you described there, Brett, by removing that water
24 prior to backfilling, I think those are some of the
25 options we'd like to see explored through additional

1 contingency planning. So maybe the removal of that
2 decant water would be something that could fall into
3 that category of additional contingencies.

4

5 (BRIEF PAUSE)

6

7 MR. BRETT WHEELER: Masi for that.
8 Brett Wheler, Tlicho Government.

9 A different type of question: Regarding
10 Measure 6 of the Environmental Assessment which
11 requires GNWT to support Indigenous governments to
12 develop community-specific cultural well-being
13 indicators to monitor and evaluate cultural well-
14 being, can you report on efforts to implement this
15 measure? Masi.

16 MR. RICK WALBOURNE (by phone):
17 Thanks, Brett. Rick Walbourne, from GNWT. I'll pass
18 that over. I believe there are some representatives
19 on the line from Department of ITI who can provide you
20 a response to that question.

21 MS. DIANNA BECK (by ZOOM): Dianna
22 Beck, ITI. So Measure 6 will be implemented in three
23 (3) main stages.

24 The project is currently in the
25 planning phase where we're working -- where the

1 working group will draft the necessary documents to
2 hire an independent consultant and to reach out to
3 Indigenous Interveners to create a technical advisory
4 panel that will review the engagement plan produced by
5 the independent contractor.

6 The second phase will be comprised of
7 the work of the independent contractor collecting
8 data, engaging with the communities, and formulating
9 recommendations.

10 And then the final phase will be
11 drafting up a final report of recommendations.

12 So invitations to participate in that
13 technical advisory panel will be going out early in
14 the new year. Thank you.

15

16 (BRIEF PAUSE)

17

18 MR. BRETT WHEELER: Masi. Brett
19 Wheler, Tlicho Government. No further questions.

20 MR. RYAN FEQUET: Thank you, Brett.
21 Masi to the Tlicho Government.

22 Just to respond before we move on, to
23 answer the question from the Tlicho Government, on
24 November 25th, the interventions were circulated, and
25 along with that was a hyperlink to the Wek'eezhii Land

1 and Water Board's public registry on which you can
2 find the written questions from both ENR and EMAB and
3 responses from the Independent Review Panel. The
4 document is called "Diavik Water Licence Amendment PK
5 to Mine Workings, Panel Responses to Questions,
6 November 23rd_20."

7 So Board staff are happy to help
8 anybody find that if they're looking for that, but it
9 was sent out on November 25th.

10 So now we'll move on to the Deninu Kue
11 First Nation, DKFN, Marc, if you have any questions
12 for GNWT at this time.

13 MR. MARC D'ENTREMONT (by ZOOM):

14 Thank you. Marc D'Entremont here, for the DKFN. I do
15 have a couple of questions.

16 So again, in reference to the
17 information you presented on total mercury, can you
18 comment on mercury methylation in the project area,
19 and whether this is an item that land users should be
20 concerned about and subsequently addressed in the
21 water licence amendment?

22

23 (BRIEF PAUSE)

24

25 MR. RICK WALBOURNE (by ZOOM):

1 Thanks, Marc, for your question. Rick Walbourne,
2 GNWT. So, yeah, I think I'll kind of refer back to
3 our previous response.

4 So the mercury we did reference in our
5 intervention was regarding various SNP stations
6 including surface runoff. I think it's our
7 understanding that some of the methodlization (sic)
8 would be covered off currently in the AEMP. So if
9 that is occurring and we'll potentially see it in the
10 -- start to move up the aquatic environment, hopefully
11 that will be picked up in the -- in the AEMP.

12 Barry, did you have anything to -- to
13 add to that, regarding that question?

14 DR. BARRY ZAJDLIK (by ZOOM): Barry
15 Zajdlik, no, not at this time, thank you.

16 MR. MARC D'ENTREMONT (by ZOOM): Marc
17 D'Entremont from DKFN. Okay, great. Thank you for
18 that response.

19 I did have another question, but it was
20 around Measure 6, and Brett asked the exact same
21 question that I was going to ask, so thank you Brett
22 for that and thanks to the GNWT for that response as
23 well. So we have no further questions.

24 MR. RYAN FEQUET: Thank you, Marc, and
25 I suspect Brett stole that question from everybody's

1 list.

2 Okay, moving on, the North Slave Metis
3 Alliance, Adelaide?

4 MS. ADELAIDE MUFANDAEDZA (by ZOOM):

5 Good afternoon. My question again was on
6 Recommendation 6 and that has been answered. So no
7 further questions. Thank you.

8 MR. RYAN FEQUET: Thank you, Adelaide.
9 The Yellowknife Dene First Nation? Sarah...?

10 MS. SARAH GILLIS (by ZOOM): Thank
11 you, Ryan. Sarah Gillis, Yellowknife Dene First
12 Nation. Thank you, GNWT for your presentation. No
13 questions at this time.

14 MR. RYAN FEQUET: Thank you, Sarah.
15 The Fort Resolution Metis Government is here in the
16 room and online with us. So I just want to check with
17 them if there is any questions for GNWT at this time?

18 MS. KATY DIMMER (by phone): Hi, this
19 is Katy Dimmer, with Fort Resolution Metis Government.
20 We do have a couple of questions.

21 MR. RYAN FEQUET: Sure, and if Pido
22 could just make sure that mic is on, that wireless mic
23 too, guys. Yes, go ahead, Katy.

24 MS. KATY DIMMER (by phone): Thank
25 you.

1 Just as a follow-up in their response
2 to the timelines and updates on Measure 6, thank you
3 for that.

4 I just wanted to confirm that there
5 will be capacity provided for First Nation groups like
6 Fort Resolution Metis Government to participate?

7 MR. RICK WALBOURNE (by ZOOM): Thanks
8 for that question. Rick Walbourne, ENR. I'll pass it
9 over to representatives from ITI.

10 MS. DIANNA BECK (by ZOOM): Dianna
11 Beck, ITI. Yes, there will be, once we send out that
12 request for participation early in the new year, the
13 Indigenous Interveners that respond back willing to
14 participate, we will be entering into contribution
15 agreements for that capacity. Thank you.

16 MS. KATY DIMMER (by phone): Thank you
17 for that. Also related to this I know in your
18 presentation you had spoken to your recommendation
19 that it be finalized for water -- cultural water
20 quality objectives prior to deposition.

21 I was just wondering if you could speak
22 to how that information that Diavik is collecting will
23 connect with your work on monitoring project-specific
24 and cumulative effects to cultural use, and if
25 anything from your project needs to be in place

1 related to those objectives before deposition.

2 MR. RICK WALBOURNE (by ZOOM): Rick
3 Walbourne, ENR. Thanks for that. We'll pass this
4 over to ITI again, regarding Measure 6.

5 MS. DIANNA BECK (by ZOOM): Sorry,
6 can I get you to repeat the question?

7 MS. KATY DIMMER (by phone): Sure. I
8 was wondering if you could provide a description of
9 the timelines for your project and -- as well as how
10 you expect the findings of Diavik taking the lead on
11 the identification of cultural water quality
12 objectives and how those findings will feed into
13 developing the -- the follow-up program for measuring
14 potential impacts to cultural use.

15 MS. DIANNA BECK (by ZOOM): Okay, for
16 the timeline we have already begun the process to
17 fulfill the requirement.

18 The timing of the activities is
19 expected to reach completion about mid-July. So we'll
20 work with the Indigenous Interveners to ensure that
21 the timeline is reasonable and our commitment would be
22 to report progress by June 5th, 2021.

23 MS. KATY DIMMER (by phone): Thank you
24 for that. Just in the follow-up, is there any
25 expectation that any preliminary results from your

1 work will have connections to the finalization of
2 Diavik's cultural water quality objectives, and are
3 you working with Diavik to find synergies and align
4 those timelines?

5 MR. RICK WALBOURNE (by ZOOM): Rick
6 Walbourne, ENR. I'll just -- yes, ITI can go ahead
7 and answer on that follow up.

8

9 (BRIEF PAUSE)

10

11 MS. DIANNA BECK (by ZOOM): Sorry, 12
I'm having trouble getting my mute button to unmute.

13 So what we -- the plan is to be able to
14 work with Indigenous Interveners and collaborate with
15 Diavik along throughout the process, where appropriate
16 and on the -- the final report or recommendations.

17 But that will be done in collaboration
18 with the Indigenous Interveners to ensure that that's
19 done in an appropriate time and place throughout the
20 process.

21 MS. KATY DIMMER (by phone): Okay,
22 thank you. No further questions, Mr. Chair.

23 MR. RYAN FEQUET: Thank you, Katy.
24 Sean, I know the -- we got the mic working for you
25 there, just checking in, did you have any questions at

1 this time?

2 MR. SEAN SINCLAIR: Nothing further at
3 this time.

4 MR. RYAN FEQUET: Thank you, Sean.
5 Any other questions from the members of the public?

6 While we're just double-checking on
7 that, maybe we'll proceed. Any questions from Board
8 staff or GNWT?

9 DR. KATHY RACHER: Hi there, it's
10 Kathy Racher, for the Board. I have some questions
11 for the GNWT.

12 For your Recommendations 3 and 4, which
13 relate to estimating mercury loads, in your response
14 to a question earlier, I believe Barry mentioned the
15 need to have a sample of porewater for the
16 concentration of mercury.

17 And I just wondered if you had
18 considered appendix 5 to Diavik's response to
19 interventions where they -- they gave a -- I believe
20 it was ten (10) years of data on the concentrations of
21 mercury measured in PKC pondwater samples and whether
22 that has an influence.

23 All of those concentrations, most of
24 them were below detection. If you could just comment
25 on that.

1 MR. RICK WALBOURNE (by ZOOM): Rick 2
Walbourne, GNWT. Thanks for your question, Kathy, 3
I'll pass that over to -- to Barry to provide a 4
response. Barry?

5 DR. BARRY ZAJDLIK (by ZOOM): Barry
6 Zajdlik, on behalf of GNWT.

7 Yes, we did look at those data. Those
8 data pertain to dissolved mercury, not total mercury.
9 So the total mercury concentrations will be higher.

10 We did request total mercury data from
11 Diavik and they did provide that to GNWT. And when I
12 looked at that, the concentrations were definitely
13 higher and I think some of them were approaching the
14 normal range for the -- that was set for Lac de Gras.

15 The other thing to think about when
16 looking at PKC porewater -- or pondwater, rather, is
17 that we don't know what the contribution is from the
18 kimberlite versus site run-off versus aerial
19 deposition. And so it -- it's a bit of a mixed bag
20 when we look at those numbers, right? The bottom line
21 is that it's there and its detectible.

22 DR. KATHY RACHER: Kathy Racher, for
23 the Board.

24 So in terms of -- of this -- of your
25 recommendations to estimate total mercury loads to Lac

1 de Gras, including from the pit lakes, are you
2 suggesting those be done before -- prior to deposition
3 of PK?

4 Or is that something more applicable to
5 stage 2 modelling, when we will have actual
6 concentrations of porewater -- concentration of
7 constituents in porewater before the -- the next
8 update of the model in stage 2?

9 DR. BARRY ZAJDLIK (by ZOOM): Barry
10 Zajdlik, on behalf of GNWT.

11 I think that, at this point in time, we
12 are still recommending that porewater be characterized
13 prior to deposition. And so, there is the
14 opportunity, if that adoption -- or that
15 recommendation is adopted, to also obtain mercury
16 data.

17 MS. KATHY RACHER: Kathy Racher, for
18 the Board.

19 In your Recommendations 6 and 7, you're
20 asking for Diavik to provide time lines related to
21 responses to the IRP recommendations. And I assume
22 it's all the recommendations relevant to additional
23 model input data or additional sampling.

24 Diavik's response to those questions
25 was, basically, that -- I mean, they gave their

1 responses to the Panel's recommendations, each one
2 specifically. And predominantly, their answer was
3 that they would be collecting additional data on all
4 of these things during deposition of the PK into the
5 pits. As that would give them the most certainty as
6 to the answer. Otherwise, it's -- it's just more
7 modelling.

8 And I just wanted to know how you felt
9 about those responses to your Recommendations 6 and 7?

10 MR. RICK WALBOURNE (by ZOOM): Rick
11 Walbourne, GNWT. Just give us a second here. We'll
12 get right back to you, Kathy.

13

14 (PAUSE)

15

16 MR. NATHEN RICHEA (by ZOOM): Thank 17
17 you, Mr. Chair. It's Nathen Richea, with Environment 18
18 and Natural Resources. And thank you for the
19 question.

20 I guess, we took a bit of time here to
21 do a bit of a huddle. I guess, the -- the way I would
22 answer the question is the Application before us is to
23 approve the deposit of PK into the open pits and --
24 and the mine workings. And the only modelling that's
25 available today is the first phase of that modelling.

1 And some of the concerns that we've
2 addressed and raised in questioning of the -- of the
3 Panel, as well as in our recommendations for the
4 Board's consideration, is there is some uncertainty in
5 the modelling that's been conducted to date.

6 Going forward, our recommendation is
7 that there is additional data being collected and
8 potential additional modelling runs before PK is put
9 into the pits.

10 And the idea of that additional
11 monitoring and modelling is to ensure that, once PK is
12 put in the pits, we are assured that it meets the
13 objectives at the end of operations and that the
14 criteria or objectives in -- in the pit lake --
15 cultural and other -- are appropriately met at
16 closure.

17 If that modelling suggests that -- if
18 phase 2 modelling suggests that those objectives won't
19 be met, then the contingency aspect of this process is
20 critically important to ensure that the measures are
21 being implemented as through our -- through this
22 process and has approval to -- to move PK into the --
23 into the open pits.

24 So, I guess, getting back to the
25 question on whether we feel that more modelling is

1 needed prior to putting PK into pits, I think it's
2 important for us to understand with full clarity what
3 the implications of putting the PK into the pits are.

4 And based on the modelling that's
5 available to date, I think there's some uncertainty on
6 whether that's sufficient to make a definitive answer
7 on whether the PK should be put into the pits. Thank
8 you.

9 MS. KATHY RACHER: Kathy Racher, for
10 the Board.

11 When we heard from the Panel earlier,
12 Dr. Wells talked about how, essentially, uncalibrated
13 models are not uncommon when pursuing projects. Not
14 necessarily exactly like this one, but in projects in
15 general.

16 So I -- I guess, I'm trying to get a
17 sense of how you ever get absolute certainty or how
18 the GNWT views enough certainty? You know, when --
19 when is a model -- a model can never give you a
20 hundred percent certainty.

21 So how do you -- how do you judge when
22 it's enough?

23 (PAUSE)

24

25 MR. RICK WALBOURNE (by ZOOM): Thank

1 you, Kathy. Rick Walbourne, GNWT.

2 I'm going to pass this over to Barry to
3 provide some more information on that. Thanks.

4 DR. BARRY ZAJDLIK (by ZOOM): Barry
5 Zajdlik, on behalf of GNWT.

6 First off, I'll say that I was very
7 comforted by the response that we got this morning
8 from Dr. Wells with respect to the calibration.

9 What I heard was that the boundary
10 conditions really drive the -- the model and that the
11 calibration -- usually a bit of tweaking at the end.
12 So I'm much less concerned with the calibration issue,
13 in terms of certainty and uncertainty.

14 What we don't have certainty on,
15 though, is the porewater composition. We -- we have a
16 sample size of one for the porewater -- the PK that
17 actually represents what could be deposited. And even
18 to that, we found out yesterday that Mr. MacDonald
19 feels that that -- that ore sample is not really
20 representative either.

21 So that's -- that's the source of
22 uncertainty. We're not sure that the model inputs
23 that were used or contextualized by the available data
24 because we're not sure of the relevance of the
25 available data.

1 So now, coming back full circle to your
2 question about how to assess adequacy, that's by
3 understanding variability. And we can't do that with
4 a sample size of one. We can't put narratives around
5 the degree of acceptable variability that we're
6 willing to accept.

7 Typically, when I venture off into the
8 unknown like this, I would look at a parameter and
9 say, you know, I'm using this for modelling. It's a
10 driver of something. I want to be plus or minus 50
11 percent for that parameter.

12 And then, looking at a few samples, you
13 could estimate the sample size required to achieve
14 that.

15 There is time to do this. We could
16 start collecting PK samples now and conducting the
17 consolidation tests that were recommended by the IRP
18 and the porewater characterization, and build a data
19 set. And, you know, if we took monthly samples, we'd
20 start to get an idea of the pit run variability with
21 respect to PK. And then, in a short period of time,
22 we'd be able to address the question how much is
23 enough.

24 MR. RYAN FEQUET: Thanks, Barry. Just
25 -- just a reminder to everybody to keep -- keep the

1 pace reasonable.

2

3

(PAUSE)

4

5 DR. BARRY ZAJDLIK (by ZOOM): Shall I 6
give a precis of that then?

7

MR. RYAN FEQUET: I think you did pretty
8 good. I just wanted to slow you down there for a
9 second and let the -- let the translation catch up.

10

But, yes, your approach earlier this
11 morning was great, when you re-stated it in plain
12 language. But I think we got you.

13

14

(PAUSE)

15

16 MR. RYAN FEQUET: Please continue, if
17 you guys had more to that response.

18

DR. BARRY ZAJDLIK (by ZOOM): Barry
19 Zajdlik, on behalf of GNWT. I did not have anything
20 to add.

21

MS. KATHY RACHER: Okay. Kathy
22 Racher, for the Board. Thanks. That was a hard
23 question, so good job.

24

One -- one -- one (1) thing I heard
25 from Diavik though in their response to questions is

1 that the ore blend that will be representative of the
2 processed kimberlite that actually goes into A418 will
3 not be available -- samples of that processed
4 kimberlite will not be available until six (6) months
5 prior to the planned deposition, which -- so your
6 statement that samples could be taken right away isn't
7 actually feasible.

8 And so I'm not sure if you heard that
9 or if you have a response to that.

10 DR. BARRY ZAJDLIK (by ZOOM): Barry
11 Zajdlik, on behalf of GNWT. Yes, I -- I did hear
12 that, and I did already discuss this in my discussion
13 this morning with Dr. Tinis to some extent.

14 There is going to be variability in --
15 in the PK composition, you know, laterally and with
16 changes in depth and from pit to pit, and so we're
17 talking about understanding the sum total of that
18 variability in the context of the PK that could be
19 deposited. At this point in time we have no
20 information on that.

21 Sampling now would begin to address the
22 sum totality of the variability of PK in the remaining
23 workings, right. If we find that PK composition is
24 changing radically between now and -- and a year from
25 now then we'll know that we'll have to place less

1 emphasis on the earlier collected samples.

2 But we will have something to work with
3 if we start collecting now, and I think that is
4 probably going to be useful in characterizing the
5 variability of the PK that will be deposited.

6 DR. KATHY RACHER: Okay, Kathy Racher,
7 for the Board. Thanks. We can move on.

8 Recommendation Number 8 from ENR was
9 about the monthly bio profiles for pit lake sampling
10 program, and Diavik provided a response saying that --
11 that -- that they thought you kind of misunderstood
12 what -- what profiling they were -- or what kind of
13 sampling they were proposing to do.

14 I just wondered if that recommendation
15 still stood or if you were satisfied with Diavik's
16 response.

17 MR. RICK WALBOURNE (by ZOOM): Rick 18
Walbourne, GNWT. I'll pass this over to Dr. Zajdlik. 19 I
believe he's had some further conversations with 20 Diavik
on that.

21 DR. BARRY ZAJDLIK (by ZOOM): Barry
22 Zajdlik, on behalf of GNWT.

23 Yes, there was substantial
24 misunderstanding that was clarified with a
25 conversation directly with Diavik, so now we

1 understand what is meant by a monthly pro -- bio
2 profile and how it's intended to be used, and that --
3 that there was an adaptation to the proposed sampling
4 following our intervention, and that adaptation is
5 captured in one (1) of the slides that Diavik
6 presented.

7 So we're happy to see that there was a
8 modification or an improvement to the proposed
9 monitoring and the monthly bio profiles. That said,
10 we don't necessarily agree with everything that's
11 being proposed, but at least with respect to the
12 monthly bi -- bio profiles that has been clarified.

13 DR. KATHY RACHER: Okay. Thank you.
14 I just have one (1) more question for you then,
15 clarification on your Recommendation Number 9, to
16 provide criteria for assessing and approving when the
17 dikes may be breached.

18 I believe you said earlier that you
19 would provide further clarification on this in your
20 closing comments. I just wondered if -- in terms of
21 when the criteria are needed, if it's more appropriate
22 to have them be discussed as part of the closure and
23 reclamation process or if you had a different idea.

24

25

(BRIEF PAUSE)

1 MR. RICK WALBOURNE (by ZOOM): Rick 2
Walbourne, GNWT. Thank you, Kathy. Sorry, we needed 3
another little huddle there to make sure we're giving 4
you all the information you needed.

5 So we think the answer is twofold. It
6 does fall into the closure category obviously when
7 looking at what will be I guess more related to
8 closure criteria of the -- of the pit lake before
9 breaching the dikes.

10 We do, however, think it's related to
11 this process as well given that we're trying to
12 approve whether or not the PK is deposited into the
13 pit and whether or not those criteria can be met or
14 obviously linked to that as well.

15 However, I think one of the -- one (1)
16 of the other issues here we're -- we're trying to
17 establish a timeline. As you know, there are
18 requirements from the Review Board, multiple measures
19 regarding cultural water criteria and other cultural
20 well-being that there are timelines established by
21 both GNWT and ITI. So, I think one (1) of the main
22 objectives is to ensure those Review Board measures
23 are met related to the development of those criteria.

24 So -- and I know that answer is -- it's
25 not clear related to closure or -- or this process,

1 but I think there are other processes running
2 concurrently here that need to be considered, so we'll
3 just have to make sure that those are all developed
4 prior to them being finalized.

5 DR. KATHY RACHER: Kathy Racher, for
6 the Board. Okay, I think I'll leave it there and --
7 and then we'll look forward to your -- your final
8 answer in your closing comments.

9 Any other questions from staff? No.
10 So no more questions from Board staff. Thank you.

11 MR. RYAN FEQUET: Thank you, Kathy.
12 There are no questions from the Board's legal counsel
13 at this time for the GNWT. So I look to the Board if
14 there's any questions for GNWT.

15 THE CHAIRPERSON: Joe Mackenzie,
16 Chair. I've got no questions.

17 BOARD MEMBER MASON MANTLA: Mason
18 Mantla, Board member. I have no questions.

19 BOARD MEMBER RACHEL CRAPEAU: Rachel
20 Crapeau. I was just kind of curious about the
21 mercury. I believe I heard that it -- it was -- was
22 more information going to be gathered? That's just
23 what I was just wondering about.

24 MR. RICK WALBOURNE (by ZOOM): Rick
25 Walbourne, GNWT. Thank you for that question.

1 So I think the -- I think the answer
2 there is that we've recommended in our intervention
3 that additional data be analyzed and provided, so the
4 status of that recommendation is unknown at this time,
5 so that's a recommendation we're making for inclusion
6 in the water licence.

7 Barry, do you have anything to add
8 specifically on that, the mercury request?

9 DR. BARRY ZAJDLIK (by phone): No, I
10 don't. Thank you.

11 BOARD MEMBER RACHEL CRAPEAU: All
12 right. That's good to know that we're going to have
13 an answer sometime, whenever, but -- but the
14 information will be -- have gotten by the end of this
15 year or next year before pit filling starts?

16 Just -- I'm sorry, I forgot to say
17 Rachel Crapeau. And that's the end of my question. 18

18 MR. RICK WALBOURNE (by ZOOM): Rick 19
Walbourne, GNWT. Thanks for that.

20 Yeah, so I -- I guess it's -- it's --
21 the GNWT can't provide the mercury data, so just to
22 reiterate or to clarify our recommendation to the
23 Board is that a requirement for DDMI to undertake that
24 work. That was our recommendation to the Board.

25 So, depending on the decision of the

1 Board that would determine whether or not that
2 information is required from DDMI. Yeah, I'll leave
3 it there for now.

4 BOARD MEMBER RACHEL CRAPEAU: Masi cho
5 for answering my question.

6 BOARD MEMBER MIKE NITSIZA: Mike
7 Nitsiza, Board member. I have no questions. Thank
8 you.

9 BOARD MEMBER ALEX NITSIZA: Alex
10 Nitsiza, Board member. No question. Thank you.

11 MR. RYAN FEQUET: Thank you.

12 At this time continue with the agenda, the
13 Environmental Monitoring Advis (AUDIO CUTS OUT).

14 ... Charlie and John to take it away.

15 And maybe what we'll do is we'll get through this
16 presentation. And we'll plan to take a quick break
17 afterwards before we start the questioning.

18 So, John and Charlie, take it away.

19 MR. JOHN MCCULLUM (by ZOOM): Thanks
20 very much, Ryan. Can everybody hear me okay?

21 MR. RYAN FEQUET: We can. Thank you,
22 John.

23

24 PRESENTATION BY EMAB:

25 MR. JOHN MCCULLUM (by ZOOM): Okay.

1 John McCullum, from EMAB. Charlie Catholique, the
2 Chair of EMAB, is here with me. And online we also
3 have Megan Colley, from North/South Consultants and
4 Bill Slater, from Slater Environmental. And the next
5 slide, please. Next slide, please. Thank you.

6 So, just quickly, these are the areas
7 that we're going to be making comments and
8 recommendations on during our presentation. I won't
9 read through them. So, next slide, please.

10 One (1) last thing to note before we
11 start making this presentation, EMAB is an independent
12 environmental watchdog on Diavik. We don't -- our
13 board member -- a number of our board members are from
14 communities, but we do not speak for communities.
15 We're an independent monitor. Okay, next slide,
16 please.

17 I'll try to go through this quickly.
18 This is really a comment about the -- the application
19 that was submitted back in 2018 and the summary impact
20 statement that followed up that was submitted to
21 MVEIRB.

22 Some of the -- some of the approaches
23 that Diavik included in there are -- are outdated, but
24 we felt we should address them just to make sure that
25 people understood them. We think they're outdated.

1 And so, the -- the map you're seeing
2 there was the -- the 1-kilometre zone around East
3 Island that Diavik had originally proposed as the
4 mixing zone and that any -- any water quality
5 parameters measured would not have to -- or -- or
6 sorry, would not have to meet AEMP benchmarks within
7 that zone, and even at the edge of the mixing zone
8 would be 20 percent above AEMP benchmarks.

9 So, we -- we -- EMAB just wanted to
10 clarify that we feel that this should be -- should not
11 be part of the proposal in any form. Next slide,
12 please.

13 MR. RYAN FEQUET: Thanks, John. And
14 just -- Ryan here. I just wanted to interject. Just
15 a friendly reminder to --

16 MR. JOHN MCCULLUM (by ZOOM): Talking
17 too fast?

18 MR. RYAN FEQUET: A little bit. A
19 little bit.

20 MR. JOHN MCCULLUM (by ZOOM): Sorry, 21
21 I -- it's a -- it's a long presentation, and I'm
22 trying not to keep people here too long. But I will -
23 - I'll get that under control, apologies.

24 So, in addition to that comment, we are
25 asking or recommending that Diavik propose mixing

1 zones inside the pit lake as -- as they calculated or
2 modelled for -- for the rest of East Island in their
3 ICRP4.1.

4 We are noting that water quality in the
5 pit lake must meet AEMP benchmarks to at least 40
6 metres. There's been a lot of talk about 40 metres
7 during a number of these presentations.

8 The point of the 40 metres was to
9 protect aquatic life that was expected not to go below
10 40 metres, but the 40 metres is simply a minimum. And
11 that was also set out in measure 1 from -- of the REA.

12 And, again, we refer to Table 4.3 -- 4-
13 3 in the SIS; that's the one that sets water quality
14 thresholds that are 20 percent above AEMP benchmarks.
15 So, we're saying that should not be applying. Next
16 slide, please.

17 Okay, now the next thing, we're calling
18 it reliability of predictions. This is about the --
19 the water quality modelling. The -- the water quality
20 modelling and the -- the work of the IRP, very
21 impressive, definitely addressed a lot of the concerns
22 that EMAB had for the -- the original modelling.

23 There are still some uncertainties, as
24 a number of people have pointed out. And it is our
25 view that the -- the sensitivity analyses, as we

1 discussed this morning, vary one (1) parameter at a
2 time.

3 We don't feel that's -- that represents
4 a reasonable worst-case scenario where a number of
5 different parameters might be at their extreme instead
6 of just one (1) at a time. And that's why we call it
7 a reasonable worst-case scenario. Next slide, please.

8 How's my speed? Am I talking too fast?

9 MR. RYAN FEQUET: Doing pretty good,
10 John.

11 MR. JOHN MCCULLUM (by ZOOM): Okay.

12 MR. RYAN FEQUET: Doing pretty good.

13 MR. JOHN MCCULLUM (by ZOOM): Okay.

14 I'll -- I'll try to emulate Bill Slater as our
15 standard.

16 So, recommendations. This is a
17 summary. Or there's actually quite a few more
18 recommendations in our intervention. Additional
19 porewater characterization, just like many people have
20 said before us, some additional model inputs, some
21 additional information about the model inputs.

22 They should be predicting any
23 accedences of AEMP benchmarks anywhere throughout the
24 -- the area above the -- the chemocline, not just the
25 top 40 metres.

1 As discussed, model of reasonable
2 worst-case scenario. And we'd like to see a
3 prediction of post-breach water quality in Lac de
4 Gras. Okay, next slide, please.

5 Freshwater tap filling design. Very
6 quickly, we know Diavik is going to place a freshwater
7 cap. Depending on how they do that, they could
8 decrease the amount of mixing with porewater so that
9 their -- their model initial condition, I guess, would
10 be -- would not be that the entire porewater and
11 freshwater were mixed together.

12 And so, we're recommending that they
13 provide a design for approval by WLWB to minimize that
14 disturbance. Okay, next slide, please.

15 Benchmarks for unanticipated mixing
16 scenarios. Essentially, this is about that Table 4-3
17 that we talked about earlier from the summary impact
18 statement, so just reiterating that ecological
19 thresholds for water quality should be protective of
20 aquatic life. Next slide, please.

21 The decision to reconnect to Lac de
22 Gras. So, Diavik is proposing water quality and
23 cultural criteria will determine when to connect or
24 reconnect the pit lake to Lac de Gras. We think it
25 should include sediment quality, as well.

1 And we think it's very important that
2 the cultural criteria can be shown to reflect
3 community objectives. So, next slide, please.

4 So, recommendations in summary. There
5 should be sediment quality criteria set. Water and
6 sediment quality should be monitored comprehensively
7 to ensure conditions are protective of aquatic life.
8 And we'll provide quite a few more comments on the
9 monitoring later in the presentation.

10 The cultural reconnection criteria
11 should be able to be demonstrated that they have been
12 accepted by communities before being submitted to the
13 WLWB.

14 And, in addition, the partings --
15 parties to the proceeding should all be able to review
16 and comment on those cultural criteria once they are
17 submitted to the WLWB.

18 And we've -- we've got one (1) in there
19 that relates to the last line of part H, section --
20 section 18, of the -- the proposed wording that Diavik
21 used linking the cultural criteria to -- I'm trying to
22 remember the wording now, but -- but, basically, to
23 the results of the -- the water quality objective 1.

24 So, yes, we think the cultural criteria
25 should align with the -- the environmental assessment

1 report, but we don't think that -- we think that line
2 is too restrictive. Okay, next slide, please.

3 Effects to fish and fish habitat. So,
4 we are noting here it's a -- there is a critical
5 assumption in terms of aquatic life that fish or
6 aquatic life will not go below 40 metres in the pit.

7 We had some concerns about the
8 dissolved oxygen predictions only being made for A418.
9 We note that a number of forms of aquatic life are not
10 able to move away from contaminants in the same way
11 that large bodied fish like lake trout can.

12 Just a note, that post-breach fish and
13 habitat monitoring are not described anywhere in the -
14 - in the Application and that fish tissue monitoring
15 for metals is not described either. And we take the
16 viewpoint that users must feel assured that fish from
17 the pit lakes are safe to eat. Okay, next slide,
18 please.

19 So, summary of recommendations. We --
20 we need to confirm that fish only use the upper 40
21 metres of the pit lake.

22 We need to confirm the depth of
23 contaminated water in the pit lake.

24 We need to monitor fish used of the
25 enhanced -- enhanced habitats, the fish habitat that's

1 created around the outside of the pit.

2 We think that dissolved oxygen mask
3 balance model should also be run for A154 pit since
4 Diavik is including that in its -- in its Application.

5 We would like to see dissolved oxygen
6 surveys throughout the pit lake.

7 We'll want -- we'd like to see a fish
8 tissue metal survey on large bodied fish that use the
9 pit lake. And should there be any aquatic life in the
10 pit lake before it's breached through the filling
11 process or some other process, that should be sampled
12 before breaching. Okay, next slide, please.

13 Effects on wildlife. Just a note.
14 Open water in the pits could attract wildlife, and
15 we're particularly thinking of waterfowl in the
16 spring. The pit lakes very likely will have open
17 water sooner than the -- the water around there, Lac
18 de Gras.

19 And we -- we note that Diavik had
20 committed to provide an updated Wildlife Management
21 and Monitoring Plan that would address wildlife
22 safety. And our review of that plan did not see
23 anything that directly addresses wildlife safety
24 during PK placement. So, next slide, please.

25 So, basically, we're saying Diavik

1 should revi -- develop or refine the management plans
2 for the -- the project to include specific
3 requirements for wildlife monitoring and response
4 protocols during PK placement in the pits.

5 Okay, next slide, please. Monitoring
6 pre- and post-dike breach. So, our -- our review of
7 the monitoring is that we don't think it's adequate.
8 Right now, there's the one (1) SNP station proposed to
9 be monitored over time at four (4) depths in the pit
10 lake and one (1) transect sampled once before reaching
11 the pits after the -- the central station shows water
12 is at adequate quality, and then a proposal to reduce
13 the monitoring in the pits to twice a year after they
14 breach. Next slide, please.

15 So, as I've noted here, there are
16 sixteen (16) recommendations related to monitoring.
17 I'm not going to go through them all, but, basically,
18 we're looking for a comprehensive moner -- monitoring
19 program that will confirm the model predictions.

20 We'd like to see water quality modelled
21 throughout the entire pit lake in all seasons so we
22 get a sense of variation over time and over space. We
23 think sediment quality should be monitored, and that
24 would include the wraps and benches and the enhanced
25 habitat areas.

1 And particularly, before reconnecting,
2 we think there should be sampling for at least two (2)
3 years throughout the pit lake in all seasons. And by
4 that, we're -- we're talking in particular about
5 spring turnover and fall turnover and -- and sort of
6 bracketing that with -- with sampling.

7 And after breaching, at least two (2)
8 years in the pit lake to confirm the chemocline
9 remains stable and throughout the lake to determine
10 water exchange with Lac de Gras and the effects on Lac
11 de Gras. Next slide, please.

12 Contingency plans. Diavik mentions
13 very briefly a couple of contingency plans to close
14 the breaches in the -- in the dike if water quality in
15 the pits, for some reason, becomes unsafe.

16 And our view is that we should be able
17 to assess whether or not those plans are feasible and
18 the potential effects on Lac de Gras. So, next slide,
19 please.

20 So, we're looking for development of a
21 more detailed description of how the contingency plan
22 would work. Right now, it's -- it's basically a
23 couple of sentences.

24 We'd like to see more information on
25 the potential impacts associated with the contingency

1 plans and, particularly, the impact on Lac de Gras if
2 there's an increased loading due to unanticipated
3 mixing of the pit.

4 And we'd like to know how the views of
5 affected communities were incorporated into or
6 affected those contingency plans. Okay, next slide,
7 please.

8 Revised closure objectives. Basically,
9 we think that the PKMW project should include some --
10 some aspects of closure as part of it, any refinement
11 to closure objectives or closure criteria, updating
12 the PKC facility closure plan.

13 And we note that there's a number of
14 other -- a number of the other sections of our
15 presentation do relate to closure and that all of
16 those should be incorporated into the closure portion
17 of this project proposal. Okay, next slide, please.

18 So, there's a need for a timely
19 updating of the closure plan to address the PKMW
20 project, and that should include both objectives and
21 criteria.

22 There's a need to address wildlife
23 interactions and changes at the PKC facility once the
24 -- once the PK is directed to the pit, and suggest
25 revising -- or recommend revising closure objective M8

1 which relates to wildlife in -- wildlife protection in
2 the pits. Next slide, please.

3 Cumulative effects on water quality.
4 Essentially, our view is that the -- the cumulative
5 effects description was not very clear as to its
6 description of the methods used, and we'd like to see
7 a more detailed description of that. Next slide,
8 please.

9 And PK slimes. EMAB's view all along
10 about this whole project has been that the --
11 relocating the slimes from the PKC pit, assuming it
12 can be done safely, and those were his caveats, that
13 that's the real benefit of this project.

14 And becau -- because there are a number
15 of critical issues with -- with closing the PKC
16 facility that, right now, there -- there is no
17 credible plan to -- to close the PKC facility.

18 So, the pits would make an ideal
19 location to the permanent physically stable location.
20 And we'd like to see that study of the feasibility of
21 -- of relocating those slimes take place as soon as
22 possible. Next slide, please.

23 So, Diavik should be required to
24 evaluate the feasibility of slimes relocation from the
25 PKC to the pits as soon as possible as a condition of

1 the approval -- of any approval. Next slide, please.

2 And this is just a comment on the --
3 the work plan for this project. We -- we did find
4 that it was a little bit compressed. The -- the
5 revised schedule was -- was helpful. And we were able
6 to complete our work, but we -- we had a hard time.

7 You know, we -- we had to really
8 compress our approval process and our -- our internal
9 review process, and so our -- you know, our -- our
10 full and complete review could have been better given,
11 you know, even a week or -- even a week or so more, so
12 we felt the need to bring that up.

13 And, of course, if we're having trouble
14 getting out consultants to be able to review the stuff
15 and getting our board to -- to take a look at it, then
16 there's concern that communities may also be limited
17 in their ability to participate in the proceeding and
18 -- and that their full and complete review may also be
19 entered.

20 And I believe that's it. Next slide,
21 please. Yeah, we're done. Thank you very much. So,
22 I guess your -- the plan is to take a break. And then
23 we'll come back and -- and answer any questions on the
24 presentation?

25 MR. RYAN FEQUET: Yes, John. Thank

1 you very much for that. So --

2 MR. JOHN MCCULLUM (by ZOOM): Okay.

3 I'm just going to -- just going to say, so
4 consultants, Megan and Bill, please -- please stay
5 online until after the -- the questions are completed.
6 Thank you.

7 MR. RYAN FEQUET: Okay. So, we have
8 2:33 on my clock, so maybe we'll come back at 2:45.
9 So, we'll give twelve (12) minutes, quarter to the
10 hour everyone -- everyone back in their seats.

11 Thanks.

12

13 --- Upon recessing at 2:33 p.m.

14 --- Upon resuming at 2:46 p.m.

15

16 QUESTION PERIOD:

17 MR. RYAN FEQUET: We were wondering --
18 wondering how many there were. Next I'll look to Anna
19 and Meagan at Environment and Climate Change Canada,
20 if you have any questions for EMAB at this time.

21

22 (BRIEF PAUSE)

23

24 MR. RYAN FEQUET: ECCC...? There we
25 go.

1 MS. MEAGAN TOBIN (by ZOOM): Hi. 2
3 Sorry. I wasn't sure if Anna was back yet. It's
4 Meagan Tobin, Environment and Climate Change Canada.
5 We have no questions for EMAB. Thank you.

6 MR. RYAN FEQUET: Thank you, Meagan.
7 To the Government of the Northwest Territories, if you
8 have any questions for EMAB, please proceed.

9 MR. RICK WALBOURNE (by ZOOM): Hi,
10 Ryan. Thanks. Rick Walbourne, GNWT. I have a couple
11 of questions for EMAB, and then I'll pass it over to
12 Barry Zajdlik.

13 John or someone in the room, would you
14 be able to pull up the slide where the -- it outlined
15 like the aquatic monitoring regarding some of the fish
16 monitoring and things like that? I'm -- I'm not sure
17 what slide. A recommenda -- yeah, a lot of
18 recommendations.

19 MR. JOHN MCCULLUM (by ZOOM):
20 Recommendation 6. That one?

21 MR. RICK WALBOURNE (by ZOOM): Yeah.
22 Yeah, that's good. Thanks, John. Yeah, so I have a
23 couple of questions.

24 I guess, John, regarding time line --
25 well, let me start. So Recommendation 3, you're
talking about monitoring fish use of enhanced

1 habitats. I'm assuming are -- is that ref --
2 referring to inside the pits after the dikes are
3 breached or what -- what's the time line related to
4 point 3 there?

5 MR. JOHN MCCULLUM (by ZOOM): Yes.
6 That would be after the dikes are breached. John
7 McCullum, EMAB.

8 MR. RICK WALBOURNE (by ZOOM):
9 Thanks, John. Rick Walbourne, ENR. Another question.

10 Regarding fish tissue metal surveys on
11 large-bodied fish -- so I assume that's within the
12 lake as well -- obviously, as you know, when we're
13 looking at aquatic effects, depending on how far up
14 the chain you go, there's usually a delay in effects.

15 So we see water quality first, and then
16 we see, you know, benthics and plankton, and then
17 maybe fish.

18 Do you have an idea of what type of
19 time lines you're anticipating or you're recommending
20 regarding some of the fish, large-bodied fish
21 monitoring that you'd like to see inside the pit
22 lakes?

23 MR. JOHN MCCULLUM (by ZOOM): Sure. 24
I'll take a stab at that, and then maybe I'll -- I -- 25 I
-- anyway, yeah. So, I mean, obviously post-

1 breaching because like what we're interested in -- in
2 doing here is -- is demonstrating to people who -- in
3 communities who have concerns about mercury in fish
4 and have concerns about this project, that the fish
5 inside the pit lake or the fish that use the pit lake
6 are safe to eat. So it would be -- it would be a
7 post-breach situation.

8 And, Megan, if you want to step in
9 there, feel free. I'm not sure if there's anything
10 that needs -- really needs to be added to that.

11 MS. MEGAN COOLEY (by ZOOM): Megan
12 Cooley here, with North-South. Can everyone hear me?

13 MR. RYAN FEQUET: We can, yes.

14 MS. MEGAN COOLEY (by ZOOM): Perfect.
15 Okay. I -- I don't really have much to add there. I
16 agree with you, John, that it would be clearly post-
17 breach I think that would be of interest since there
18 will be fish screens, as I understand it, to exclude
19 fish from entering the pit prior to the breaching.

20 Beyond that, I'm not sure if we have
21 any specific comment about, you know, whether it be
22 year 1, 2, 3, et cetera when -- when monitoring may
23 begin, but presumably some -- some time shortly after
24 the breach.

25 MR. RICK WALBOURNE (by ZOOM): Rick

1 Walbourne, ENR. Thanks for that. Yeah, I'm just kind
2 of curious about how long that might go, but I'll let
3 that go. That's maybe a conversation for further down
4 for post-closure monitoring.

5 I guess my final question regarding
6 this topic -- so my understanding is EMAB is
7 recommending, you know, monitoring of fish habitat,
8 fish tissue, fish use below 40 metres, a few things
9 like that.

10 So is my assumption correct that what
11 you're proposing is that if there were potentially any
12 impacts in any of those areas inside that lake once
13 it's breached, are you -- would the next logical step
14 that there would be some sort of action levels or
15 triggers by which you would potentially propose that -
16 - well, I guess that's my question.

17 I think from later in your
18 contingencies, you're looking at the dikes being
19 reclosed? I'm just trying to understand. I'm kind of
20 seeing a response framework or adaptive management
21 scenario playing out.

22 Im just trying to understand, if there
23 were impacts in any of these monitor -- in any of this
24 monitoring, what -- what would be the next step
25 regarding adaptive management? Thank you.

1 MR. JOHN MCCULLUM (by ZOOM): Good 2
question, and we -- we haven't really made a
3 recommendation about that. I wasn't -- I wasn't
4 really -- or we weren't really sure if this was
5 something that would be incorporated into the AEMP or
6 maybe an AEMP special effects study or -- or something
7 like that.

8 So -- so we haven't taken it that next
9 step, but for sure, if there was -- if -- if this was
10 indicating problems, then it would be -- have to be
11 handled through the same approach as -- as other
12 problems which would be the response framework and --
13 and action levels.

14 That -- that makes sense to me. We
15 haven't -- we haven't actually had that discussion, or
16 the Board hasn't actually had that discussion, but
17 that makes sense.

18 MR. RICK WALBOURNE (by ZOOM): Rick
19 Walbourne, GNWT. Thanks, John, for those responses.
20 Yeah, I'm just curious how -- how that might play out
21 way down the road if -- if that situation were to
22 occur.

23 But I -- I think in -- I think we
24 agree, high level, that, you know, there would be some
25 action levels and some responses, but what those may

1 be I guess is a conversation for another day. So
2 thanks for that.

3 I'd like to pass it now over to Dr.
4 Barry Zajdlik who I believe have a couple of questions
5 for EMAB.

6 DR. BARRY ZAJDLIK (by ZOOM): Barry 7
Zajdlik, on behalf of GNWT. Yes, I have one (1) 8
question. It's a clarification.

9 There was some discussion in your
10 submission regarding ecological thresholds proposed by
11 Diavik. And I gather that you're not in favour of the
12 ones that were proposed, but it's not clear to me
13 which ones you're actually proposing either.

14 So if you could clarify what numbers
15 are what group -- body you're referring to when you
16 mention an ecological threshold, that would be very
17 helpful.

18 MR. JOHN MCCULLUM (by ZOOM): Sure,
19 Barry. We're just -- we're just suggesting AEMP
20 benchmarks.

21 DR. BARRY ZAJDLIK (by ZOOM): So the 22
ones that exist now as opposed to anything that's been 23
modified upwards?

24 MR. JOHN MCCULLUM (by ZOOM):
25 Correct.

1 DR. BARRY ZAJDLIK (by ZOOM): Okay. 2
Thank you for the clarification. That's all I have.

3 MR. RYAN FEQUET: Were there any other
4 questions from the GNWT-ENR at this time?

5

6 (BRIEF PAUSE)

7

8 MR. RICK WALBOURNE (by ZOOM): Rick
9 Walbourne, GNWT. No further questions from us at this
10 time. Thank you, EMAB, for your presentation and your
11 responses.

12 MR. RYAN FEQUET: Thank you, GNWT.
13 I'll turn it over to the Tlicho Government, if you
14 have any questions for EMAB at this time.

15 MR. BRETT WHEELER: Masi. Brett
16 Wheeler, Tlicho Government. First question is about
17 sampling before the pit is reconnected.

18 In response to your requests on
19 sampling -- to your recommendations on sampling,
20 Diavik suggests the following is required before
21 reconnecting to Lac de Gras:

22 Number 1, sampling must demonstrate the
23 top 40 metres of the water meets AEMP benchmarks; and

24 Number 2, Stage 3 modelling must
25 demonstrate that the top 40 metres of the water will

1 continue to meet AEMP benchmarks in the long term.

2 Does this response and approach address
3 your requests? Masi.

4 MR. JOHN MCCULLUM (by ZOOM): Thank
5 you, Brett. John McCullum, EMAB.

6 I mean, I guess to the degree that --
7 that those are the benchmarks that we would like to
8 see met. There are -- there are concerns that aquatic
9 life may use an area of the pit lake below 40 metres

10 This seems to be an ongoing discussion
11 that we've been having. So wherever aquatic life are
12 present in the pit lake, the water should meach --
13 meet at a minimum AEMP benchmarks.

14 Am I answering your question?

15 MR. BRETT WHEELER: Masi. Brett
16 Wheeler, Tlicho Government. That's close enough, John.
17 Next question is on sediment quality criteria and
18 EMAB's recommendation for sediment quality criteria.

19 Diavik's response says that Diavik does
20 not believe sediment criteria are applicable to a deep
21 flooded mine working, and the response goes on a bit.
22 I'm sure you've seen it.

23 My question is: Given Diavik's
24 response and that it is unlikely that fish would
25 travel as deep down as -- as the sediment will be, as

1 the processed kimberlite will be, why do you believe
2 that sediment quality criteria are needed? Masi.

3 MR. JOHN MCCULLUM (by ZOOM): Thank
4 you, Brett. John McCullum, EMAB.

5 Well, if it's -- if it can be
6 demonstrated that there's no sediment, then I can see
7 why sediment monitoring might not be required.
8 Certainly doesn't prevent preparing or developing
9 sediment quality criteria in advance of the
10 monitoring.

11 And, I mean, sediment are -- sediment
12 is a component, a key component, of the aquatic
13 ecosystem and has a -- can -- it has the potential to
14 have effect on -- on fish and health of aquatic life.
15 So we -- we think that if -- that we should monitor it
16 if it's there.

17 Maybe I'll just -- Bill Slater, do you
18 have anything you want to add on that, or -- or Megan?
19 I'll start with Bill and then, Megan, you can jump in
20 if you want.

21 MR. BILL SLATER (by ZOOM): Hi. It's
22 Bill Slater, from EMAB. You can hear me, I presume?

23 MR. JOHN MCCULLUM (by ZOOM): Yes.

24 MR. BILL SLATER (by ZOOM): Okay.
25 Excellent. Yeah. I guess I don't have a lot to add

1 to what John said. There is -- you know, there -- if
2 there is sediment there, then it should be monitored.
3 It's an important component in the aquatic ecosystem.

4 I would agree that it's unlikely that
5 you would be monitoring sediment deep down in the --
6 in the former pit, and there would unlikely be --
7 well, obviously, there would be sediment at the very
8 bottom where we deposited PK.

9 But I think it's more relevant to be
10 monitoring sediment in the benches, the upper benches
11 that are -- that are to be developed into fish
12 habitat.

13 And so there are a number of processes
14 during development of that habitat and filling of the
15 pit that could lead to sediment accumulation in
16 certain areas, and it makes sense that -- and also
17 through runoff even from the site. And it makes sense
18 that you would be looking at that before you reconnect
19 that to be fish habitat that is accessible to the --
20 to the lake. Thanks.

21 MR. BRETT WHEELER: Brett Wheeler,
22 Tlicho Government. Masi for that. That does help to
23 understand which sediments you're -- you're refer --
24 referring to.

25 So just to -- just to clarify. You're

1 referring to sediment that -- that may be present now
2 and -- or is kind of in situ sediment there, rather
3 than sediment that will be somehow introduced through
4 the -- depositing the processed kimberlite? Masi.

5 MR. JOHN MCCULLUM (by ZOOM): Both.
6 There is -- there is potential for some sediment to
7 fall out on those benches and -- and there may be
8 existing sediment there. And as well, on the -- the
9 flatter areas around the outside of the -- the pit
10 where the enhanced habitat is.

11 So whatever the source of the sediment
12 is it should be at least checked for. And, again,
13 I'll hand that off if anybody -- either of the other
14 consultants wants to talk about it.

15

16 (BRIEF PAUSE)

17

18 MR. BRETT WHEELER: Masi. Brett
19 Wheeler, Tlicho Government.

20 Next question is about your
21 recommendation for 3D modelling in relation to SNP
22 164588 and -- and the water in the pit.

23 Can you please elaborate on why you
24 think that 3D modelling is required? And -- and also,
25 can you please indicate why you're recommending that -

1 - sorry. I'll leave it there and ask the follow-up
2 separate.

3 Can you -- can you please elaborate on
4 why you think 3D modelling is required? Masi.

5 MR. JOHN MCCULLUM (by ZOOM): John
6 McCullum, EMAB.

7 I think it's really just prudent. I
8 mean, we -- we don't know what the variability in --
9 in the pit is going to be. I mean, there are -- there
10 are benches. There are these flat enhanced areas
11 around the outside. We -- as has been pointed out,
12 there's a dike around the pit, which -- which reduces
13 wind and wave action to some degree. And unless we
14 sample for it, we're not going to know if it's there.

15 So -- and we're certainly not going to
16 know that it's -- whether there's variability there
17 from -- throughout the lake from the sample in the
18 middle.

19 So -- and -- and further, as I
20 mentioned earlier, I mean, we're looking for temporal
21 variability as well, do things change over the
22 seasons.

23 So, I guess, that covers both -- I
24 guess, that's more 4D than 3D, but that's -- that's --
25 what we're looking for is a good sense of what the --

1 what's going on around the whole pit lake and area.

2 Again, if Bill or -- or Megan wants to
3 add on to that, please go ahead.

4 MR. BRETT WHEELER: Masi. Brett
5 Wheler, Tlicho Government.

6 I -- I think I heard you speaking
7 mostly about -- about monitoring just now. I was
8 asking also -- I was asking more so about the 3D
9 modelling. Masi.

10 MR. JOHN MCCULLUM (by ZOOM):
11 Apologies.

12

13 (BRIEF PAUSE)

14

15 MR. JOHN MCCULLUM (by ZOOM): I'm --
16 maybe I'll -- Bill, are you able to speak to this?
17 I'm -- I'm -- I'm struggling to recall our
18 recommendations with -- with relation to the 3D
19 modelling.

20 Sorry, John McCullum, EMAB. I'm trying
21 to dodge the question.

22

23 (BRIEF PAUSE)

24

25 MR. BILL SLATER (by ZOOM): It's Bill

1 -- it's Bill Slater. I don't actually have much to
2 add to what you said, John.

3 I -- I think we made recommendations
4 around the -- the need to establish an understanding
5 of conditions across space and time in the pit, which
6 is really about monitoring.

7 With respect to modelling, the existing
8 modelling does already include variability over space
9 and time in the pit.

10 I guess, you might call it more 2D than
11 3D in terms of mixing in the pit in reality. But --
12 yeah. I don't think we've made specific
13 recommendations around 3D modelling. Other than the
14 modelling-related recommendations we've made in
15 specific areas.

16 MR. BRETT WHEELER: Okay. Masi. Brett
17 Wheler, Tlicho Government. We'll leave that one (1)
18 for now.

19 Next question is about your
20 recommendation that two (2) years of sampling in the
21 pit is vital before re-connection.

22 So given everything that has been
23 discussed about this by Diavik during the hearing and
24 also by the Independent Review Panel, do you -- do you
25 still -- what is your thinking on that -- that

1 recommendation? Given the discussions about -- about
2 re-connecting sooner versus later that we've had during
3 the hearing? Masi.

4 MR. JOHN MCCULLUM (by ZOOM): John
5 McCullum, EMAB.

6 Again, really, this is about
7 characterizing the pit lake reasonably thoroughly and
8 the -- it would be good to watch the lake, as it
9 behaves, throughout a couple of seasons before doing
10 the re-connection.

11 I'm pretty sure I heard from the -- the
12 IRP members this morning that a few months or even a
13 couple of years wouldn't really make a huge difference
14 in terms of the -- the -- the water quality in -- in
15 the pit lake. And it would give us a much better idea
16 of what's -- what's going on there and whether we're
17 comfortable with the level of variation variability
18 before breaching the dikes.

19 Again, Bill or Megan, if you have
20 something to add, please go ahead.

21 MS. MEGAN COOLEY (by ZOOM): Megan
22 Cooley here, with North/South Consultants.

23 I think you pretty much summed that up
24 well, John. Just -- yeah, just to reiterate, our
25 thinking there was to, essentially, provide an

1 opportunity to acquire sufficient data and information
2 to characterize the -- the pit lake before breaching.

3 So just thinking in, kind of, standard
4 practice terms where two (2) years of baseline, for
5 instance, is pretty common and, of course, to capture
6 the seasonality there. Thanks.

7 MR. BRETT WHEELER: Masi. Brett
8 Wheeler, Tlicho Government.

9 We -- we noticed EMAB's
10 recommendation about a feasibility study of moving the
11 slimes and -- and John's comments about that
12 recommendation today.

13 So knowing -- so we know that the
14 objectives for water quality in the pit lake have been
15 set in the EA measures and the water needs to be good.

16 But does EMAB believe that some small
17 water quality affects might be acceptable as a trade-
18 off for making the processed kimberlite containment
19 facility safer by removing the slimes? Masi.

20 MR. JOHN MCCULLUM (by ZOOM): Thank
21 you, Brett. John McCullum, EMAB.

22 I think -- well, our -- EMAB's position
23 is that the water quality has to at least meet AEMP
24 benchmarks. You know, I -- the Board hasn't discussed
25 this -- this possibility.

1 But the main point they've made is that
2 the water quality would have to meet AEMP benchmarks.
3 So I suppose that if it was better than AEMP
4 benchmarks and putting the slimes in would decrease
5 the water quality a little bit, but would keep it
6 under the -- the AEMP benchmark, then maybe that would
7 be acceptable.

8 It -- it really -- I shouldn't be
9 putting words in the board's mouth and our -- our
10 board really hasn't discussed that possibility, Brett.

11 MR. BRETT WHEELER: Masi. Brett
12 Wheler, Tlicho Government. Thanks for that, John. We
13 have no further questions.

14 MR. RYAN FEQUET: Masi, Brett. I'll
15 look to the Deninu Kue First Nation, if there's any
16 questions for EMAB at this time.

17 MR. MARC D'ENTREMONT (by ZOOM):
18 Thank you. It's Marc d'Entremont for DKFN. We have
19 no questions for EMAB. Thanks.

20 MR. RYAN FEQUET: Masi, Marc. The
21 North Slave Metis Alliance, Adelaide.

22 MS. ADELAIDE MUFANDAEDZA (by ZOOM):
23 Thank you. We have no questions for EMAB.

24 MR. RYAN FEQUET: Masi. The
25 Yellowknives Dene First Nation. Sarah...?

1 MS. SARAH GILLIS (by ZOOM): Thank 2
you, Ryan, and thank you, EMAB for your presentation. 3
We are -- it's Sarah Gillis from YKDFN and we have no 4
questions at this time.

5 MR. RYAN FEQUET: Masi, Sarah. The
6 Fort Resolution Metis Government, do you have any
7 questions for EMAB at this time?

8

9 (BRIEF PAUSE)

10

11 MR. RYAN FEQUET: Sure, so it's Shawn
12 from the Fort Res Metis Government.

13

14 (BRIEF PAUSE)

15

16 MR. RYAN FEQUET: Thanks, Shawn.
17 We're just making sure the mic's on there so everyone
18 in Zoom land can hear you. Go ahead.

19 MR. SHAWN MCKAY: Check, check. Okay,
20 so on the slide of reliability of predictions my
21 question is: What worst-case scenarios need to be
22 included in the monitoring, and what are the worst-
23 case scenarios for our wildlife as well?

24 I'll just leave it at that and I'll
25 leave my comment, thanks.

1 MR. RYAN FEQUET: Thank you, Shawn.

2 EMAB...?

3 MR. JOHN MCCULLUM (by ZOOM): Sure. 4

Thank you. John McCullum, EMAB.

5 Worst-case scenarios, our -- our view
6 is -- is that the individual sensitivity analyses, you
7 know, are -- are good on themself -- under themselves,
8 but -- but really if you want to create a -- even a
9 reasonable worst-case scenario you have to have a
10 number of the factors that are all more towards the
11 extreme end than -- than what Diavik has used, and so
12 that's, you know, that's basically what we're looking
13 for is something that combines the various factors
14 being towards their outer limits.

15 And I think from there I'll -- I'll
16 hand it off to Bill and Megan. Bill, maybe you could
17 start, and then, Megan, you can jump in if -- if you
18 want to add anything.

19 MR. BILL SLATER (by ZOOM): Thanks,
20 John. It's Bill Slater.

21 Yeah, I can -- I can speak to that a
22 little bit. Our -- our view is that the modelling
23 that's been done is what we would call a -- a
24 deterministic model which really means that it's a
25 model that takes a bunch of assumptions and creates a

1 single scenario of what we predict could happen with
2 respect to water quality.

3 And so that means that for all of the
4 inputs to the model, we make a choice about what
5 specific input we're going to select to put into the
6 model to have it make this prediction for us.

7 And, of course, many of those inputs
8 are not a single number, so water quality changes over
9 time, weather changes over time, lake levels change
10 over time, wind changes over time, and that affects
11 its mixing. Runoff -- the water -- the quality in
12 runoff might change. The quality of porewater might
13 change.

14 So all of these things are not static
15 and they're not single values even though we've used a
16 model that takes a single value.

17 And Mr. MacDonald and I had a bit of
18 discussion about this yesterday. Many of the inputs
19 for the current model are inputs that represent kind
20 of the middle of the range of what we expect could
21 happen, and there are a few areas in which there are
22 what we would call conservative assumptions that are
23 made, for example, how much water might be in the pit
24 at the start of the pit filling with clean water.

25 So largely the -- the model prediction

1 that's been made is one that represents kind of the
2 middle of the range of expected conditions and perhaps
3 a little bit above what the middle of the range might
4 look like.

5 And then there's been some sensitivity
6 analysis done, and what that means is that for any one
7 (1) of the inputs, so for example, the water quality
8 of the runoff or the -- not maybe the number, there
9 was a number of sensitivities analyses that were done,
10 but the water quality of the water in the pit at the
11 time of the start of filling and those kinds of
12 things.

13 There's been, you know, a different
14 number selected. So, you know, for example something
15 that represents what we would call the 75th percentile
16 of the data or the expectation, so -- and that
17 represents something a little more adverse that would
18 happen, you know, only a quarter of the time or
19 something like that.

20 So we can take those and we can run the
21 model again and it can give us an idea of well, how
22 much does it change if we -- how much the outcomes
23 change if we take this one (1) particular parameter
24 and we change it a little bit, and we might do that
25 with two (2) parameters or something.

1 Some of the sensitivities analysis that
2 were done include changes in two (2) different
3 parameters, and that gives us an idea of -- of how
4 much the outcomes are affected by that particular
5 parameter that we put in.

6 But in terms of -- typically when one
7 is looking at this kind of modelling, especially when
8 you're running it for a model for a couple of hundred
9 years, obviously, there's a lot of variability that
10 happens over that time period.

11 And so typically you would have your
12 modellers identify okay, well, what's a -- what's a
13 reasonable kind of upper limit of the kinds of
14 conditions we would expect to see, and let's -- let's
15 build a different model scenario that takes a bunch of
16 those upper limit conditions and puts them all in at
17 the same time because, you know, over that 200 years
18 there's a good chance that once or twice or whatever
19 that there's going to be a whole combination of these
20 things that come together in a way that we haven't
21 addressed in the model as yet.

22 And so that's why we refer to it as a
23 reasonable worst case. Let's take what these
24 parameters are and -- and look at -- at how they might
25 all combine and what the impacts would be, and I --

1 you know, given the sensitivity analysis that have
2 been -- has been done, there's a good chance that --
3 that even when we do that it's going to be indicating
4 that the water quality is fine.

5 But that's the kind of thing we should
6 do in order to predict and understand that we have a
7 system that we think is actually going to work through
8 the variability of the next 200 years.

9 And so that's not a -- it's not what
10 you would consider a -- an absolute worst case where
11 you take the absolute most adverse conditions of
12 everything and add them all up, but it is I think a
13 reasonable worst case.

14 Sorry, that's a long explanation for a
15 short question.

16 MR. SHAWN MCKAY: Thank you. Shawn
17 Mckay, Fort Resolution Metis Government.

18 MR. RYAN FEQUET: Oh, just one (1)
19 sec, Shawn. Sorry, we had to turn -- Pido, mic.

20 MR. SHAWN MCKAY: You need a foot
21 pedal here.

22 MR. RYAN FEQUET: I think it's ready
23 there, Shawn. Go ahead.

24 MR. SHAWN MCKAY: Okay. So my next
25 question is so I understand you're referring to as

1 worst-case scenarios including mixing?

2 MR. JOHN MCCULLUM (by ZOOM): Yes.

3 Sorry, John McCullum, EMAB. Yes.

4 MR. SHAWN MCKAY: Okay, I've just got
5 one (1) more quick question.

6 How can the prediction of mixo --
7 mixolin -- limnion be made without the certainty of
8 the meromixis?

9

10 (BRIEF PAUSE)

11

12 MR. RYAN FEQUET: John, Bill, did you
13 guys --

14 MR. JOHN MCCULLUM (by ZOOM): Yeah, I 15
-- sorry, I'm -- John McCullum, EMAB. I'm just trying 16
to -- I -- I -- I'm not -- I mean, if the mic -- the 17
mixolimnion is the area above the meromixis, so -- I 18
don't know. Sorry, I'm going to hand this off to
19 Bill.

20 MR. BILL SLATER (by ZOOM): Hi, it's 21
Bill Slater. Thanks, John.

22 I guess, you know, your question is --
23 at least as I understand it, is about, you know, how -
24 - how do we have certainty about the predictions in
25 the -- in the mixolimnion, which is the upper portion,

1 without having certainty about whether we have
2 meromixis. And -- and the answer is we can't.

3 And perhaps it's a question that -- you
4 know, that may better be directed at -- at Diavik.
5 But I guess I will say that, you know, models are
6 predictions. And Diavik's model, as it currently
7 stands, as I understand it, predicts that -- that
8 there will be a stable meromixis.

9 And then, on that basis -- well, I
10 shouldn't say on that basis. It also, at the same
11 time, predicts then what the water quality conditions
12 are in the -- in the upper layer of the pit.

13 And -- and all of that is -- is part of
14 the complex black -- I shouldn't necessarily call it a
15 black box, but it is -- it is part of the complex
16 series of -- of equations that are the model. And it
17 is a prediction and -- and there is uncertainty in all
18 of it.

19 MR. SHAWN MCKAY (by ZOOM): Thanks. 20
Shawn McKay, Fort Resolution Metis Government.

21 So, from what I gather with your answer
22 just now, you said models aren't predictions. And
23 then -- and I think towards the end of your answer
24 there you were talking about predictions of models.

25 For -- can you explain? What do you

1 mean by "models aren't predictions"? Aren't models
2 created as -- as a prediction?

3 MR. BILL SLATER (by ZOOM): Sorry.
4 It's Bill Slater. Sorry, about that. If -- if I gave
5 the impression that models were not predictions, then
6 -- then I misspoke. My intention was to say that they
7 are, indeed, predictions.

8 And -- but there's always uncertainty
9 with those predictions because, of course, they are,
10 as I said, you know, a series of equations that are --
11 and a series of inputs that are used to make a
12 prediction of what might happen in the future, and --
13 and so, there's uncertainty with those outcomes.

14 And -- and, at the moment, you know, I
15 guess as John said at the start of the presentation,
16 the current state of modelling has come a long way
17 forward from where we were. And the IRP has spoken to
18 that.

19 You know, it's come a long way forward
20 from where we were when the Application was submitted
21 in 2018. And so, that has narrowed the -- the level
22 of uncertainty that we have with the predicted
23 outcomes.

24 But Diavik would be in a better
25 position to speak to the level of uncertainty, I

1 guess.

2 MR. SHAWN MCKAY (by ZOOM): Okay. 3

Thank you. Shawn McKay, Fort Resolution Metis

4 Government. I just got one (1) last quick comment.

5 With respect to your slide -- what a
6 minute, I'm just bringing it up here.

7

8 (BRIEF PAUSE)

9

10 MR. SHAWN MCKAY (by ZOOM): Just give

11 me a second here.

12

13 (BRIEF PAUSE)

14

15 MR. SHAWN MCKAY (by ZOOM): Sorry, I 16

-- I guess I should ask one (1) more last question. I 17

think it's with respect to wildlife, worst-case

18 scenarios with respect to wildlife. And then I'll

19 have my last -- last comment after that.

20

21 (BRIEF PAUSE)

22

23 MR. JOHN MCCULLUM (by ZOOM): Thanks,

24 Shawn. John McCullum, EMAB. We didn't -- I don't

25 think anybody's made any predictions about worst-case

1 scenarios related to wildlife.

2 We were particularly concerned that --
3 that ducks and other waterfowl might -- might land on
4 the -- the water, on top of the PK while it's being
5 filled, because it will likely be -- it'll be --
6 likely be open water there where the rest of the lake
7 might be frozen up.

8 But we didn't -- we didn't make any
9 predictions for worst-case scenarios rela -- related
10 to wildlife. We were just saying Diavik should
11 develop its management and monitoring plans to
12 hopefully make sure no worst-case scenarios take
13 place, but it's not something we -- we had really
14 addressed.

15 I hope -- I hope that answers your
16 question.

17 MR. SHAWN MCKAY (by ZOOM): Thank 18
18 you. Shawn McKay, Fort Resolution Metis Government. 19 I
19 -- I just want to make one (1) last comment. Thanks 20 for
20 bringing up that slide. That's the one I was
21 looking for.

22 I just wanted to -- for the record that
23 Fort Resolution Metis Government supports that
24 recommendation with the inclusion of traditional
25 knowledge from the -- the parties involved. Okay.

1 MR. RYAN FEQUET: Thank -- thank you
2 very much, Shawn. Are there any other questions from
3 any other members of the public at this time?

4 MS. KATY DIMMER (by phone): This is
5 Katy Dimmer, also with Fort Resolution Metis
6 Government. I just had one (1) followup question --

7 MR. RYAN FEQUET: Sure. Go ahead.

8 MS. KATY DIMMER (by phone): --
9 related to fish. Thank you. On your slide about --
10 your recommendations for fish and fish habitat, your
11 first recommendation is to confirm fish only use the
12 upper 40 metres.

13 What would be your recommendations for
14 confirming this before breaching, or what are the
15 proposed methods?

16 MR. JOHN MCCULLUM (by ZOOM): John
17 McCullum, EMAB. We would be proposing this would be
18 done after breaching.

19 MS. KATY DIMMER (by phone): Okay. Do
20 you feel like there's any opportunity for doing any
21 investigations pre-breaching?

22 I know from back at the hearings of
23 MVEIRB, one (1) of our -- one (1) of Fort Resolution
24 Metis Government's knowledge holders raised the issue
25 that they already know of some species that can go to

1 depths of 100 metres.

2 MR. JOHN MCCULLUM (by ZOOM): Yeah,
3 John McCullum, EMAB. Yeah, I think we actually might
4 have quoted that person. It was a -- it was a member
5 of Diavik's TK panel, at least the one that I'm
6 thinking of, that said that fish might go down as far
7 as a hundred metres.

8 And so, that was one (1) of the reasons
9 we were saying we -- you know, we'd like something --
10 we'd like to verify that fish are only going to be
11 using the upper 40 metres.

12 But as you say, you can't -- I mean, we
13 -- we can -- that's -- until the fish go in there, we
14 can't actually verify that. So, the point of this
15 recommendation was to monitor what they do after the -
16 - after the dikes are breached.

17 MS. KATY DIMMER (by phone): Okay. I
18 know you said that you had, at this point in time,
19 limited recommendations for adaptive management
20 responses, but if you -- apologies for any background
21 noise to the Board and Mr. Chair.

22 If you could provide any information or
23 if you have any designs on what would be the response
24 if there are fish confirmed to be using that for 40
25 metres? What would be your recommendation to Diavik?

1 MR. JOHN MCCULLUM (by phone): John
2 McCullum, EMAB. So, the -- the point being that the -
3 - the water quality should reach AEMP -- should --
4 should not exceed AEMP benchmarks wherever there are -
5 - wherever there's aquatic life in the pit lake.

6 I think that's about as far as I'm
7 prepared to go right now. I guess the hope would be
8 that the -- the modelling, and then the sampling,
9 would show that -- that the -- the AEMP benchmarks are
10 met basically right down to the mix -- the chemocline,
11 but we won't know that until the monitoring starts.

12 Yeah, I think -- like, the main -- the
13 main reason we have this section in our presentation
14 and in our intervention is that Diavik did not propose
15 any monitoring of fish. And we felt that there does
16 need to be a fish monitoring program associated with
17 the PKMW project, so -- so that's where all of this
18 comes from.

19 I have to admit we haven't gotten to
20 the level of looking at -- at the respondent's
21 framework and action levels related to these -- these
22 things that would be measured.

23 Anybody else, Bill or Megan, want to
24 speak to that?

25

1 (BRIEF PAUSE)

2

3 MR. JOHN MCCULLUM (by ZOOM): Okay. 4

I guess that's our answer.

5 MS. KATY DIMMER (by phone): Thank you
6 for your answer and your presentation today.

7 Fort Resolution Metis Government is
8 also concerned about the safety in -- of fish and the
9 safe -- safety of the consumption of fish, so any
10 further work in regards to this would be appreciated,
11 and no further questions, Mr. Chair.

12 MR. RYAN FEQUET: Thank you very much.
13 Board staff, any questions for EMAB at this time?

14 DR. KATHY RACHER: Kathy Racher, for
15 the Board. Just one (1) general question 'cause I --
16 I -- obviously, I don't want to go through all -- all
17 the recommendations individually.

18 I'm just wondering, at this stage,
19 given Diavik's responses to your recommendations and
20 the discussion so far, what your -- I want to get a
21 sense of what your major con -- outstanding concerns
22 are, understanding that you may give us more details
23 in your closing comments.

24 MR. JOHN MCCULLUM (by ZOOM): John
25 McCullum, EMAB. That's a big question.

1 All of the above. So I don't mean to
2 be fatuous. I -- I don't know how to go through that
3 and say this one's more important than that or --

4 DR. KATHY RACHER: Kathy Racher, for
5 the Board. I guess I was -- I was looking for not
6 individual recommendations, but sort of topic areas
7 that are -- are of most concern, outstanding concern,
8 for you, not individual recommendations.

9 Is it -- is it -- you know, is it --
10 like the -- some of the recommendations were for --
11 you know, for monitoring, was -- this can be
12 considered in -- in Aquatic Effects Monitoring Program
13 or Closure Programming -- Closure Plans, et cetera.

14 So I just -- I guess I just wanted to
15 get a sense from you from everything that you -- you
16 had a lot of responses from Diavik, and -- and just if
17 there was anything in particular that's highest on
18 your list in terms of -- of overall concerns. And
19 like I said, topic areas, not recommendations. If you
20 can't answer that, that's fine.

21 MR. JOHN MCCULLUM (by ZOOM): Okay.
22 John McCullum, EMAB. Thanks again.

23 Well, I mean, there's a big focus on
24 monitoring. A lot of the -- you know there are a lot
25 of questions around the modelling and a certain amount

1 of uncertainty around that.

2 And so our -- we have detailed
3 recommendations about monitoring for fish and for
4 water quality and for sediment and, you know, to
5 verify that what the modelling is saying is bearing
6 itself out in reality. So that that would be a big
7 thing.

8 We'd really like to see that PK slime
9 study done; that was a -- that was a major thing that
10 we've been talking about since the beginning.

11 The -- yeah, up -- up -- yeah. I'm
12 sorry, Kathy. It -- it is hard for me to say exactly
13 which is -- there -- there are a few things that are
14 of -- of less importance than others probably, but --
15 but most of them were -- were pretty -- the -- the
16 board's pretty behind and feel they need to be
17 addressed.

18 MR. RYAN FEQUET: Okay. Just checking
19 in with the Board's legal counsel. Any questions for
20 EMAB at this time, John?

21 MR. JOHN DONIHEE (by ZOOM): No.
22 It's John Donihee, for the Board. No, I have no
23 questions. Thank you.

24 MR. RYAN FEQUET: Next through the
25 Chair, Joe, any questions from the Board members for

1 EMAB?

2 THE CHAIRPERSON: John, thanks for the
3 presentation. Joe Mackenzie, and no question.

4 BOARD MEMBER MASON MANTLA: Mason
5 Mantla, Board member. No questions.

6 BOARD MEMBER RACHEL CRAPEAU: Rachel
7 Crapeau, for the Board. I don't have any questions.
8 Thank you.

9 BOARD MEMBER MIKE NITSIZA: Mike
10 Nitsiza, Board member. Thank you, John, and I got no
11 further questions.

12 BOARD MEMBER ALEX NITSIZA: Alex
13 Nitsiza, Board member. No question. Masi.

14 MR. RYAN FEQUET: Okay, thanks,
15 everybody. I just want to deal with two (2) -- two
16 (2) procedural items. The first is just a request, I
17 guess, from Board staff. In -- in talking with
18 Diavik, we would like to just ask any parties if they
19 have any objections.

20 Tomorrow morning, the Independent
21 Review Panel will be available for any additional
22 questions that folks have. And we were proposing to
23 follow the order of questioning that's outlined on the
24 agenda, but for tomorrow morning, we recognize that
25 DDMI knows their -- their model the best.

1 And it might be more efficient for the
2 -- everyone's time if they were the last Intervener to
3 -- to ask any questions, just so if there's any lack
4 of clarity around any of the recommendations from the
5 Panel, they can help set the record straight so the
6 Board will have clarity on the record.

7 So I -- I think we just wanted to ask
8 Interveners and parties at the hearing if they had any
9 objections to that for tomorrow morning.

10

11 (BRIEF PAUSE)

12

13 MR. BRETT WHEELER: Brett Wheeler, for
14 the Tlicho Government. We have no problem with that.
15 Masi.

16 MR. RYAN FEQUET: Thank you, Brett.
17 And I would ask if any party could just confirm one
18 way or the other.

19

20 (BRIEF PAUSE)

21

22 MR. JOHN MCCULLUM (by ZOOM): John
23 McCullum, EMAB. No problem.

24 MR. RYAN FEQUET: Thanks, John.

25 GNWT...?

1 MR. RICK WALBOURNE (by ZOOM):

2 Thanks, Ryan. Yeah, we weren't sure if you were going
3 to do a roundtable or how this was going to work, but
4 Rick Walbourne, for GNWT. We have no issue with that
5 proposal.

6 MR. RYAN FEQUET: Thank you, Rick.

7 Marc, from DKFN...?

8 MR. MARC D'ENTREMONT (by ZOOM):

9 Yeah. Thanks. Marc D'Entremont, for DKFN. No, we're
10 fine with that proposal.

11 MR. RYAN FEQUET: Thanks, Marc.

12 Anna or -- or Meagan, from ECCC...?

13 MS. ANNA GRAHAM (by ZOOM): Anna

14 here, ECCC. We have no problem with that plan.

15 MR. RYAN FEQUET: Thanks, Anna.

16 NSMA, Adelaide...?

17 MS. ADELAIDE MUFANDAEDZA (by ZOOM):

18 Thank you. We have no problem with that

19 recommendation.

20 MR. RYAN FEQUET: Thanks, guys.

21 Yellowknives Dene First Nation, Sarah...?

22 MS. SARAH GILLIS (by ZOOM): Sarah

23 Gillis, Yellowknives Dene First Nation. No issue.

24 MR. RYAN FEQUET: Okay. Thank you,

25 everybody. So we'll just -- we'll do that in the

1 morning.

2 The second item is we have the -- the
3 undertakings that were discussed yesterday. Board
4 staff have just tried to refine them to just be very
5 clear before we read them into the record, so I
6 believe they're ready.

7 Okay. And so John -- Mr. John Donihee,
8 our legal counsel for the Board, will just read them
9 into the record. Go ahead, John.

10 MR. JOHN DONIHEE (by ZOOM): Thank
11 you, Ryan. Thank you, Mr. Chair. I'll jut read them
12 in order.

13 Undertaking Number 1: DDMI will
14 respond to the questions sent by the Board via email
15 to Sean Sinclair on December the 16th, 2020. DDMI is
16 asked to identify and explain any challenges and/or
17 advantages to including the standard conditions
18 identified in the email in licence W2015L2-0001.

19

20 --- UNDERTAKING NO. 1: DDMI will respond to the
21 questions sent by the
22 Board via email to Sean
23 Sinclair on December the
24 16th, 2020. DDMI is asked
25 to identify and explain

1 any challenges and/or
2 advantages to including
3 the standard conditions
4 identified in the email in
5 licence W2015L2-0001.

6

7 MR. JOHN DONIHEE (by ZOOM):

8 Undertaking Number 2: DDMI will propose new language
9 for the scope of licence W2015L2-0001. This language
10 will align with the Board's standard conditions.

11

12 --- UNDERTAKING NO. 2: DDMI will propose new
13 language for the scope of
14 licence W2015L2-0001.
15 This language will align
16 with the Board's standard
17 conditions.

18

19 MR. JOHN DONIHEE (by ZOOM):

20 Undertaking Number 3: DDMI will list any concerns that
21 it would have if the Board were to remove Section E
22 from water licence 2015L2-0001, and provide a
23 rationale for those concerns.

24

25 --- UNDERTAKING NO. 3: DDMI will list any concerns

1 that it would have if the Board were
2 to remove section E from water
3 licence 2015L2-0001, and provide a
4 rationale for those concerns.

5

6 MR. JOHN DONIHEE (by ZOOM):

7 Undertaking number 4: DDMI will clarify whether
8 chloride and sulphate measurements should be retained
9 when sampling seepage from the drainage control and
10 collection system as currently written in licence
11 W2015L2-0001, under part H, condition 22(e)(ii).

12 If not, please provide the rationale
13 for why DDMI believes that chloride and sulphate are
14 not required to be sampled in this seepage.

15

16 --- UNDERTAKING NO. 4: DDMI will clarify whether
17 chloride and sulphate measurements
18 should be retained when sampling
19 seepage from the drainage control
20 and collection system as currently
21 written in licence W2015L2-0001,
22 under part H, condition 22(e)(ii).

23 If not, please provide the rationale
24 for why DDMI believes that chloride
25 and sulphate are not required to be

1 sampled in this seepage

2

3 MR. JOHN DONIHEE (by ZOOM): And
4 undertaking number 5: DDMI will indicate whether its
5 responses to Board staff questions 24, 27, 28, 32, 34,
6 37, 39, 40, 41, and 45, raised during the August 2018
7 public review, in relation to proposed changes to the
8 draft water licence for W2015L2-0001 still reflect the
9 DDMI position on appropriate licence contents.

10

11 --- UNDERTAKING NO. 5: DDMI will indicate whether its
12 responses to Board staff questions
13 24, 27, 28, 32, 34, 37, 39, 40, 41,
14 and 45, raised during the August
15 2018 public review, in relation to
16 proposed changes to the draft water
17 licence for W2015L2-0001 still
18 reflect the DDMI position on
19 appropriate licence contents.

20

21 MR. JOHN DONIHEE (by ZOOM): Those 22
22 are the undertakings that the Board has listed to 23
23 date. Thank you, Mr. Chairman.

24 MR. GORD MACDONALD (by ZOOM): Gord
25 MacDonald, with Diavik.

1 Can I ask a clarification?

2 MR. RYAN FEQUET: Sure, Gord. Go
3 ahead.

4 MR. GORD MACDONALD (by ZOOM): Okay. 5
On the one on -- Gord MacDonald, with Diavik.

6 On the one on scope, can -- can it be -
7 - I mean, it's directed that we -- it sounds like it's
8 directed like we must do this.

9 Can we -- can it also be an option that
10 we -- we respond with why we -- why we don't think a
11 change of scope is appropriate, if -- if we don't
12 think it's appropriate?

13 MR. JOHN DONIHEE (by ZOOM): Mr.
14 Chairman, I -- it's Diavik's undertaking and if they
15 would prefer to word it in that fashion, I think
16 that's appropriate. That's no problem.

17 So we would simply say that you will
18 either propose new language for the scope or, if
19 Diavik believes no change should be made, it will
20 provide its rationale for staying with the scope as
21 currently written.

22 MR. GORD MACDONALD (by ZOOM): Gord
23 MacDonald, Diavik. Thanks, John.

24

25 (PAUSE)

1 MR. RYAN FEQUET: Thank you, John.

2 And thank you, Gord, for that.

3 So it's 3:45. I think we did really
4 good today and we're actually -- maybe it looks like
5 we're behind on the agenda, but I think we're ahead,
6 as far as we can tell, with all the timing of upcoming
7 presentations. And I'll turn it over to -- to Joe
8 here.

9

10 (INDIGENOUS LANGUAGE TRANSLATED IN TO ENGLISH)

11

12 THE CHAIRPERSON: We are going to the
13 next item once you have agenda was (AUDIO CUTS OUT)
14 Independent Review Panel (AUDIO CUTS OUT) tomorrow
15 morning. So tomorrow morning, I guess, first thing on
16 the -- on the agenda will be a presentation from
17 Tlicho Government.

18

19 (TRANSLATED CONCLUDED)

20 (AUDIO ISSUES)

21

22 MR. BRETT WHEELER: Okay. Masi for
23 that. Brett Wheeler, Tlicho Government.

24 Is there -- can you let us know the --
25 the order that we will be in tomorrow with the

1 Independent Review Panel? Masi.

2 MR. RYAN FEQUET: Thanks -- thanks,
3 Brett. If the Tlicho Government can accommodate it,
4 it would be probably ideal if you guys were after the
5 questions for the Independent Review Panel, since
6 they're kind of scheduled to join us for a specific
7 window in the morning.

8 So if that's possible, it would be
9 great to have the Tlicho Government just slide in
10 after that. So if that works?

11

12 (BRIEF PAUSE)

13

14 MR. RYAN FEQUET: So it would be 10:00
15 a.m. or a bit earlier if -- if the questions are done
16 before then. The Panel is available for -- from 9:00
17 till 10:00 a.m. tomorrow morning.

18 MR. BRETT WHELDER: Masi.

19 MR. RYAN FEQUET: Okay. Masi,
20 everybody. Thank you very much. And we'll call it a
21 day and we'll see everyone here in the morning. As
22 early as 8:30 this will be open and we'll be live
23 streaming, so anyone can log in after 8:30 and show up
24 for coffee here in person. With everything kicking
25 off at 9:00 a.m. Thanks, everyone.

1 --- Upon adjourning at 3:47 p.m.

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4 Certified Correct,

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9 Wendy Woodworth, Ms.

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